Defining the Expert Coach Within the Olympic Movement: A Study Performed to Enhance the Outcomes of Coaching Education Programming in the United States

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Introduction

By definition, participation at the elite level of sport is a rare opportunity that is most often granted to those athletes who display competitive excellence in their sport of expertise. As Allen (2007) reminds us, sport expertise is far more than physical prowess and good genetics. To be considered elite, athletes must perform at a high level on a consistent and long-term basis (Ericsson, Prietula, & Cokely, 2007). To be a fixture at the top of sport, it is commonplace for athletes to acquire the assistance of a coach. In fact, Gould, Greenleaf, Chung and Guinan (2002) found that a majority of the athletes competing in the Olympic Games held in Atlanta and Nagano correlated their success with the positive influences of their coach.

For coaches, the body of work that is typically assessed for advancement in the field is the competitive success of the athletes under their supervision. While consistent winning in sport is a reliable barometer in determining if an athlete is elite, it is not the case within leadership. Cote, Young, North and Duff (2007) provide insight into the weakness of this measuring system by explaining, "if we identify and describe the competencies of coaches who we deem as excellent solely based on athletes' performances, we are mistakenly basing our search on indirect behavioral measures". Ericsson et al. (2007) support this claim by stating that most leadership challenges are highly complex and specific to a given scenario, which makes it hard to compare performance across organizations and situations. Therefore, it is difficult to make a correlation between job advancement and expert status.

Considering the paucity of literature existing on elite sport coaching, the purpose of this research endeavor was to develop a standardized definition for an expert coach. Through the identification of common practices and beliefs regarding expert coaches, the aim of this study was to further the abilities of our national sporting system to sustain competitive success at the international level of competition. An additional priority of this research project was to expand the body of literature that exists on elite sport leadership by unearthing the key constructs of expert coaching status. The researcher believes that a clearly articulated definition of expert coaching can assist in the refinement of coaching education curriculum, which will improve many components of the coach-athlete relationship.

Within the United States, formalized coaching education programs have become a popular method of disseminating important information to the coaching profession. In Olympic-based sports, many coaching education programs are delivered by National Governing Bodies (NGBs). These independent federations that fall under the jurisdiction of the United States Olympic Committee (USOC) serve many purposes, but of primary importance is the development of athletes capable of attaining podium-worthy performances at international competitions. Initiatives, including coaching education, have been developed within the framework of most of the NGBs in order to equip coaches with the most up-to-date training theories for the athletes under their direction in hopes of bolstering competitive performance.

Although many studies have alluded to the benefit of various coaching education tactics, no study

to date had set out to determine the constructs that define an expert coach. Therefore, if a goal of coaching educators is to increase the pool of candidates that can be considered elite-level coaches, a working definition of expert coaching should be determined in order to tailor curriculum and modes of delivery. Specifically, Larkin, Duffy and O'Leary (2007) discovered that younger, developing coaches listed the ability to observe elite coaches at work was one of the most valuable tools for increasing their knowledge base. If this is the case, coaching education programs must have a template for defining an elite coach so that lower-ranking coaches have the opportunity to work with an expert in the field. Gilbert, Cote and Mallett (2006) find it surprising that the lack of conceptual framework to explain coach development is surprising, as this is a requisite for optimal coaching education program construction and delivery. Acknowledging the lack of framework and formal definition of expert coaching, research should be carried out in order to develop a definition that embraces the theoretical underpinnings of expert development through the acquisition of human capital over a career span. In addition, Cote, Young, North and Duff (2007) recommend a definition of coaching excellence should be multi-faceted so that it is reflective of the highly variable roles that a sport coach assumes, as well as emphasizing the constant personal interactions between coaches and their athletes in the training and competitive environment.

Research Methods

In order to determine the division between expert coaches from the remainder of the profession, this study utilized Q methodology. A benefit of Q methodology lies in the fact that it helps identify the similarities and differences in the subjective perceptions across a sample group. A considerable difference between Q methodology and correlation coefficients is that "Q does not need large numbers of subjects as does correlational research, for it can reveal a characteristic independently of the distribution of that characteristic relative to other characteristics" (Smith 2001; as cited by Brown, 1994). Simply put, instead of a large number of people receiving a small number of test items, now a small number of people are receiving a large number of tests. This inversion of traditional quantitative research tactics allows the investigator to correlate persons instead of tests.

For this study, seven current U.S. National Team coaches and eight current U.S. National Team athletes with previous experience at the Olympic Games sorted 34 statements regarding expert coaching on a scale of "most like an expert coach" to "least like an expert coach" using Q-assessor, an online software program developed by Stan Kaufman. In addition to ranking the 34 statements, each participant was asked a series of open-ended questions regarding their decisions behind his or her final statement ranking. As a result of the factor analysis on the 15 sorts and post-sort questionnaires, a total of five factors emerged from the data.

