Gaining Insight into Actual and Preferred Sources of Coaching Knowledge

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ABSTRACT
Previous research has suggested that current formal coach education programs do not fully meet the learning needs of coaches. The purpose of the present study was to examine actual and preferred sources of coaching knowledge for developmental-level coaches. Structured quantitative interviews were conducted with coaches (N = 44) from a variety of sports. Learning by doing, interaction with coaching peers, and formal coach education were the top actual sources of coaching knowledge. Discrepancies were found between actual and preferred usage of learning by doing, formal coach education, and mentoring. Coaches indicated they would prefer more guided learning and less self-directed learning by doing. Further, differences in preferred sources were identified between coaches wishing to move to an elite level versus coaches wishing to stay at a developmental level. Findings highlight the importance of both experiential and formally guided sources of coaching knowledge and the context-specific nature of coach learning.

Key words: Coach Education, Developmental-Level Coaches, Experiential Knowledge, Guided Learning

INTRODUCTION

Previous research has suggested that current formal coach education programs do not fully meet the learning needs of coaches [1] and that coaches play a significant role in the development, training, and success of athletes in sports [2]. As such, the development of coaches and coaching knowledge has received increased research attention in recent years. While the body of literature steadily increases, research remains predominantly focused on descriptions of currently available coach learning contexts [e.g., 3, 4]. There is minimal research that constructively evaluates and describes the sources of knowledge from which coaches would prefer to learn; sources they perceive to be optimal or ideal. Therefore, it is the intention of this study to take a unique stance and address this important gap in the coaching literature by examining sources of learning that have been used in the current coach development system in Canada in relation to sources of learning that would be preferred by coaches.

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FORMAL COACH EDUCATION

Coach education programs have grown exponentially in recent years. To improve the quality and exposure of coaching at all levels around the world, the International Council for Coach Education (ICCE: www.icce.ws) was formed. Participating nations of the ICCE typically have their own national governing body for coach education and certification. In Canada, the coaching education system is governed by the Coaching Association of Canada (CAC). The mission statement of this association is to promote quality coaching for the benefit of all Canadian athletes [5]. To achieve this goal, the CAC runs a course-based program to train and certify coaches – the National Coaching Certification Program (NCCP).

Since its inception in 1974, the NCCP has worked with over one million coaches across Canada, offering education for sixty-five different sports in both French and English [5]. Considering the magnitude of the formal coach education programs like the NCCP in a number of countries around the world (e.g., Australia, UK), and the great potential for coach learning, evaluation is essential to ensure the effectiveness of coach development systems. A recent evaluation of the NCCP indicated that changes were necessary to better meet the needs of Canadian coaches and athletes [6].

Prior to this evaluation, coaches enrolled in the NCCP acquired core competency knowledge through classroom-based curriculum. In response to the evaluation, the NCCP moved toward a competency-based program, differentiated by coaching context. This shift is supported by other research targeting the program. In one such study, Gilbert and Trudel [7] enrolled a novice coach in an NCCP course to evaluate the protocol. The findings from their study revealed that no new knowledge was learned, nor did the coach apply much of the information from the class once he returned to the field. A further criticism of the NCCP was the lack of consistency in method delivery and material taught between classes and instructors [7].

Similar critiques have been directed at other coaching education programs, often highlighting the ineffectiveness of such formal settings for coach learning [e.g., 8, 9]. Complaints of formal coach education courses include a lack of interaction between coaches [10] and an inability to transcribe the complexity of coaching into a brief course of coaching science [11]. In fact, some previous work has suggested that such formal coach education courses are of little importance in the development of coaching knowledge and expertise [4, 12-15].

However, despite the scrutiny of formal coach education programs, they may still play an important role in coaches' development [4]. Several studies have noted a number of benefits from this type of learning including: (a) increased perceived coaching efficacy [16], (b) better facilitation of social development and growth of athletes [17], and (c) decreased rate of coach burnout by teaching stress management and coping strategies [18].

