

Workplace learning of high performance sports coaches

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The Australian coaching workplace (to be referred to as the State Institute of Sport; SIS) under consideration in this study employs significant numbers of full-time performance sport coaches and can be accurately characterized as a genuine workplace. Through a consideration of the interaction between what the workplace (SIS) affords the individual and the agency of the individual SIS coaches, it is possible to gain an understanding how high performance sport coaches learn in the workplace. Analysis of data collected by means of semi-structured interviews with a group of coaches ($n=6$) and administrators ($n=6$), revealed that coaches learned through a variety of sources both within and outside of (but often influenced by) the SIS. In addition, there were a range of factors such as the working climate and the physical environment that were reported to have an impact on the learning of the coaches (structure). In keeping with Billett's (2006) theorizing, aspects of the individuals' agency (e.g. passion for the sport, drive to be the best) were also found to be critical to the learning in the workplace.

Keywords: Learning; Sport coaching; Sport institute

Introduction

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Much early literature on learning was based around formal educational institutions such as schools and universities whose explicit function was education. With the massive changes in industry and the subsequent economic implications, there has been a shift from research on learning 'for' work to learning 'in' work (Billett et al., 2005). The State Institute of Sport (SIS) was chosen as a site for investigation as it is one of the only a few workplaces in Australia that employs numerous high performance sport coaches. These coaches comprise the largest group of employed people within the organization, but despite their centrality to the SIS, and to the athlete talent development process in general, little was known about how these key personnel continued to develop their skills during the period of their employment. What has been shown through previous inquiries into coach learning is that traditional means of formal coach education have been largely ineffectual and have not been highly valued by high performance coaches (e.g. Cushion et al., 2003; Trudel & Gilbert, 2006).

In other domains of work, it has been suggested that the most likely and accessible environment to assist the development of relevant and genuine learning will be the workplace itself (Billett et al., 2005). It has also been argued that workplace learning is under-researched, and has the potential to bring new perspectives to research on learning because it encompasses a wide range of more or less structured environments, which are only rarely structured with learning in mind (Eraut, 2004). This certainly has relevance to the learning of SIS coaches as the notion of a coaching 'workplace' has been largely overlooked. Similarly, given that in most instances there have been very few formal education opportunities for coaches, and also that those offered have been criticized in both content and design, considering the workplace as a legitimate site of learning creates a unique opportunity to investigate the learning of high performance sport coaches.

The State Institute of Sport (SIS) as a workplace

The main facility of the SIS is physically located in an outer suburb of the state's capital city. While there were permanent workspaces allocated for the 24 coaches employed at the time of the study, the group was fairly transient with few coaches spending significant periods of time at their desk. Given the location of the facility and the nature of coaching work, the coaches tended to only visit the site if they had meetings or to conduct sessions with their athletes in the strength and conditioning facilities and sports science testing areas. While the physicality of the SIS environment had some influence on the learning that did and did not take place, the unique work that coaches undertook meant that the conceptualization of their workplace extended well beyond the confines of a single physical facility. The workplace was considered to be anywhere the coaches did coaching work and included locations such as the SIS site, various sporting grounds, training and competition facilities, and even the homes of the coaches.

So while the workplace of SIS coaches may be considered distinct to most other workplaces, it should be considered that learning in any workplace has unique features, which in combination sets it apart from learning in other contexts. First, workplace learning is usually task focused with different tasks and settings offering different experiences and guidance opportunities (Watkins, 1991; Boud & Garrick, 1999; Billett, 2001). This is certainly true of the work of SIS coaches in that sport programs are differentially tiered, with the particular tier determining access to funding and other resources (e.g. programs are granted varying access to physiotherapy, sport scientists and the like, based on their allocated tiering with tier one programs receiving preferential allocation of time and

resources). Second, learning at work occurs in an overtly political and economic context (Watkins, 1991). This is particularly apt for the SIS where funding and resource allocation is generally determined by government officials (e.g. the State Government Minister for Sport). Third, learning in the workplace is also cognitively different to learning at school where the emphasis is very much on individual cognition, achievement and the development of widely usable skills. This is in contrast to workplaces like the SIS where collaboration, organizational success and the development of situation specific competencies are the aims (Watkins, 1991).

