

Understanding the work and learning of high performance coaches

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Background: The development of high performance sports coaches has been proposed as a major imperative in the professionalization of sports coaching. Accordingly, an increasing body of research is beginning to address the question of how coaches learn. While this is important work, an understanding of how coaches learn must be underpinned by an understanding of what coaches do. This is not to suggest a return to the behaviouristic accounts of coaching, rather a greater consideration of what tasks entail modern coaching work, especially within the dynamic and evolving vocation of high performance coaching.

Purpose: In order to add greater texture to accounts characterising high performance coaching as a highly complex collection of practices, this paper will consider the tasks that full-time coaches at a State Institute of Sport (SIS) perform in their work, with a follow-up account of how they felt they learned (or did not learn) the requisite skills and abilities.

Participants and setting: Six full-time, high performance sports coaches (average age = 42 years; range = 30–54 years) with an average of 23 years coaching experience (range = 10–34 years) participated in this study. Six sport administrators varying in level of responsibility and authority also participated. All participants were drawn from an Australian state (provincial) academy/institute of sport.

Data collection: Participation was open to all coaches and administrators within the SIS with six coaches and six administrators volunteering prior to commencement. All participants were involved in semi-structured interviews aimed at examining the work of SIS coaches and the perceived sources of learning that coaches accessed throughout their careers. The interviews took an average of 82 minutes to complete (range = 60–110 minutes).

Data analysis: The interviews were transcribed verbatim, checked for accuracy and returned to the participants for member checking. An interpretative analysis of the interview data was carried out following procedures outlined by Côté and colleagues. The construction of meaning units was enhanced through the use of a decision-making heuristic developed by Côté and Salmela.

Findings: SIS coaches were required to perform a great number of tasks ranging from those relating to direct coaching to those associated with public relations behaviours. Coaches and administrators were also able to identify a range of sources of learning prior to, and during their employment with the SIS. Based on a comparison of work tasks and learning experiences, it was determined that SIS coaches were not well prepared to complete a variety of tasks required of them in the SIS environment.

Conclusions: Through an analysis of their previous athletic and coaching experiences it is proposed that the coaches were well-prepared to undertake the tasks that were deemed

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to be central to their coaching work but were less equipped to undertake a range of other tasks required of them when they were first employed at the SIS.

Keywords: coaching; learning; work

Introduction

There is an increasing body of research devoted to understanding how sports coaches develop their craft (e.g. Côté 2006; Gilbert, Côté, and Mallett 2006; Irwin, Hanton, and Kerwin 2004; Werthner and Trudel 2006; Rynne, Mallett, and Tinning 2010). While this is important work, an understanding of how coaches learn should be underpinned by an understanding of what coaches do. Having a clear conception of what constitutes coaching work is even more important when it is considered that the work of high performance coaches has previously been described as chaotic and ever evolving (Bowes and Jones 2006; Lyle 2002). We are not advocating a return to behaviouristic accounts of coaching, rather what we propose in this paper is a renewed and contemporary consideration of what tasks entail high performance coaching work. In order to achieve this, we will draw upon research conducted with full-time high performance coaches at a State Institute of Sport (SIS).

The State Institute of Sport (SIS) (pseudonym) is typical of the academies and institutes of sport that have proliferated throughout Australia (and indeed the world) in the past few decades. Like most other sporting institutions of its kind, the aim of the SIS is to improve elite athletic performance, specifically at national and international championships. The SIS coaches are (at least rhetorically) positioned as key determinants of athletic performance and as such, they are considered central to the SIS's goals. This positioning is in keeping with research into the talent development process which has consistently shown that sport coaches are central to the achievement of athletes (Gilbert, Côté, and Mallett 2006; Starkes and Ericsson 2003). The importance of high performance coaches is further highlighted by the fact that at the time of the study, they were the largest group of employed people within the SIS, with approximately 24 coaches holding full-time employment. However, despite their described importance to the SIS, important questions remain regarding what constitutes the work of SIS coaches and the sources these key personnel access in developing their skills.

As alluded to at the beginning of this section, high performance sports coaching has been described as involving the highest levels of athlete and coach commitment, public performance objectives, intensive commitment to the development and implementation of programs, highly structured and formalised competitions, typically full-time work, heavy emphasis on decision making and data management, extensive interpersonal contact, and very demanding and restrictive athlete selection criteria (Lyle 2002; Trudel and Gilbert 2006). In attempting to conceptualise such work, a range of theorists have generated models 'of' and 'for' coaching (for reviews see e.g. Cushion, Armour, and Jones 2006; Lyle 2002). As will be described later, MacLean and Chelladurai's (1995) model 'of' coaching (see Figure 1) was generative in attempting to connect the results of this study with existing literature in the field of sports coaching.