ADDITIONAL SOURCES OF COACHING KNOWLEDGE

While acknowledging the benefits of formal learning settings, many less formal sources by which coaches learn have been identified. Learning through experience is often highlighted as a key component of coach development [19-21]. The process of reflection *in* and *on* experience has been identified as central to experience-based learning theories [1] and has been translated to the coaching literature [22, 23] as a mechanism through which these experiences produce learning.

Several other salient sources of coaching knowledge have emerged in the coaching literature. Mentoring is often cited as being one of the most important ways of facilitating coaches' development [12, 24, 25]. While recognizing the pitfalls of simple mimicry, an

effective mentor can help a coach develop his or her own coaching style and philosophy. Observing other coaches has also been suggested as a primary source of coaching knowledge [19]. Often referred to as an informal apprenticeship of observation [26], this observation of experienced others can occur as an athlete or as a coach. Finally, as a middle ground between the extreme individual focus of mentoring and the self-direction of observation, interacting with other coaches within communities of practice [27-29] has been proposed as a particularly fruitful approach to fostering coach learning. Through this sustained interaction, coaches can collectively negotiate meaning in order to learn from one another.

CLASSIFICATION OF SOURCES OF COACHING KNOWLEDGE

There have been several theoretical initiatives that focus on how the identified sources of knowledge afford learning opportunities for developing coaches. According to Werthner and Trudel's [30] view of coach learning situations, a coach's cognitive structure will change under the influence of three complementary types of learning situations: mediated, unmediated, and internal. In mediated learning situations, the learner is directed to salient information by a more experienced other (e.g., mentor). Unmediated situations involve the learner deciding what is important or useful and choosing what to learn under their own initiative (e.g., observing other coaches). Finally, internal learning situations involve no presentation of new information but a "reconsideration of existing ideas", as in reflection [30, p. 201].

In a similar vein, Nelson et al. [15] highlight the classification of coach learning as formal, nonformal, or informal. Situations promoting formal coach learning are typically designed around a relatively standardized core curriculum and candidates must demonstrate facility with the supplied requisite knowledge in order to achieve certification (e.g., formal coach education programs). Nonformal learning situations, such as coaching conferences and clinics, are comprised of organized educational activities outside the formal system designed to "provide select types of learning to particular subgroups" (e.g., high performance coaches) [15, p. 252] and not necessarily leading to certification. Informal coach learning situations are self-directed and based on personal experience and activity within the sport environment (e.g., learning from previous coaching experience).

The identified sources of coaching knowledge (e.g., classroom learning, mentoring, etc.) and the situations in which they occur (e.g., mediated, unmediated, and internal; or formal, nonformal, and informal) may be further classified according to Trudel and Gilbert's [1] application of Sfard's [31] metaphors of learning. Providing a useful framework for contrasting the nature of different sources of knowledge, these authors proposed that coach learning occurs via two different mechanisms: acquisition and participation. According to this view, coach learning from a specific source of knowledge within a specific learning situation is enacted through dominant use of one mechanism or the other. In the acquisition metaphor, learning occurs through the basic transfer of information from a teacher to a student. This has been the typical mode of learning promoted within current formal coach education programs [1]. In the participation metaphor, learning occurs through active engagement in the coaching context. This active engagement might be encouraged in both individual experiential learning and more social means, such as mentoring or communities of practice [1].

PURPOSE

While we know that coaches can learn from a variety of sources [3] and can theorize as to how these sources lead to knowledge gain, there has been minimal collective research

devoted to understanding how coaches could most effectively ascertain this knowledge. While we recognize the individualized nature of coach development [4] with respect to the effectiveness of different sources of knowledge across individuals, large-scale coach development systems must meet the needs of a broad spectrum of coaches from many different sports. We do not yet fully understand the comparative learning potential of individual sources and the manner in which coaches would generally prefer to learn. Therefore, the purpose of the present study was to identify the sources of knowledge used during coaches' development and how this compares to the methods (or combinations of methods) of learning that coaches perceived to be optimal. Further, a number of researchers have recently proposed that there are fundamental differences between coaching contexts related to competitive level and desired outcomes, often expressed as recreational, developmental, or elite level coaching [1, 25, 32]. As all participating coaches were currently coaching athletes at a developmental level (as opposed to elite), a secondary purpose was to examine differences in preferred sources of coaching knowledge for coaches who wished to keep coaching at the developmental level compared to those who wished to move up and coach at an elite performance level.