For some industries, the workplace is the only place in which workers are likely to develop their practice because of unique work practices or that there are no (or very limited) formal education opportunities available. Given that there are only seven institutes or academies of sport in Australia, the work requirements of the SIS may be considered to be quite unique and distinctive. The formal educational opportunities previously available to high performance coaches have also been shown to be quite limited (Cushion et al., 2003; Rynne et al., 2006).

Finally, learning in the workplace occurs in a social context characterized by status difference and the risk to one's livelihood, while maintaining a collaborative orientation (Watkins, 1991). Given that there is only one head coaching position available for each sport, some SIS coaches appeared to find it hard to reconcile their desire to improve through connecting with others to share their strengths and weaknesses, with the need to protect their privileged position.

When examining the learning of the SIS coaches, of great interest were the kinds of learning sources that the SIS made available for their coaches. Of similar significance were the sources that the SIS coaches were prepared to access, and the sources that they chose not to engage with. As such, the discussion that follows is premised on the notion that learning throughout working life is an inevitable product of everyday thinking and acting and it is shaped by the work practices in which individuals participate (Billett, 2001).

Theorizing learning

The product view of knowledge and learning has been steadily replaced with the focus on the person as a member of a socio-cultural community in which activities, tasks, functions and understandings do not exist in isolation but rather as a part of broader systems of relations (Lave & Wenger, 1991; Hager, 2005). In this way, learning can be seen as an active process by which individuals try to make sense out of information and experience with prior knowledge, including beliefs and feelings influencing this process (National Board of Employment Education and Training, 1994; Billett, 2000). This

attempt to expand our attention from the learner as an 'isolated' individual to include focus on the social settings that construct and constitute the individual as a learner was termed 'situated learning' by Lave and Wenger (1991). The 'situatedness' of learning means that learning takes place in particular sets of circumstances in time and space and may also refer to the fact that learning is social, in so far as it may involve interaction between an individual learner and others (Lave & Wenger, 1991; Billett, 2000). Frameworks associated with situated learning have been used in much sport research including physical education (e.g. Kirk & Macdonald, 1998; Renshaw, 2002) and coaching settings (e.g. Culver & Trudel, 2006; Galipeau & Trudel, 2006). The analysis involved in this study was primarily facilitated through the lens provided by the concept of relational interdependence. The main reason for choosing this concept as opposed to others (e.g. communities of practice or experiential learning theories) in examining coach learning was that there was scope to theorize the relationship between individual learning processes (related to agency) and collective processes (relating to structure). This enabled us to account for individual differences in perspective, disposition, social and cultural capital and the like (Fenwick, 2001).

As with a number of other researchers in the area of workplace and coach learning, Billett (2004) argues against the view that learning is only a formal process occurring in formally structured educational settings like schools. Instead, he proposes that learning should be viewed as a consequence of everyday thinking and acting and it is about making sense of the things we encounter throughout our lives. The distinction that is made is that rather than merely 'internalizing' knowledge from social sources, or being 'socialized', learning entails an interpretive process of knowledge construction as well as the remaking of practice (Billett, 2006). Billett (2006) argues that some accounts of learning in the workplace overly privilege structure in the form of social contributions whereas he proposes an increased consideration of the role of agency. Agency can be thought of as referring to intentionality, subjectivity and identity (Billett, 2006).

Jones et al. (2002) identified growing support for the notion that coaching is not something that is merely delivered, but that it is a dynamic, social activity in which the coach is actively engaged. They go on to endorse the need to consider the dual impact of structure and agency on the construction of role (Jones et al., 2002). Billett's concept of relational interdependence is compatible with this idea, given the key considerations of affordances and agency inherent in his theorizing (Billett, 2006). The key premise is that neither structure nor agency alone is sufficient to promote learning. It is for this reason that relational interdependence fits well with Armour and Jones' (2000) comment that coaches act both as they choose and how they are influenced to choose. In summary, the contention is that

affordances of workplaces shape the array of experiences individuals are able to access and these individuals in turn elect how they engage, construe and construct what they are afforded (Billett et al., 2005). The overall assertion is that there is an interdependence between the social and the individual world and the interaction between the two may be considered to be relational because it is person dependent (i.e. the same situation is likely to be experienced differently by different people).