MacLean and Chelladurai's (1995) model of the dimensions of coaching performance is a literature-based model, developed to underpin a coach appraisal scale. It has been acknowledged as providing useful ways to describe product and process factors as well as the more specific direct and indirect behaviours of coaches (Cushion et al. 2006; Lyle 2002; MacLean and Chelladurai 1995). A potential limitation identified by

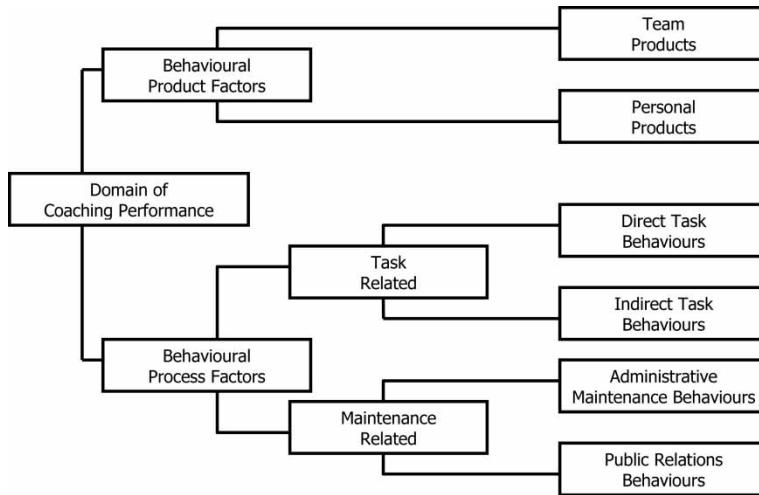


Figure 1. The dimensions of coaching performance (MacLean and Chelladurai 1995).

Cushion et al. (2006) is that while strong reference is made to the occupational context, the model makes unproblematic assumptions about the existence of the coaching process which surrounds it. Despite this, a feature of the MacLean and Chelladurai (1995) model that was often missing or marginalised in other models (e.g. Côté et al. 1995; Lyle 2002) is the strong consideration of organisational demands placed on the full-time employed coach. As noted by Cushion et al. (2006) the model adopts an occupational and organisational approach to coaching. In particular, a feature of this model that is often ignored in discussions of coaching work, is the ‘maintenance related’ dimension and the associated ‘administrative maintenance behaviours’, and ‘public relations behaviours’. These organisational demands are considered relevant to the work of high performance coaches (e.g. Lyle 2002).

Central to coming to know how to perform high performance coaches’ work are the sources of learning accessed by coaches both prior to and during coach employment (Côté 2006; Irwin, Hanton, and Kerwin 2004; Rynne, Mallett, and Tinning 2006). In the domain of workplace learning, Billett (e.g. Billett 2001a, 2004, 2006) emphasises a consideration of the workplace affordances, the individual’s personal agency, and the interdependence between them in accounts of how workers learn to perform their tasks. The subsequent suggestion is that an individual’s premeditated experiences influence the learning that is currently occurring and what might occur in the future. As such, the previous learning experiences of the SIS coaches are considered important in directing their personal agency.

The primary purposes of this research were to (a) examine the tasks undertaken by high performance coaches within an Australian sports institute (SIS), and (b) investigate the key sources of learning for high performance coaches’ work both prior to and during full time employment.

Procedure

Semi-structured interview protocols were used to examine the work of the SIS coaches and the perceived sources of learning that coaches accessed during their careers. These

interviews took an average of 82 minutes to conduct (range = 60–110). The interviews were transcribed verbatim, checked for accuracy and returned to the participants for member checking. An interpretative analysis of the interview data was carried out following procedures outlined by Côté and colleagues (1993). Accordingly, the analysis essentially took place in two (sometimes overlapping) phases: data organisation (creating tags) and data interpretation (creating categories). By initially creating tags, the aim was to produce a set of concepts which adequately represented the interview transcripts. The text was divided into segments called meaning units (MUs) which was then tagged with a provisional name describing the topic of the text. The creation of categories involved listing and comparing the tags. Those tags with similar meanings were grouped and labelled. It should be noted that the categories necessarily remained flexible as they were derived from data analysis and needed adjustment as the process continued (Côté et al. 1993).

The construction of meaning units was enhanced through the use of a decision-making heuristic developed by Côté and Salmela (1994). More specifically, two questions were used to guide the process: Is the MU meaningful when read out of the interview context? And does the MU contain more than one topic? In guiding the creation of categories, a further question was asked: are all the regrouped tags similar? Finally, to analyse the categories four questions guided the process: What are the similarities in the content of each category? What is the uniqueness in the content of each category? Is there confusion or contradiction in the content of a category? And how is the content of a category relevant to the research project (Côté and Salmela 1994)? By adopting the guidelines for organising and interpreting unstructured data provided by Côté and colleagues (1993) and the additional decision-making heuristic described by Côté and Salmela (1994), the intention was to demonstrate that systemised measures were taken to provide results that best describe the phenomena under study, thereby improving the credibility of the findings. In preparing this paper a subsequent, comparative analysis (Neuman 2000) was undertaken in relation to the categories of work undertaken by SIS coaches and the major sources of SIS coach learning.