METHODS

PARTICIPANTS

Participants were 44 Canadian coaches (25 males, 19 females) between the ages of 19-69 years (M = 40.5, SD = 13.1) across a variety of team and individual sports who have achieved level two or level three NCCP certification. Coaching experience of participants ranged from 2-43 years (M = 16.1, SD = 11.4). Educationally, all coaches had at least a high-school degree, 39 (88.6%) had an undergraduate degree, 14 (31.8%) had a Master's degree, and two (4.5%) had a PhD. With regard to future coaching intentions, 23 (52.3%) coaches wished to stay at the developmental level while 21 (47.7%) wished to move up to coach elite level athletes. Coaches were recruited from various Canadian provinces through mass e-mail via the CAC's national coach directory.

MATERIALS

The interview procedure included three sections: (i) demographic information, (ii) actual sources of coaching knowledge, and (iii) preferred sources of coaching knowledge. The demographic information consisted of gender, age, occupation, education level, level of NCCP coach accreditation, years of coaching experience, and whether or not the participant was interested in coaching at a higher competitive level in the future than the level at which he/she was currently coaching. Education level was categorically classified as: (i) high school, (ii) junior college, (iii) college/university – undergraduate, (iv) college/university – Honors/Master's, (v) college/university – Doctoral, and (vi) other. Level of coach accreditation through NCCP was documented along with the year in which each level was achieved. Years of coaching experience in their current sport was recorded numerically. Finally, the question about staying at their current level or moving up to a higher competitive level was assessed through a yes/no response.

The actual (part two) and preferred (part three) sources of coaching knowledge were collected in an identical manner. Both contained three separate charts pertaining to a different component within coaching (competition, organization, and training) [33]. For each of the three components, coaches were asked to identify which of the following seven sources of knowledge they had actually used during their development (part 2) and would see as ideal sources of knowledge (part 3): (i) learn by doing, (ii) printed/electronic materials, (iii) NCCP,

(iv) non-NCCP courses/school, (v) observing other coaches, (vi) interaction with coaching peers, and (vii) mentors. These seven potential sources of knowledge were selected for examination based on identification in previous literature as a significant source of coaching knowledge [1, 15] and as representative of the full spectrum of potential coach learning situations (mediated, unmediated, internal [30]; formal, nonformal, informal [15]). Prior to data collection, each participant was read a scripted definition of each source of knowledge. Any questions regarding the meaning of any definition were addressed. Both strategies were implemented in an effort to ensure consistent interpretation of each source of coaching knowledge across participants. Coaches were also given the option of identifying any additional sources from which they gained or would prefer to gain coaching knowledge. The first chart referred to *Competition* in which coaches were asked about (i) pre-competition, and (ii) in-competition. The second chart inquired about *Organization* of coaching and listed three tasks: (i) year plan, (ii) dealing with parents, and (iii) athlete's personal concerns. Finally, the third chart referred to *Training* and contained five tasks: (i) intervention style, (ii) technical/tactical skills training, (iii) psychological skills training, (iv) moral/social skills training, and (v) physical conditioning. All of the seven potential sources of knowledge remained the same across all three charts.

PROCEDURE

Two interviews were conducted with each participant. Forty two participants were interviewed by telephone while the remaining two participants were interviewed in person using an identical protocol. Results indicated no differences between participant data collected by phone versus in person. The first interview consisted of obtaining verbal consent from the participant, collecting the participant's demographic information, and filling out the three charts pertaining to actual sources of coaching knowledge. The charts were filled out by asking two separate questions. The first consisted of going through each of the seven sources of knowledge for each task and determining whether or not the participant used the source as an actual source of knowledge in their development as a coach. The responses for this question were recorded by indicating "yes" or "no" for each source. Of the sources used by the coach, he/she was then asked to identify his/her top three sources of knowledge for that task. These three sources were then recorded. The second interview was conducted three to five days later. This interview was identical to the first, except questions were altered to reflect: (i) what sources the coach would have preferred in order to gain coaching knowledge, and (ii) what they would consider to be the top three ideal ways of gaining coaching knowledge. The first interview took approximately 1 hour, while the second took approximately 30-45 minutes.