Metho d

The SIS site was chosen for this examination due to its reputation as a high performance center and its willingness to engage in coaching research. Prior to the commencement of this research the SIS called for expressions of interest to conduct research in a number of areas including coach learning. The chief investigator did not have any pre-existing relationship with the participants although to facilitate recruitment and develop professional rapport he was located on-site at the SIS for several days, each week for the duration of data collection and analysis.

All SIS coaches were appointed to their positions through an interview process involving relevant SIS administrators and state and national sporting organization representatives. The coaches were generally employed on short-term contracts (i.e. 1-4 years). At the time of the study there were 22 males and 2 females employed as coaches at the SIS, with an average age of 44 years (Range =30-60). Seven of the coaches noted high school as their highest level of educational attainment, while seven reported undergraduate university studies. The rest of the coaches had achieved either community college (n=5), masters (n=1), or other post-secondary education qualifications (n=4). Half of the coaches held the highest level of accreditation/certification in their respective sports while the other half had the second highest level possible. Sixteen were coaches of programs designated as international (e.g. water polo, gymnastics, swimming, cycling), with the remaining eight coaches being involved in elite developmental programs (e.g. cricket, netball, baseball, golf). On average, the coaches had been coaching their current sport for 21.8 years (Range =4-38) and had been employed by the SIS for an average of 4.3 years (Range =0.2-11).

While the individual achievements of the coaching group were not a specific concern in this study, it should be noted that the SIS coaching group had achieved a great degree of success internationally in their respective sports as indicated by the achievement of more than 30 coaching awards and the success of their athletes. For example, the gold medal tally of SIS athletes at the most recent Commonwealth Games (2006) meant that if the

SIS was considered to be a country, it would have ranked fourth overall behind only Australia, England and Canada (and ahead of countries such as India, South Africa, Scotland and Malaysia).

Participants

During a SIS coaches meeting all 24 SIS coaches were invited by the chief investigator to participate in semi-structured interviews examining their learning as coaches prior to and during their employment at the SIS. This verbal invitation was then followed up by a personalized email within one week of the initial invitation. Six coaches were selected for inclusion based on their suitability, willingness and availability. Regarding suitability, we sought the involvement of coaches with a variety of ages, program type (i.e. international and developmental), sport type (e.g. team and individual), playing background (e.g. elite and non-elite) and nationality (i.e. domestic and foreign). The resulting purposive sample (Patton, 2002) involved four individual sport coaches (pseudonyms: Charlie, Craig, Carl and Calvin) and two team sport coaches representing direct interceptive and indirect interceptive sports (Clarke and Chris, respectively). One coach was categorized as a foreign coach while the remaining five were Australian in origin. Further, four of the coaches were in-charge of programs designated as international while two were involved in developmental programs.

A range of administrators were identified for possible inclusion in the study based on their current involvement with coaches, their impact on policy and SIS structure and also through informal discussions with coaches and administrators. All contacted parties agreed to be involved and times and locations for the interviews were subsequently negotiated. The administrators ranged in their level of responsibility and authority from manager to board member. Like the coaches, the majority of administrators were appointed through an application and interview process conducted by SIS administrators. The exception was the board members who were chosen by the incumbent government. The pseudonyms for the administrators are Ashley, Aaron, Alistair, Alan, Andrew and Aiden.

Procedure

Semi-structured interviews were used in this study because they allowed a degree of standardization and commonality between interviews while allowing the coaches and administrators to discuss issues of importance that arose outside the scope of the original line of questioning. The semi-structured interview protocols took an average of 82 minutes to conduct (Range =60–110 minutes). Interview data were transcribed verbatim and were subsequently checked for accuracy and returned to the participants for

member checking. The participants were asked to check for accuracy regarding the typography, and also accuracy with respect to the intent of their comments. It should be noted that this extension of member checking is not common within empirical sport research (Culver et al., 2003).