Participants

Non-probability sampling (purposive) was employed with the primary criterion for inclusion being that the coaches worked fulltime in the SIS environment. Accordingly, all 24 SIS coaches were invited to participate in the semi-structured interviews. The six coaches recruited included four individual sport coaches (Grant, Brett, Adam and John) and two team sport coaches representing direct interceptive and indirect interceptive sports (Clarke and Chris respectively). One coach was categorised as a foreign coach while the remaining five were born in Australia. Further, four of the coaches were in charge of programs designated as international while two were involved in developmental (elite youth) programs. All had coached athletes/teams to international representation. The average age of the cohort was 42 years (range = 30–54) and the group had an average of 23 years of coaching experience (range = 10–34). All of the coaches had some form of tertiary education (e.g. community college or undergraduate qualifications) but with only one exception, all study had been completed in non-sports related fields (e.g. business). Outside of formal tertiary study, the coaches had engaged in an average of nearly 500 hours of formal training, most generally under the auspices of coach accreditation/certification (range = 87–1150).

The involvement of a range of administrators was also sought for this study. The administrator participants were all involved in some way in directing coaching work and in employing SIS coaches. For this reason it was felt that administrators would have valuable perspectives regarding what it is that SIS coaches do (i.e. what is their work), and what previous experiences are key to performing that work (i.e. what sources do administrators value in selecting SIS coaches). The administrators ranged in their level of responsibility and authority from manager to SIS board member. Accordingly, while the level of direct contact with coaches varied, a level of guidance and input regarding coaching was present at all levels (be it operational or strategic). The administrators were Geoff, Damian, Cameron, Alan, Andrew and Patrick.

This research adhered to strict university ethical procedures and accordingly participation was voluntary and anonymity was assured. Because of the small number of female coaches and administrators at the SIS, any females selected for inclusion in the project would be readily identifiable even if female pseudonyms were assigned. For this reason, male pseudonyms were assigned to all participants.

Results and discussion

SIS coaching tasks

Through an inductive analysis of the semi-structured interview transcripts, 11 categories of tasks were identified including hands-on coaching, personal support for athletes, programming, managing the program or squad, managing a team of support staff, talent identification/selection, administration, liaising with stakeholders, representing the SIS, and sharing with other coaches. The various tasks comprising the work of SIS coaches are

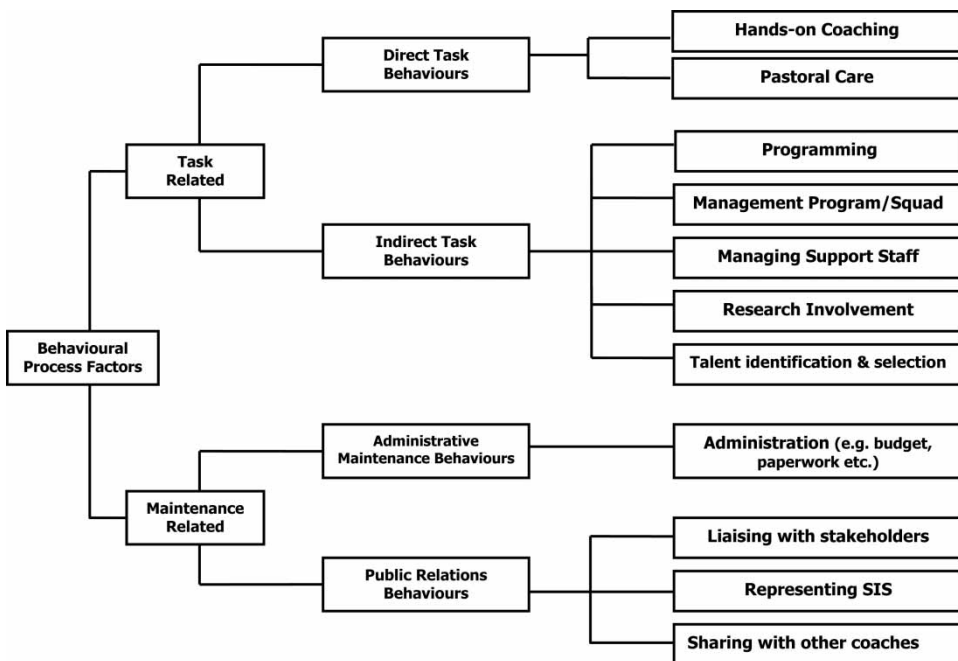


Figure 2. Categorisation of the work of the SIS coaches (adapted from MacLean and Chelladurai 1995).

represented below (Figure 2) in an adaptation of the MacLean and Chelladurai (1995) model. In attempting to connect the current results to the broader literature on coaching work, the MacLean and Chelladurai model was considered the closest fit compared with other models (e.g. Côté et al. 1995; Lyle 2002), although aspects of all three models were representative of SIS coaches' work. We acknowledge that the two-dimensional nature of models such as Figure 2 serves to mask the inherent complexity, fluidity and inter-relatedness of coaching work. We persist, however, with such a representation because of its value in conceptualising and categorising the work of SIS coaches in the broader field of sports coaching. In keeping with this aim, the following sections will detail the (re)conceptualisation of the model with respect to the current findings related to SIS coaching work.

Direct task behaviours

The category of direct task behaviours as described by MacLean and Chelladurai (1995) refers to the 'application of interpersonal skills and appropriate strategies and tactics used to enhance the performance of individual athletes and the team as a whole' (199). We advocate a reconceptualisation of direct task behaviours as there is merit in including programming in a separate category (i.e. in line with Lyle's [2002] conceptualisation) because although it is acutely related to the performance of the athletes, it is generally performed at a time and place removed from the direct coaching context.