DATA ANALYSIS

Because of the exploratory nature of this study, descriptive statistics were used to examine trends within and between sources of knowledge. The number of times each source was rated as one of the top three most important sources (i.e., rated as first, second or third) by coaches in the sample was used to compile frequency counts. These frequency counts were then converted to the percentage of coaches citing each source as one of the most important. No additional sources beyond the initially presented seven were rated as a top three most important source by more than one coach per source and are therefore not included in presented results. As a preliminary note, no differences were found between coaching components or tasks (e.g., competition, organization, training), so all presented data were collapsed across components and tasks.

RESULTS

The first set of data collected investigated the actual sources of knowledge used by the coaches during their development. Figure 1 summarizes the results pertaining to sources identified as one of the three most important to the actual development of coaches' current coaching knowledge.

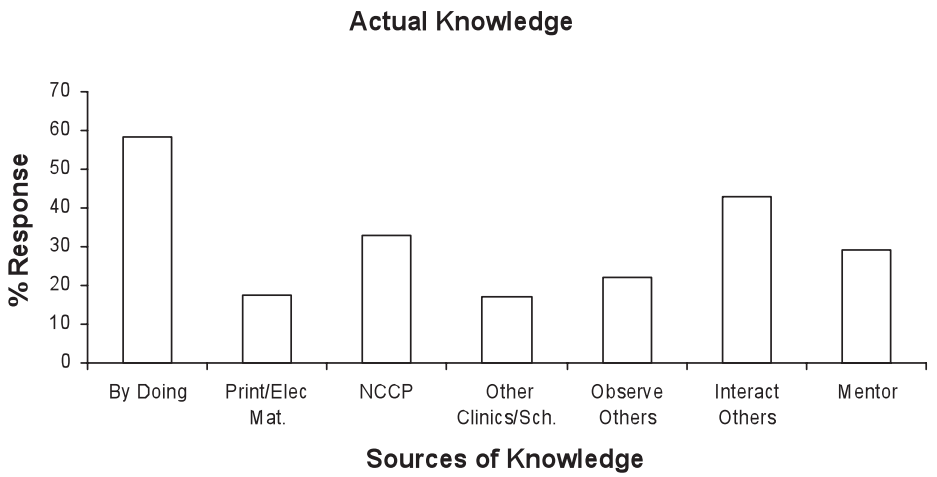

Figure 1. Coaches' Identification of Most Important (i.e., Listed as Top Three) Actual Sources of Knowledge

The actual source of coaching knowledge mentioned most often was learning by doing, which was identified by 58.4% of coaches. The second and third most important sources of knowledge were interaction with other coaches/peers and NCCP training, with 42.7% and 32.7% respectively. The remaining four actual sources of knowledge for coaches were also mentioned with values between 17.3% and 29.3%.

The second question aimed to determine if individuals' actual sources of coaching knowledge were similar to their preferred sources of coaching knowledge. Figure 2 illustrates coaches' identification of the three most important sources for actual versus preferred coaching knowledge.

Printed/electronic materials, non-NCCP clinics, observation of other coaches, and interactions with coaching peers were reported with similar frequency in terms of how coaches actually learned and how they would prefer to gain coaching knowledge. However, the remaining three sources showed discrepancies. First, coaches often reported learning by doing as an actual source of coaching knowledge (58.4%), but identified this source much less frequently as a preferred knowledge source (37.3%). Approximately one-third (32.7%) of coaches reported NCCP as a top actual source of knowledge. When asked about ideal sources of information, more than half (51%) mentioned that the NCCP should be a top source of knowledge in their development. Finally, while 29.3% of coaches reported mentors as an actual source of knowledge, almost half the coaches (48.5%) identified mentors as an ideal source of knowledge.