The process of interpretational qualitative analysis involved partitioning the relatively unstructured textual material into coded chunks of information firstly through the creation of tags which was then followed by the generation of categories (Côté et al., 1993). The stipulation was that the codes be valid (accurately reflect what is being researched), mutually exclusive (distinct with no overlap) and exhaustive (all relevant data should fit into a code; Gratton & Jones, 2004). This process necessarily relied on the analysts' subjective decision-making process but was enhanced through the use of decision-making heuristic developed by Côté and Salmela (1994). It should be noted that the categories necessarily remained flexible as they were derived from data analysis and needed adjustment as the process continued. Manual manipulation of the unstructured qualitative data was aided through the use of a qualitative data management and analysis software package (QSR Nvivo version 7). This helped facilitate the coding of the data and the construction of meaning units allowing conclusions to be drawn more efficiently.

Regarding the process of coding, a major check was the use of triangulation. Consideration was given to variations in responses between coaches and administrators as separate groups, and also between individual coaches and individual administrators. This is somewhat similar to one of the validity tactics identified by Gilbert and Trudel (2001). The most significant form of triangulation in this project was the use of triangular consensus. This has been variously referred to as peer review, peer debriefing and generally refers to discussing codes or results with knowledgeable colleagues who act as sounding boards (Culver et al., 2003). Discussions were held with both those immersed in the field of sports coaching, as well as those from the fields of physical education pedagogy, and workplace learning. Similar to the process employed by Irwin et al. (2004) each quotation and theme was independently identified by those involved in the discussions and were debated until agreement was reached.

Results and discussion

There are a number of factors that influenced the learning of the SIS coaches. These will be discussed below with specific consideration given to sources of learning that were predominantly external to the SIS, the affordances made within the SIS workplace and the agency of the coaches. In combination,

these factors may be thought of as comprising the dialectic between structure (physical and social affordances of the SIS workplace) and agency (intentionality, subjectivity and identity). The interaction of these elements will then be discussed with reference to the notion of relational interdependence.

External sources of learning

The sources of learning outside of the direct influence of the SIS that the coaches continued to engage with were generally restricted to self-directed reading and interactions with a very small number of trusted confidantes (within and outside of their sports). Reading materials can be surreptitiously accessed meaning there is no need to reveal an area of perceived weakness or vulnerability to others. Similarly, when discussing learning from other coaches within their sport, a major issue was with respect to the highly competitive nature of the elite environment: Craig said, 'there is this protective thing because they [other coaches in my sport] coach some of the athletes that are direct competitors to my athletes.' Similarly, Chris relayed a conversation he once had with one of the top coaches in his sport:

I've heard a highly regarded coach say 'I'll give you a piece of advice ... don't give 'em all your knowledge' ... he was talking about other coaches. 'You've got to keep some of it to yourself so you've got an edge.'

To be able to have discussions, which touch on the issues that are important to high performance sport coaches, there is a large amount of trust involved. Regarding this, Chris said, 'it takes a long time for people to really trust you ... and also respect you enough to want to talk through some issues.' It is the length of time taken to establish this rapport (generally over many years) that was an issue for the coaches. The overall impression gained was that these coaches were quite socially and professionally isolated.

Workplace affordances

Aaron noted, '[the SIS provides a computer and phone access so] you can get onto the web and websites and you can send emails and ask people questions'. The basic provision of this support means that coaches are potentially well positioned to access a range of people and resources that would otherwise be at a significant personal financial cost. More broadly, Chris commented '[being in this job] has put me in a situation where I could become involved and be much more active about learning'. He elaborated on this by saying that by holding a full-time coaching position at the SIS, his drive to continue to learn and develop his coaching knowledge was justifiable. He also noted that because of his position as a SIS coach, he had access to other coaches and

organizations that he would not otherwise be able or eligible to access.