Hands-on coaching. The centrality of this task was underlined with four of the six coaches referring to hands-on coaching as either the most important task they performed or the primary reason that they were employed. Likewise, the administrators noted the significance of direct intervention to the work of the coaches:

[the major task of a SIS coach is] to provide the technical expertise and the training and coaching of athletes . . . one of the reasons I think we hire particular coaches is because of their expertise in the technical, coaching side of things. (Patrick)

This task was consistently referred to as the most important aspect of the SIS coaches' work and it generally took place at competitions and in the daily training environment.

Pastoral care. Interest in the broader personal development of athletes under the care of a coach is not a new phenomenon. For example, Côté and Salmela (1996) cited 'helping gymnasts with personal concerns' as an organisational task identified by high performance gymnastics coaches. For the SIS coaches, the care of their athletes often extended to a pseudo-parent role as indicated by Adam's comments:

you're trying to um, be another parent to a lot of these kids . . . the family put some of that responsibility onto you to try and encourage their kid to get something out of the sport but also to develop some life skills out of it as well. (Adam)

Indirect task behaviours

Given the edict of activities that 'contribute indirectly to the success of the program' (MacLean and Chelladurai 1995, 199) we advocate the broadening of the dimension to include the pre-existing talent identification element as well as the management of the program and support staff, research involvement, and programming.

Programming. According to the participants, programming entailed the design of operational plans for submission to the SIS, annual training and competition plans, and the periodisation of macro and micro cycles of training and competition. The importance of planning was strongly emphasised by coaches and administrators as evidenced by Grant's comment: 'good planning of the training they do ... is probably the fundamental thing that success rides on'. This is in keeping with accounts that suggest that the ability to plan and set goals are skills necessary for success in high performance coaching (Côté and Salmela 1996; Hurley 2000).

Managing a program/squad. Given the broad nature of the requirements of this task, it is not entirely surprising that coaches and administrators agreed that it was a difficult undertaking. Regarding managing the program, Brett said, 'management of the athletes and coaches [is the most difficult task] just because you are dealing with personalities, egos, um conflict resolution ... Managing athletes to maximise their performance isn't easy'. This broad task of managing a program and squad requires coaches to have a variety of organisational and people-management skills to function effectively (Hurley 2000).

Managing support staff. 'The coach can't be expected to have all the specialist knowledge' (Cameron). In this statement, Cameron was indicating that it is necessary for coaches to draw on the experiences and expertise of other professionals. This situation has been the case for more than a decade in Australian high performance coaching settings where coaches are required to coordinate input from para-professionals such as assistant coaches, conditioning coaches, specialist coaches, sport scientists, psychologists, nutritionists, sport medicine practitioners, masseurs, video technicians, and the like (Woodman 1993). For the coaches of SIS programs that were well-resourced in this regard, there was a need to manage these support personnel.

Research involvement. Primarily, coaches and administrators indicated that involvement in research activities was based on the hope that research would provide them with the competitive edge either through the development of new technologies, equipment, or ways of doing things. Other researchers in the Australian context have also previously found that coaches (and sports scientists) place great value on the importance and application of research (Williams and Kendall 2007).

Research involvement for the current cohort ranged from very little contact with research or researchers through to those coaches who had interwoven research projects into their ongoing programs. It should be noted that it was very rare for the coach to be conducting the research. Generally it was an allocated sports scientist or research centre scholar.

Talent identification and selection. One coach indicated that talent identification and selection (also called scouting and recruiting) were the starting points for the entire program: 'first of all, find the right athletes' (Chris). Highlighting the complicated nature of this aspect of coaching is the work of Vrljic and Mallett (2008) who noted that little is known regarding how coaches conceptualise talent in selecting athletes for successful performance. Extending the discussion further, Christensen (2009) challenged the commonly held assumption that talent identification was a rational or objective process. In the current study, Clarke likened it to a game of chance because of the inherent uncertainty of future performance: '[talent identification is] a bit like gambling ... You've got say "is that going to be the right choice?"'.

Administrative maintenance behaviours

Given the governmental and subsequently bureaucratic nature of some SIS operations, this dimension is a particular strength of the MacLean and Chelladurai (1995) model as other models often marginalise or ignore this aspect of coaching work.

Administration. The term 'administration' as used by SIS coaches and administrators was found to include tasks such as budgeting, reporting, and generic paperwork. The coaches seemed to accept the administrative tasks as necessary components in the overall functioning of the program while acknowledging that they had a limited direct impact on the performance of the athletes. Administrators held similar views as demonstrated by Alan's comment: 'the accounts and filling in the various forms I would put as a low priority, but it still needs to be done'.

Public relations behaviours

The description of this dimension by MacLean and Chelladurai (1995) makes reference to 'liaison activities between one's program and relevant community and peer groups' (199). We have attempted to apply the perceived intention of MacLean and Chelladurai's (1995) description to the SIS setting. In doing so, a number of the inductive categories including liaising with stakeholders, representing the SIS, and sharing with other coaches have been included.