We also investigated ideal sources of knowledge for coaches who were interested in moving on to higher levels of competition (move up) versus coaches who wanted to continue at their current (same) developmental level (Figure 3).

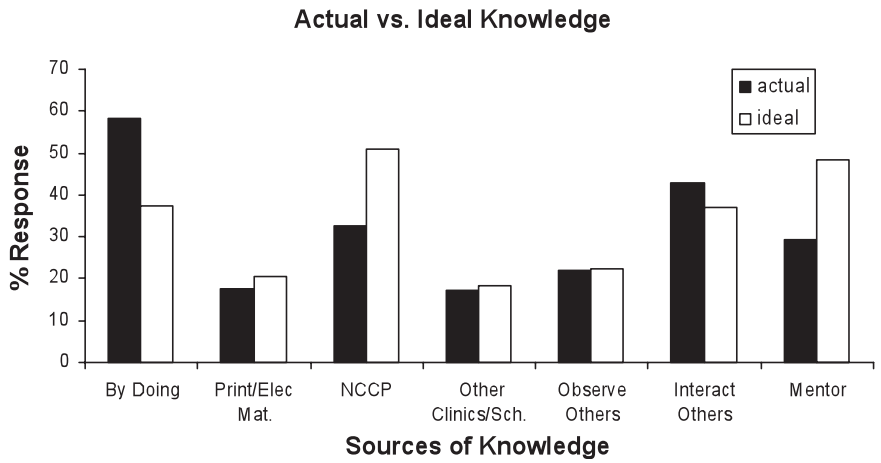

Figure 2. Coaches' Identification of the Most Important (i.e., Listed as Top Three) Actual and Ideal Sources of Knowledge

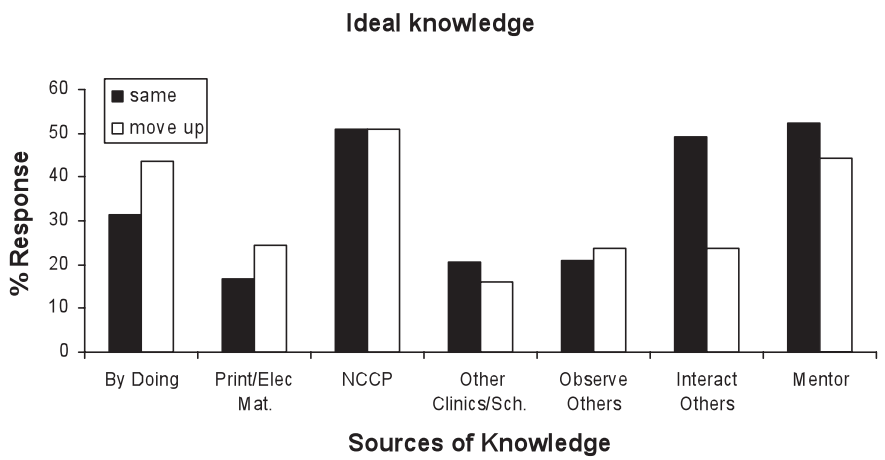

Figure 3. Most Important (i.e., Listed as Top Three) Ideal Sources of Knowledge Identified by Coaches Wishing to Move to a Higher Competitive Level Versus Stay at the Developmental Level

Both types of coaches rated printed/electronic materials, NCCP courses, non-NCCP clinics, observation of other coaches, and mentors similarly in terms of preferred sources of coaching knowledge. It was observed that coaches who aimed to coach at a higher competitive level wanted to learn by doing more than coaches who wanted to stay at the developmental level (43.7% vs. 31.4% respectively). However, coaches who wanted to move up in level considered interactions with other coaches/peers as a less important source of knowledge than coaches who wanted to stay at the developmental level (49.1% vs. 23.7% respectively).