The coaching experiences that SIS coaches gained since commencing work at the SIS were also noted as a source that was reportedly making a continued contribution to the learning of the coaches. Charlie emphasized this by saying, 'you learn to be a coach by coaching'. Providing further empirical support is the large amount of coaching literature highlighting the contribution of previous experience to coaching expertise (e.g. Abraham et al., 2006; Côté, 2006; Gilbert et al., 2006; Nelson & Cushion, 2006; Telles-Langdon & Spooner, 2006; Trudel & Gilbert, 2006; Way & O'Leary, 2006; Werthner & Trudel, 2006). The ability to make expedited or at least more educated decisions was something that was identified by the SIS coaches as a contribution previous coaching experiences made to current coaching work. Clarke said, 'what I can see in a player now is, if they are having issues in their life that are going to affect down the track I can pick up on that a lot earlier and confront them'. The advantage of learning from previous coaching experiences was thought to be that it was highly specific to their practice but as Eraut (2004) cautioned, there is a need to consider what counts as experience. While the specifics of human cognition involved in learning is beyond the immediate scope of this paper, suffice it to say that the mere accumulation of experience is not sufficient to facilitate meaningful learning (Eraut, 2004; Lynch & Mallett, 2006).

Coaches reported learning from their engagement with novel work situations often using the phrase 'thrown in the deep end' to describe their exposure to tasks and responsibilities that were largely unfamiliar to them. For example, Calvin said, 'that's how you get better, by being thrown in the deep end and struggling a bit'. This quote gives the impression that coaches are being asked to perform work that they are not well prepared to undertake, hence creating the need to swim or else sink. Related to this is the notion of trial and error, and while trial and error is a recognized learning strategy, it may not be the most efficient in a variety of situations. This is in keeping with the results of Irwin et al. (2004) who found that while learning in this way was a major source for coaches, it was not necessarily by choice.

Other members of staff including other SIS coaches and a range of support staff such as sport scientists, psychologists and strength and conditioners could also be considered to be a source of learning. While these other members of staff were a potentially generative source, coaches did not tend to access them with much regularity. For some coaches, it was simply not possible to engage with certain individuals because access was not granted by the SIS (e.g. programs designated as 'developmental' had limited access to sports science and strength and conditioning support staff). In this way, the SIS affordance was limited. There were also a number of agency-dependant reasons for this that will be discussed in greater detail later in this paper. Finally, other SIS staff members generally

did not have a great deal of scope in their job to interact beyond a basic service provision function.

To summarise, the affordances of the SIS included the potential for interaction with human partners and non-human artifacts (e.g. templates and previous report formats). While the relative contributions of these affordances were somewhat idiosyncratic, the impact on learning could be considered to be fairly limited. It was the provision of full-time employment and the associated learning that occurred through engaging in daily coaching experiences that was reportedly the greatest factor with respect to coach development. It is interesting to note that the ability to learn from coaching experience while employed in the SIS did not rely on organizational affordances beyond the provision of basic working conditions (e.g. contract for full-time employment, phone and internet access). Outside of this, the SIS workplace affordances might be considered to be at best somewhat limited and at worst potentially constraining, regarding coach learning.

Workplaces, by their nature, are not benign entities. They have explicit and implicit goals and practices that direct and guide what is learnt and what is valued. Rather than being without intent, the SIS workplace activities and interactions were highly structured and regulated. Within the SIS, factors such as the prioritization of programs and the tiering of service provision allocations serve to regulate participation in a range of potentially generative situations including interactions with other members of staff (previously identified as a primary source of coach learning). Those invited to participate fully in work practices are afforded richer learning than those who are not (Billett, 2001). The isolated and competitive nature of the SIS coaches' work compounds this potential problem further (i.e. the structure, including the prevailing social environment of high performance coaching, may serve to further inhibit learning).

Agency

It must be acknowledged that situational factors alone are insufficient to understand workplaces as learning environments. While it might be considered that the SIS has a responsibility to make affordances that have strong invitational qualities, the SIS coaches clearly exercised their agency when deciding which activities to engage in and the degree of their engagement. In addition to exercising it in a variety of ways, the SIS coaches cited a range of factors that served to influence and direct their agency.