Liaising with stakeholders. Administrator Damian made the following point:

In sport, you don't have one boss. In our case there is the national body, the state body and the [SIS] but also the approval comes from their athletes, the parents, from their partner, there is a whole range of people who they [coaches] are seeking the thumbs up from. (Damian)

Successfully interacting with the variety of people who have an interest in the work of coaches has been acknowledged elsewhere as a very difficult task (Hurley 2000).

Representing the SIS. This is the category that resonates most with the dimension as described by MacLean and Chelladurai (1995). Alan suggested that the marketing and promotion of the SIS by coaches was an easy task that they performed: 'marketing the SIS and having a presence in the sporting community [is an easy task]. That is an easy role because just you being there, people will talk about you'.

Sharing with other coaches. Sharing with other coaches referred mainly to the dissemination of coaching information or knowledge to coaches generally coaching at a lower performance level than the SIS coaches. While it was not a specifically stated requirement of the position, an administrator noted that meeting with 'feeder' and development coaches was a task that the SIS coaches performed: '[the SIS coach will,] in some ways be responsible for filtering of that technical information that is spread through the coach network' (Alan).

Sources of learning accessed

Having given an account of the tasks that SIS coaches typically perform in their work, it is possible to consider the sources of learning that SIS coaches and administrators discussed

with regard to this work. Because of the workplace orientation of this study, these sources of learning are discussed below in three main sections that are representative of their contextual and temporal connection with the workplace: sources that are broader than or external to the SIS environment, sources that were accessed both within and outside of the SIS environment, and those that were accessed solely within the SIS environment.

Broader than and/or external to the SIS environment

There were a range of sources of coach development that were accessed well before the coaches were employed by the SIS and were reportedly still making significant contributions to the learning of the coaches without any direct support from the SIS. These included learning from general life experience, self-directed reading, tertiary study, state and national sporting organisation provisions, attending major sporting events, visiting other professional organisations, other trained professionals, experience as an athlete, and other (non-SIS) coaches. The final two were referred to by the majority of participants and are discussed further below.

Experience as an athlete. In keeping with the findings of Gilbert and colleagues (2006), the SIS coaches had many thousands of hours spent as athletes engaged in competition and training activities. SIS coach Adam explained how he had used his experience as an athlete to help him in performing his coaching work: 'I've probably developed my own techniques to start off with based on what I knew as an athlete'. The limited scope of this statement is of interest with Adam only referring to one aspect of his coaching work; teaching techniques. It appears then that although there are some limitations related to the scope of potential learning, the valuable aspect seems to be some immersion in the sporting context.

Other coaches (non-SIS). Administrator Damian put it simply by saying 'you just learn from other coaches'. The primary advantage of this source of learning was that coaches within their sport were felt to have great credibility. For example, Brett said, '[I prefer learning from other coaches because] they are the ones that are out there doing it'. Indeed a range of workplace studies have shown that colleagues in the same industry are often the most valuable source of learning for workers (e.g. Coetzer 2007). This overall appearance of utility in sport coach development tended to mask the underlying issues with learning from other coaches within the same sport.

A major issue with this source of learning was with respect to the fundamentally competitive nature of elite sports. For example, Chris said, 'you run into a lot of coaches who are very defensive about their knowledge'. Another issue was that the SIS coaches stated that in many cases, other coaches in their particular sport were simply not knowledgeable enough to be able to help. John said quite simply 'most of the coaches in my sport really can't tell you much'. Chris provided further support saying, 'I have reached a level now where I feel I am in many areas the equal or superior to any coaches in Australia'. Whether these comments reflect a lack of knowledge or a lack of willingness to share, it is clear that learning through this source is, at times, severely compromised for the SIS coaches.

External and internal

While there is obviously overlap between sources generally more external and those thought to be more internal to the SIS, learning from previous coaching experiences and

learning from current and former athletes were sources that clearly straddled this contextual and often time-based divide.

Experience as a coach. The coaches rated 'on-the-job experience' (i.e. experiences while performing coaching work), as being of greatest value to their development throughout their careers. Chris indicated that meaningful development came from coaching experience because as the head coach, you are obligated to make decisions regarding your athletes. He went on to say that there was a need to learn 'from the experiences you have and ... the situations where you get to make the decisions' (Chris). Development through previous coaching experiences has been identified by a range of researchers as being important in other contexts (e.g. Abraham, Collins, and Martindale 2006; Côté 2006; Gilbert, Côté, and Mallett 2006; Nelson and Cushion 2006; Telles-Langdon and Spooner 2006; Trudel and Gilbert 2006; Way and O'Leary 2006; Werthner and Trudel 2006). Similarly, on-the-job-learning has been identified as a primary contributor in workplace learning studies (e.g. Eraut 2004; Fenwick 2001; Ha 2008).

When asked how he believed the SIS coaches learnt how to perform the most difficult tasks required of them Cameron said, 'trial and error [laughs] a lot of the times'. Geoff said, 'you will learn, unfortunately, by your mistakes [with] different athletes'. Cameron's laugh in his previous statement and the use of the word 'unfortunately' in Geoff's response to this question gives some indication that while trial and error is a recognised learning strategy, it may not be the most efficient in a variety of situations.