DISCUSSION

ACTUAL SOURCES OF COACHING KNOWLEDGE

Given the pervasiveness of formal coach education within the coaching systems of many countries around the world, it is of interest to compare the top three actual sources of coaching knowledge reported by coaches in our sample with the structure of current formal coach education. While the NCCP was the third most frequently reported source of coaching knowledge, the top two most frequently reported sources of coaching knowledge, learning by doing and interacting with coaching peers, are not explicitly part of the current formal coach education process in Canada.

The finding that coaches in our sample most frequently reported learning by doing as a primary source of coaching knowledge is consistent with previous coaching literature [1, 20, 21]. While the nature of these learning situations was not explicitly examined in the current study, previous literature suggests that a mechanism of knowledge gain through participating in coaching (learning by doing) may in fact be reflection *in* and *on* these experiences [22]. By consciously monitoring what behaviours, decisions, or strategies are successful or unsuccessful and why, coaches may discern components of personally effective coaching practices.

The frequent mention of interaction with coaching peers as a primary source of coaching knowledge supports the notion of communities of practice as important contexts for learning and knowledge sharing [27- 29]. This finding appears to contrast with the results of Lemyre et al.'s' [21] study of youth sport coaches which revealed that when coaching at a competitive youth level, coaches were unlikely to share information with coaches of other teams. However, it is not clear whether coaches in the present study were interacting with opposition coaches or non-rival others (e.g., assistant coaches, coaches from other sports).

While these two sources of coaching knowledge may initially appear quite distinct, we propose a common link. As noted by Trudel and Gilbert [1], both sources are located within Sfard's [31] participation metaphor of learning. One might consider both learning by doing and interacting with coaching peers as variations of experiential learning; learning from one's own experiences and then sharing those experiences and learning from the experiences of others. Based on the actual reported sources of coaching knowledge, it appears that coaches in the current sample gained a large portion of their knowledge through this experiential learning.

Inconsistent with previous findings on coach development [4, 13, 14] is the frequency with which the NCCP, a formal coach education setting, was reported as a primary source of coaching knowledge. However, this inconsistency may be due to the characteristics of the coaches sampled. Many previous studies of coach development have focused on elite level, often international, coaches whose focus is necessarily on the current performance of their athletes [e.g. 14, 33]. The inclusion criteria for the present sample of NCCP certification level two or three means that most of these coaches are coaching at the developmental level. Perhaps the current content of formal coach education courses is more applicable to the developmental context, working with non- or pre-elite athletes where the primary focus is more on skill development rather than elite performance [1, 25, 32].

ACTUAL VERSUS PREFERRED SOURCES OF COACHING KNOWLEDGE

A unique contribution of the current study is the comparison between the actual and preferred sources of coaching knowledge reported by coaches. There were a number of similarities, indicating that coaches felt that what they actually received or had access to was appropriate and sufficient, given the perceived importance of that source of coaching knowledge. Print or electronic materials, non-NCCP clinics and school, and observing other coaches were all

mentioned correspondingly infrequently both as actual and preferred sources of knowledge. In particular, the lack of importance placed on observing other coaches is in direct contrast with results reported by Sage [26], who concluded that observing more experienced coaches plays a primary role in the development and socialization of high school coaches, a finding supported by Cushion et al. [19] for coaches in general. Interaction with coaching peers, on the other hand, was frequently reported as an actual source and a preferred source, indicating that coaches felt that it was a valuable source of coaching knowledge and that they had adequate opportunity for these interactions during their development. Perhaps the willingness of coaches to interact with one another noted in this sample at least partially negates the necessity of learning through observation. Perhaps there is no need to stop at observation of another coach if it is considered acceptable to approach that coach and discuss what was observed. This possibility supports the importance of examining the social norms of particular coaching cultures in relation to learning processes.