Across a range of learning opportunities, the SIS coaches and administrators cited various positive influences that led to coach engagement. It should be noted that these ranged from being largely external to being predominantly internal to the individual. The most significant external reason

to continue to learn that the SIS coaches cited was the athletes, as indicated by Craig's comment, 'the athletes [drive my efforts to learn]. Yeah their development . . . seeing them get better'. It might be argued that improving athlete performance is also somewhat internal to the coach given how athlete success reflects on their coaching abilities. It did, however, appear as though the coaches gained much joy and personal satisfaction from seeing the athletes in their charge improve.

One of the more personal reasons coaches gave for wanting to improve their practice was because they had a passion or great personal interest in their sport. When asked about why he wants to continue to improve his coaching, Craig said, 'I do it for passion, I don't do it for money or anything. I do it because I want to'. It was clear that the SIS coaches had an extremely high commitment to the work that they performed. Their personal identities appeared to be very closely tied to their coaching work and as such it might be argued that the subjectivities and identities of these individuals may be even more important to the learning that occurs than in other domains of work where working and personal identities may be more divergent. In addition to having a specific personal interest or passion in their chosen sport, there was some suggestion that the SIS coaches were driven to be the best. Craig said, 'I am always going to learn from whoever because I want to be the best'. Clarke was equally as ardent saying, 'I want to be the best in my sport'. Again, this suggests that for many coaches, their identity is closely tied with being successful (and for some this meant being the best).

The coaches and administrators spoke equally as strongly about a range of factors that caused reduced engagement. While the coaches generally acknowledged a need to continue to learn, when asked why they chose not to engage with certain learning opportunities their response often revolved around there not being enough time to do so. For example, Calvin said, 'we are so busy going about our day-to-day business that we don't really look outside what we are doing'. However, administrator Andrew said, 'if something is really good they [coaches] will make time to access it because they can see that's a way of fulfilling their primary purpose'. It is this final point by Andrew that counters some of the claims by coaches and administrators that the SIS coaches may not have enough time to engage in meaningful learning. While it is acknowledged that these coaches are 'time poor' it is the prioritization of other activities ahead of specific learning activities that is the issue. Some particularly strong comments regarding why certain learning opportunities were not prioritized came from the coaches: Chris said, 'I do what I am rewarded for' with the implication being that learning was not particularly well recognized or rewarded by the SIS. In this way, the organization's strong emphasis on performance outcomes had the potential to reduce the prioritization of learning activities. The problem appeared to be the emphasis on relatively

short-term and immediate outcomes for these coaches. Because of this, coaches may have been focused on the day-to-day optimization of their work rather than taking a more strategic and longer-term developmental view. In short, the need for short-term results potentially inhibited learning beyond the immediate experience.

The other major factor that reportedly led to reduced engagement in significant learning within the organization was the potentially threatening nature of revealing areas of weakness to other members of staff. Aiden said, 'coaches have egos, and I think some of the better coaches have bigger egos... [a possible barrier to learning is] being seen to be a bit inexperienced in something and being a bit afraid to ask'. Aaron noted that an admission by a coach that they do not know something can be personally threatening. He gave an example from the perspective of a coach who is unable to complete the budget:

Why am I going to go around and talk to someone in finance to tell them that I am an absolute dill?... I'm not going to say that because then that word gets back to [the boss] who says 'oh you are a dill. We don't want you'. (Aaron)

Given the problems associated with accessing knowledgeable others within other state, national or international sporting organizations, and the potential threat of accessing those within the SIS, the sources that SIS coaches were prepared to access were significantly narrowed.