Current and former athletes. In terms of learning from other significant actors in the coaching environment, administrator Geoff suggested that 'coaches learn as much from their athletes as from ... other stuff [e.g. workshops and seminars]'. Chris said, 'I have learnt so much from working with the [athletes] I used to coach when they come back here'. Accessing international-level athletes and even seeking feedback from current athletes in SIS programs was not without threat to the coaches though. John stated, 'when I first started I wouldn't have the confidence to ask for as much feedback from athletes in case they said I was [laughs] wrong'. It is this theme of isolation, and the fear of being seen to not have all the answers (i.e. perceived as incompetent) that pervades much of the coaches' discussion of the sources of learning they access. These themes also serve to limit the utility of the sources through often superficial encounters.

SIS sources of learning

According to the coaches and administrators, the SIS made a range of affordances that had the potential to impact on coach learning including generic provisions, induction programs, team briefings, the information centre, SIS courses, and other members of staff including other SIS coaches and the managers. Of greatest significance were the responses regarding generic provisions and other members of staff.

Generic provisions. Organisations generally provide phone and internet access for their employees. In the case of the SIS, these provisions meant that the coaches could access people and resources in a timely manner with no personal costs incurred. Being associated with the SIS meant that coaches had access to other people (e.g. scientists, coaches, athletes) and organisations (foreign programs) that non-SIS coaches would find largely inaccessible. In terms of the professionalization of coaching more generally, having full-time

employment with the SIS meant that coaches were able to justify their investment in personal development.

SIS staff members. Staff members from other work units (e.g. finance and sports science) reportedly made significant contributions to coach learning, as did the other SIS coaches and the managers.

Other work units. Cameron said that for learning associated with administrative tasks, coaches 'need to look at the expertise that we have in the organisation in terms of administration and in terms of financial management'. Similarly, SIS-associated sport psychologists, sport scientists and strength and conditioning coaches were also cited as sources of learning for SIS coaches. In particular, John described informal discussions by saying 'interacting with the SIS sports psychologist informally has been useful ... I might just run into the psych or see the psych at a workshop or something like that ... that's something that I have used a lot'. This is in keeping with Billett's (2001a, 2001b) descriptions of guidance by others in the workplace. In this case, the other members of staff are able to help the coaches secure knowledge that they would otherwise not learn alone.

Regarding coach interactions with the SIS para-professionals, one of the administrators said, 'there are some that seem to use [them] more than others' (Patrick). This is not surprising given a number of factors. First, access to support services such as sport psychologists, sport scientists and strength and conditioning coaches are assigned based on a (performance-level) tiering system at the SIS. For this reason, some coaches, particularly those in developmental (cf. international) programs, may have very limited access to these services. Second, the majority of the coaches currently employed by the SIS did not have access to these para-professionals prior to being appointed to SIS positions. As such, it is possible that their understanding of the contributions that these para-professionals can have may be limited therefore leading the coaches to devalue them as a source of learning. Finally, it may be that some coaches feel ego-threatened by para-professionals particularly if they are not familiar with the contributions they can make. These issues are in keeping with the descriptions of a range of other workplace and learning theorists who notes that differential access and professional threat often result in workplace learning experiences that are non-uniform, nor uniformly compelling (e.g. Billett 2001b; Eraut 2004; Lave and Wenger 1991; Watkins 1991).

Sport programs managers. The sport programs managers are essentially the immediate supervisors of the coaches. A significant issue was the potentially problematic nature of the sport programs managers performing the dual tasks of supporting coach learning and evaluating coach performance. John commented 'sometimes ... you feel like you are being checked up on rather than being encouraged'. In his exploratory investigation into the role of supervisors in workplace learning, Hughes (2004) similarly noted that while a facilitative role is often envisaged, the learner's perceptions were often quite contrary (as exemplified by John above).

Other SIS coaches. Virtually all participants acknowledged the utility of other SIS coaches as a source of learning but most often it was with regard to the potential for learning with most noting that it was underutilised as a source. In this context, the SIS coaches might be considered to be a distinct (albeit poorly functioning) community of practice in that it is a group who together contribute to shared and public practices in a particular sphere of life (Boud and Garrick 1999; Kirk and Macdonald 1998; Lave and Wenger 1991). As a specific

source of learning, interacting with other SIS coaches had some unique advantages. It was proposed that there is a high credibility regarding this source of learning. Patrick raised this point when comparing this source with formal education: 'I think coaches seem less cynical about learning from other coaches than perhaps a course, a formal course'. Another point to be made comes from the communities of practice literature, which suggests that praise and advice from other community members may be the most meaningful because of the high levels of empathy possible between workers in similar situations (McDermott 2000). Indeed, part of the benefit of sharing problems and developing solutions in consultation with other SIS coaches appeared to have a strong connection to what Cameron alluded to when he said, 'one key thing with their peers is knowing that they are not isolated'. As mentioned previously, coaching can be an extremely isolated experience. By having others in a similar situation, undergoing similar problems, this feeling of isolation may be reduced.