Of particular interest are the discrepancies between actual and preferred sources of coaching knowledge. Such discrepancies highlight areas where the current coach education system could be improved to better meet the needs of developing coaches. Coaches in the current sample rated learning by doing as a preferred source of coaching knowledge much less frequently than as an actual source. Further, coaches rated the NCCP and mentoring opportunities much more frequently as a preferred source of knowledge than as an actual source. Taken together, these discrepancies suggest that coaches feel they are having to learn too much by trial and error and would in fact prefer more guided learning opportunities, what Werthner and Trudel [30] termed mediated learning situations. Why waste time starting from 'scratch', potentially making numerous errors before getting it right, when one could learn from experienced others? While the importance of mentoring in the development of coaches has been noted [24], coaches' desire for increased learning from formal coach education settings, as described earlier, is not consistent with the relative lack of importance ascribed to such settings by researchers in previous literature. Often thought to contribute minimally to the development of coaching knowledge [12, 15, 19], coaches in the current sample felt that the formal coach education was an appropriate and useful learning context and would prefer to gain a larger proportion of their knowledge in this type of setting. What is less clear is the nature of the discrepancy; is there simply not enough time spent in these formal courses or is there something different that coaches felt could be done within the courses to more effectively promote learning? Previous research has suggested that formal coach education is often not relevant to the actual process of coaching [19], given the inherent mismatch between the prescriptive nature of most formal coach education programs and the fluid, interactive nature of coaching in practice [35]. In spite of these concerns, coaches in our sample valued the learning potential of formal coach education settings. As such, measures to increase the relevancy and impact of these settings by taking advantage of coaches' previously acquired knowledge and incorporating more experiential perspectives to work cooperatively with coaches to generate knowledge should be explored [19].

PREFERRED SOURCES OF COACHING KNOWLEDGE FOR DIFFERENT COACHING CAREER TRAJECTORIES

In comparing the preferred sources of coaching knowledge for coaches who wanted to stay at their current developmental level versus those who wished to coach at a higher competitive level (i.e., elite: [1, 25, 32]), there were a number of consistent trends. Both groups felt that formal coach education would be a valuable learning experience and that mentorship would also be a greatly beneficial source of knowledge, again pointing to the

perceived importance of these guided or mediated learning opportunities [30]. Print and electronic materials, non-NCCP coaching clinics and school, and observing other coaches, however, were reported much less frequently as preferred sources of coaching knowledge across both groups.

The discrepancies between the two groups noted for frequency of preference for interaction with coaching peers and learning by doing suggest that different sources of knowledge are perceived to be beneficial in moving to a higher competitive level versus becoming a better coach at the developmental level. These discrepancies point to the perceived importance of opportunities to gain direct experience with athletes when one is looking to move up to an elite level of coaching. Coaches wishing to improve at their current competitive level, on the other hand, would obtain more benefit from the reciprocal sharing of coaching experiences with their peers.

CONCLUSION

The fact that coaches reported actual and preferred sources of coaching knowledge associated with mediated, unmediated, and internal learning situations highlights the complementary nature of Werthner and Trudel's [30] conceptualization of coach learning. Similarly, Nelson et al.'s [15] formal and informal learning situations are represented in the sources of coaching knowledge rated as most important. It appears coaches actually learn, and prefer to learn from a variety of sources which combine to provide developing coaches a broad picture of the coaching process. Using Sfard's [31] learning metaphors as a framework for classifying sources of knowledge, these results also highlight the perceived importance of utilizing both acquisition and participation metaphors in coach education and development. In particular, the inclusion of formal, mediated learning opportunities as preferred sources of knowledge, in addition to more experientially-based modes, cautions against swinging too far from a balanced perspective. The nature of this balance and what exactly coaches are looking to gain from sources in each metaphor should be explored in greater depth in future research.

More practically, providers of formal coach education courses might look to incorporate these findings into the structure of coach education. The noted differences in preferred sources of knowledge between coaches wishing to stay at a developmental level compared to those wishing to move up to an elite level of competition provide support for contextually-differentiated systems. In order to account for coaches' preference for less learning by doing and increased mediated learning, efforts could be made to provide more formal guidance to coaches while they work with their own athletes. Further, future research might determine what coaches are currently forced to learn by trial-and-error, which could then be incorporated more effectively into standard course-based situations. Finally, in considering the informative and potentially useful trends that emerged from this examination, one must be careful to not overlook the idiosyncratic nature of coach development. The fact that maximal agreement between coaches on any one source of knowledge as a primary source remained at roughly 60% attests to this fact.

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