For the SIS coaches, potential barriers to learning that their agency must overcome extended far beyond overcoming apathy or accessing 'difficult to find' opportunities. The fundamentally competitive nature of elite sport performance and high performance coaching meant that sources that were highly valued by coaches (e.g. learning from other coaches) were also extremely difficult to access. As mentioned in the previous discussion of external sources of learning, interactions were typically guarded and the kinds of generative relationships that coaches require at the high performance level took extremely long periods of time to establish. While this issue may appear to be primarily associated with the affordance (the particular source), in actuality it is an agency issue for the SIS coaches given that the nature of the affordance is unlikely to change (i.e. the guarded and highly competitive nature of high performance sport is unlikely to change in the near future). For this reason, it is up to the particular coach regarding how persistent, open and agentic they will be in fostering these interactions. This recurring theme of occupational isolation resonates well with the plight of the small business operators described in the work of Billett et al. (2003). But while competitive aspects are present in a range of vocations and professions, it is the unequivocally competitive nature and regular comparisons of achievement present in coaching work that render the sport coaching workplace unique. It is for this reason that coaches may

experience professional isolation in quite different ways to those in the business world. Regardless, it is likely that in situations such as these, individuals will have to be highly agentic in their actions and thinking if they are to continue to develop.

While the contribution of agency to learning was evident throughout the careers of the SIS coaches, the actions it directed and the conviction with which the coaches pursued opportunities appeared to fluctuate depending on their career and coaching circumstances. As a general rule, the more secure and comfortable the coaches felt in their coaching and employment status, the stronger their agency appeared to be. Clarke appeared to be confident and secure in his coaching and as such he was prepared to pursue his own learning opportunities: 'I've initiated the whole collection of items [texts and other library resources] on my sport here because there was nothing when I came'. He also said 'I've secured my own mentors and speak to them regularly and some of them within this organization'.

Given that we have previously established that the individual's perceptions of the workplace affordances are critical to learning, it is perhaps unsurprising that coaches appeared most reluctant to engage during periods of threat or insecurity. This threatening nature of revealing one's perceived weaknesses was noted by the previous comment by Aaron about a coach not wanting to 'look like a dill', and by Aiden regarding coaches often having big egos. This might be viewed as highly problematic given that coaches may require the greatest learning assistance when in positions where they feel threatened or insecure.

Perhaps agency may be characterized as having different forms and intensity during a person's life. It may be however, that agency remains relatively constant (while in a constant state of transformation) but the ways in which it is enacted are influenced by the particular social context and circumstance. Regardless, it is clear that along with the organizational affordances, the agency of the SIS coaches was a critical factor in relation to the learning that did and did not occur.

Relational interdependence between affordances and agency

Billett (2006) noted that there is a range of perspectives given regarding the influence of agency and structure ranging from accounts where agency is seen as illusory, to perspectives that grant individual autonomy and to perspectives that acknowledge interaction between the two. Billett (2006) himself advocates a consideration of the interdependence between the individual and the social when describing learning through engagement in work practices. The key premise of his work is supported by the findings of this research given the previously described influence of both the affordances of the SIS and the agency of the coaches.

As seen in the section immediately preceding this, the agency of the individual was critical to the learning that did and did not occur. It may be suggested that in situations where organizational affordances are weak, poor or constraining, the individual (in this case the coaches) will have to become highly agentic if meaningful learning is to occur. But regardless of the situation, agency does not act in isolation. Indeed, the invitational qualities of the SIS workplace affordances influenced the involvement of the coaches and these qualities and affordances included the physicality of the worksite(s), the types of activities individuals engaged in (i.e. the work tasks that were valued); the direct and indirect guidance accessible (e.g. tiering of access to sport scientists); the duration of participation (i.e. related to contract length); and how the activities related to individuals' existing knowledge base (also incorporating their interest). In short, SIS affordances were made in ways that served to alter (positively or negatively) the agency and subsequent engagement of the individual coach.

What was not immediately obvious from the SIS data was how the individual's agency served to alter the affordances made. However, on further examination it did appear that for coaches who had actively pursued a range of developmental activities (e.g. Clarke), that additional opportunities (e.g. the opportunity to spend an extended period of time with mentor coaches in the national program) had presented themselves and administrators appeared to be more forthcoming with support. It was also somewhat evident that once certain opportunities were successfully provided for a particular coach, that other coaches generally enjoyed increased accessibility to that opportunity (or type of opportunity). A stronger and more obvious indication of how agency served to alter the affordances offered was with respect to reduced coach engagement. When coaches failed to engage with certain affordances, these affordances were not promoted or were often times removed: 'Early on there were quite good little things [e.g. courses and seminars] that used to crop up that you could go to that don't seem to happen quite as much now' (Charlie).