There were some acknowledged issues with this source of learning. To establish relationships that are open and honest in high performance sport settings may require lengthy periods of time and also some kind of shift in the culture of the sport or organisation. Cameron suggested that problems may also be as a result of the personal characteristics of the coaches saying, 'some coaches are fairly closed'. Similarly, it would be naïve to suggest that learning from other SIS coaches is non-threatening. Being seen to be knowledgeable within the peer-coaching group is likely to be very important with personal status and credibility being at stake. Another problem involves the working habits of other coaches. The reality of coaching work is that it is not located in one physical area. The problems with not being at the SIS office regularly was not lost on Grant as indicated by this comment: 'the downside ... is that you don't have a lot of interaction with other coaches if you are never there'. Finally, one of the administrators noted that peer interactions, although acknowledged to be of great value at the elite level, are often ignored because they are much harder to encourage and facilitate than it is to run a course or organise a meeting.

Sources of learning in relation to the work of SIS coaches

Based on a comparative analysis of the sources of learning that coaches described and their descriptions of the work that they perform, it is possible to make some judgements regarding the work that the personal histories of the coaches have prepared them for. Similarly, there are a number of tasks that the coaches appear to be relatively unprepared to perform.

Generally well prepared

There were some tasks that the SIS coaches appear to have been well prepared to undertake through their personal learning histories. These tasks included hands-on coaching, programming and administration.

The SIS coaches had typically been involved in 'hands-on' coaching activities for many years. It appeared that for the great majority of the coaches, they had continued to adapt and develop with the continual changes in the underpinning knowledge and understandings of this type of work. The SIS coaches appeared to be quite proficient in performing hands-on coaching tasks, including a range of sub-tasks that were closely aligned with Lyle's (2002) description of direct intervention (i.e. attending competitions, conducting training sessions, providing direction regarding program expectations, and providing a range of services).

Underpinning this work was the task of programming. Although programming was reportedly quite complex due to its multifaceted nature, it was a challenge that the

coaches appeared relatively well equipped to carry out. In general, the coaches had engaged in programming tasks over a long period of time prior to becoming a SIS coach and although it may have been difficult when they began coaching, it was a task they appeared able to perform with confidence when employed in the SIS setting.

Finally, administrative tasks, while somewhat foreign at first, tended to be completed without much difficulty. High school mathematics and previous experiences in other workplace settings were reportedly sufficient preparation for the level of administration required in most SIS programs.

Generally underprepared

It should be noted that simply because the coaches appeared to be generally *underprepared* to perform the tasks in this section, it should not be taken as an indication that the coaches were *unable* to adequately perform these tasks. Indeed, there were a great number of coaches who were reportedly performing at an extremely high level in all areas. Like the coaches in Christensen's (2009) study, it may be that SIS coaches were able to deploy 'practical sense' to fulfil these aspects. Having said that, the tasks that coaches were seemingly underprepared to engage with at the SIS related to athletes (pastoral care, identification of talent), the management and support of programs or others (managing a program or squad, managing support staff, liaising with stakeholders, research involvement and supporting 'system coach' learning), and representing the SIS.

Related to athletes. While all coaches had extensive experience with athletes prior to becoming an SIS coach, the level of care and frequency of interaction was rarely at the extreme level generally required in the SIS environment. From subsequent discussions, it was evident that, aside from their own life experiences, the SIS coaches were not particularly well prepared to undertake this kind of work.

In a similar fashion, the SIS coaches had rarely been responsible for systematic identification and selection of athletic 'talent' to the extent required by the SIS. Indeed, the SIS coaches' employment was often contingent on the quality of athletes they were able to source for their programs. The broad, and most agreed upon position in the area of talent identification seems to be that identifying various aspects of 'talent' is at the very least problematic (Abernethy, Côté, and Baker 2002; Brown 2001; Ericsson and Charness 1994; Ericsson and Lehmann 1996). In the absence of definitive reasoning on which to base decision making upon, coaches were left to develop their own processes and philosophies regarding this practice, based on limited previous experiences and anecdotal accounts and without empirical support or direction.

Related to the management and support of others. While the coaches may have had significant experience in managing groups of athletes in training settings, the increased degree of intervention support (i.e. activities that support or prepare for intervention such as managing different forms of physiological data) required of SIS coaches generally exceeded anything that they had been previously exposed to. Similarly, a significant issue was that very few coaches had previously had access to personnel such as sports scientists and the associated resources and opportunities for research prior to being employed at the SIS and had therefore had limited opportunity to develop these management skills. It seems that although the SIS administrators expected coaches to perform all of these functions, many of the coaches were not well prepared for this aspect when employed by the SIS.

Finally, it was also expected that SIS coaches would take a leading role in developing a strong group of 'system coaches' who would feed athletes into the SIS. Supporting other coaches was certainly not without problems and concerns. Grant emphasised the nuances by saying '[a task I perform is] ensuring that the network coaches feel that they're getting adequate support and that varies considerably depending on the personality. So you end up having to work pretty hard to just deal with the personalities'. Brett was quite frank in his assessment of the source of the difficulty when he said 'my job is to develop a strong network of coaches ... we have meetings and try and develop some knowledge sharing and they don't like that'. Part of the reason for this closed attitude might be that elite sport is highly competitive, with few employment positions available. Consequently, like in other sporting contexts (e.g. Lemyre, Trudel, and Durand-Bush 2007) the coaches often view other coaches as competitors as opposed to colleagues.