In these examples, the agency and affordances were interacting in interdependent ways with respect to coach learning. This situation might almost be characterized as being somewhat cyclical in that organizational affordances influenced agency and agency influenced affordances (in both positive and negative ways). In short, the agency-structure dialectic appears to be interdependent.

Conclusion

The SIS coaches expressed a desire to continue to improve and this was reportedly fueled by personal factors including a love of the sport they coached

and wanting to be the best, as well as external factors such as wanting to assist their athletes to be successful. While there were a range of affordances made by the SIS, it was evident that coach agency influenced how coaches construed what the workplace afforded and how worthy it was of their participation. Regarding coach engagement, the sources of learning specific to the SIS were generic offerings (e.g. full-time employment, internet access), other members of staff (e.g. sport scientists, other SIS coaches), and most notably, learning on the job (e.g. performing coaching tasks). While these affordances were identifiable, they were certainly not without problems. There were barriers (and enablers) that were organizational (e.g. tiering of programs) and personal (e.g. ego-threatening, drive to improve) in nature.

The SIS provides a unique workplace for the 24 employed coaches. The policies and practices of the SIS administration have an influence over what is provided to coaches and also how attractive it is to engage with those provisions. The previously discussed example describing the reduced prioritization of learning activities by SIS coaches due to the organization's focus on relatively short-term performance outcomes serves to characterize this influence. As a result, organizations such as the SIS should be urged to recognize the workplace as a legitimate site of coach learning and review the policies and working conditions accordingly. This would allow the SIS to move toward a situation where learning is promoted as an everyday function of thinking and acting in the workplace. Underpinning this movement would be the establishment of more regular, deliberate and systematic approaches to the provision and monitoring of SIS affordances. In particular, there is a need to consider the invitational qualities of the variety of learning experiences present in the workplace and take steps to continually improve these affordances.

With respect to the unique workplace of SIS coaches, the notion of relational interdependence was useful for understanding the agency-structure dialectic. The reason for this is the strong theoretical consideration of the contexts and interactions afforded in work settings while directing attention to the agency of the individual. The data from the SIS coaches and administrators lend support for Billett's notion that the organizational affordances and agency significantly impact on the learning that is possible for workers.

More than discrete physical and social environments, workplaces can be viewed as something negotiated and constructed through the interdependent processes of affordance and engagement. As a result, workplaces such as the SIS may be best understood in terms that include the physical, social and educational provisions of the organization and the participants' interests, identities and subjectivities. These aspects have been discussed throughout this paper and it is evident that the affordances and the agency are interdependent with respect to coach learning.

The largely exploratory nature of this research and the use of a case study design meant that these findings cannot be generalized. There is opportunity for researchers in other contexts to continue to consider the environments in which full-time high performance coaches operate as sites of workplace learning. Similarly, it may be worthwhile to examine other high performance coaching environments including other government-funded institutions (e.g. State and Federal), as well as private sporting organizations (e.g. professional sporting associations) using relational interdependence as a theoretical lens. This would allow comparison between different sporting sites as well as providing further opportunities to examine the utility of the concept of relational interdependence.

There was some indication in this project that aspects of agency fluctuated over the course of the coaches' careers and that organizational affordances also varied over the life of the organization. However, the underlying mechanisms and reasons for the relational interaction and the fluctuations in agency and affordances remained somewhat less obvious. Future research that is longitudinal in nature would allow a better characterization of these variations and the interdependent nature of their interaction between coach agency and organizational affordances. Similarly, it would be possible to further examine the structure-agency dialectic with respect to the perceived intellectual, physical and social isolation described by the coaches.

The results from each of the aforementioned future research directions would add to the burgeoning body of research investigating how coaches learn to perform their difficult and demanding work. Future research in these areas would also help direct the organizations that rely on the services of coaches regarding how to facilitate the learning of this important group.

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