Related to representing the SIS. The perception that the coaches were immediately recognisable as an elite coach in their sport, brought with it some expectations of conduct, and possibly more importantly, success. An interesting aspect was that administrator Alan acknowledged that there was little (if any) direction from the SIS regarding how to perform this task: 'is sort of just let go as, "well, they will be able to do it". It is something that you are not educated in'.

Summary

It is clear from the discussion above that the SIS coaches' personal learning histories have not always prepared them particularly well in relation to a range of SIS work tasks. The tasks that the coaches were well prepared to undertake, however, have been previously acknowledged as being of utmost importance to coaching quality and athletic success (namely hands-on coaching and programming).

Conclusions

From the findings and ensuing discussions presented above, the work of SIS coaches might be characterised as a highly complex endeavour. Indeed, previous research has identified that the dynamic, intricate and ambiguous nature of the role and the fact that it is often dictated by the context means that coaches require considerable flexibility and critical thinking skills (Jones 2005). While other models of sports coaching bear some resemblance to the work of SIS coaches, the dimensions of coaching performance (MacLean and Chelladurai 1995) was able to be modified to provide the best fit for this sample. Examples of proposed modifications included removal of 'programming' from direct task behaviours, (more in line with Lyle's [2002] conceptualisation of coaching tasks), broadening of indirect task behaviours (to include talent identification, management of program and support staff, research involvement and programming), and the inclusion of inductive categories in public relations behaviours (liaising with stakeholders, representing the SIS and sharing with other coaches). Having given an account of the wide variety of work tasks that the SIS coaches were required to fulfil, we were better able to describe and discuss the sources of learning that supported this work.

In performing this work, participants described a range of learning sources that SIS coaches were able to draw upon. A number of these sources could be considered to be largely external to the SIS including broader life experience, self-directed reading, formal tertiary study, NSO/SSO offerings, watching televised events, visiting other professional organisations as well as learning from previous athletic experiences and learning from

other (i.e. non-SIS) coaches. There were also a number of sources that could be considered to be both external (as they occurred prior to employment with the SIS) and internal (in that they continued involvement with them occurred as a result of their employment at the SIS). These included learning through interactions with current and former athletes, and learning from previous coaching experiences. Finally, there was a range of identified sources of learning that the SIS was more directly responsible for. The sources of learning reportedly provided by, or through, the SIS included a range of staff members (e.g. other SIS coaches, SIS managers, various support personnel), and other structures such as the information centre. It is worth noting that it was not the provision of 'special' opportunities that were considered of greatest importance for coach learning. It was the everyday coaching experiences that were most highly valued as a source of learning for the SIS coaches primarily because of the high degree of access and the direct relevance to coaching work. Additionally, development through engagement in everyday tasks required very few resources and similarly limited additional demands on coaches' time.

In light of the learning sources identified, the complexity and difficulty inherent in coaching work takes on greater significance when it is considered that when first employed, the SIS coaches did not appear to be particularly well equipped to undertake many of the tasks required of them. The results of a comparative analysis indicated that with respect to the all of the dimensions of coaching performance, there were aspects that the coaches had limited or no experience on which to base their work practices. Tasks associated with pastoral care (direct-task behaviour), management of a program/squad, management of support staff, research involvement, and talent identification and selection (indirect task behaviours), liaising with stakeholders, sharing with other coaches and representing the SIS (public relations behaviours) were all found to be problematic in this way. As a result, coaches were required to learn on the job with seemingly little guidance. Despite these issues, it should be noted that the tasks that SIS coaches appeared most adept at carrying out were central to the aims of the SIS and were regarded by the coaches and administrators as being the most important components of SIS coach work. So while there were many tasks that were largely unfamiliar to the SIS coaches when they were first employed, the most important tasks were the ones that the coaches had the greatest expertise and experience with. Included in this category were hands-on coaching and programming work.

The purposive sample of SIS coaches enabled an examination of SIS coaching work, however, the mixed make up of the cohort (i.e. varied types of sports, categories of programs and personal histories) does not permit the generalisation of results to all high performance contexts. Indeed, it will be up to readers to consider whether the findings may be of relevance to their own contexts. As noted previously, another possible limitation of this study is the reliance on a two-dimensional model to connect aspects of this current study to the broader literature on coaching work. The model tends to mask the inherent complexity, fluidity and interrelatedness of coaching work but it does have value in helping to broadly conceptualise the work of SIS coaches. Finally, while this paper has examined some of what the SIS coaches did, it did not completely capture the cognitive complexity and difficulty inherent in their work. Rather, these discussions represent a concerted effort to advance the descriptions of 'what' high performance coaches within an institute of sport do so that there might subsequently be more informed discussions centring on the issues of 'where' and 'why' they do it, with the eventual aim being to connect this with 'how' they learn to do it. When this information is considered, the complex role of the coach and the need for a holistic approach to the consideration of learning is highlighted. Given the wide range of elements and the previously characterised complexity of their work, the ways in which coaches come to know is of great significance.

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