Table 1

Breakdown of sporting discipline for coaches sampled		
Sporting Discipline	**Participants**	**Percentage**
Bobsled	1	14.29%
Skeleton	1	14.29%
Ski Jump	1	14.29%
Canoe/Kayak	3	42.85%
Biathlon	1	14.29%

Table 2

Highest competitive level of athletes under coach supervision			
Coach	**Sport**	**Highest Level of Competition**	**Olympic Medal Earned Under Coach's Supervision**
1	Bobsled	Olympian	No
2	Biathlon	Olympian	No
3	Canoe/Kayak	Olympian	Yes
4	Canoe/Kayak	Olympian	Yes
5	Canoe/Kayak	Olympian	Yes
6	Skeleton	Olympian	Yes
7	Ski Jump	Olympian	No

Table 3

Breakdown of sporting discipline for athletes sampled		
Sporting Discipline	**Participants**	**Percentage**
Bobsled	4	50%
Freestyle Ski	1	12.50%
Luge	1	12.50%
Biathlon	2	25%

Table 4

Highest level of competitive success for sampled athlete population			
Athlete	**Sport**	**Highest Level of Competition**	**Olympic Medal**
1	Bobsled	Olympian	Bronze
2	Bobsled	Olympian	Gold
3	Bobsled	Olympian	Gold
4	Freestyle Ski	Olympian	No
5	Luge	Olympian	No
6	Biathlon	Olympian	No
7	Biathlon	Olympian	No
8	Bobsled	Olympian	No

Results

The five factors identified in this study represent the unique perspectives and beliefs regarding expert coaching within the United States Olympic Movement. The five factors were identified as (a) the Knowledgeable Coach, (b) the Evolving Coach, (c) the Communicating Coach, (d) the Trustworthy Coach and (e) the Teaching Coach. Additionally, common themes were discovered between the factors.

Factor A was responsible for most of the variance unearthed in this study with 40% (6) of the respondents loading onto this factor. When considering the results of the online card sort and post-sort interview data, the coaches and athletes loading onto Factor A considered an expert coach to be knowledgeable. In other words, the individuals relating to this factor believe that an expert coach should have the technical knowledge to outwit their opponent while at the same time having the ability to identify and act upon the individualized needs of the athletes under his or her supervision. In addition, coaches who are unwilling to pay attention to the individual needs of the athletes competing at this level may be less likely to keep athletes motivated.

Factor B accounted for 33% of the variance explained in this study with five of the 15 respondents loading on this factor. Evidence from the data analysis and post-sort responses indicates that individuals loading onto Factor B consider an expert coach someone who evolves throughout their career. In other words, the belief presented in Factor B suggests that expert coaches continue to refine their knowledge through interactions with other expert coaches or informal, self-directed educational opportunities. These coaches are motivated to maintain their education as a result of a desire to provide their athletes with competitive advantages. Concurrently, the coaches and athletes who loaded onto this factor argue that an expert coach is also able to keep things simple for the athlete under his or her supervision. That is, the coach is cognizant of an athlete's threshold with regard to information overload in the practice and competitive setting.

Factor C accounted for 13% of the variance explained in this study with two of the 15 respondents loading on this factor. These two individuals loading onto Factor C consider an expert coach as someone who is an effective communicator. In other words, the belief presented in Factor C is that coaches at the highest level of competition are effective communicators who have previous experience as an athlete in the sport they supervise. Based on the data analysis, the respondents who loaded onto this factor assert that an expert coach effectively communicates logistical and high-performance-related information to the athlete on a regular basis. This open line of communication builds the trust between the coach and athlete, which may improve the competitive chances of the athletes under his or her supervision. In addition, the coach's previous experience as an athlete in the sport may provide him or her with technical knowledge that can be used in the development of athletes. Lastly, respondents loading onto Factor C do not believe that an expert coach has to be involved in the personal matters regarding his or her athletes. According to this factor, it can be suggested that athletes at the Olympic level of competition prefer a coach to communicate technical knowledge rather than providing insight into personal information.

Factor D accounted for 7% of the variance explained in this study with one of the 15 respondents loading on this factor. This individual considers an expert coach to be someone who is

trustworthy. More specifically, the level of trust between the coach and athlete may play a significant role in competitive outcomes. In addition, the expert coach described in Factor D is a good teacher who is astute on sporting principles from previous experience as an athlete in the sport, not his or her involvement in coaching education programs. Further, the respondent loading onto Factor D presents additional evidence that a coach is not deemed an expert by his or her confirmation as a National Team coach. Regardless of title, the coach must work to gain the trust of the athletes under his or her supervision.

Lastly, Factor E accounted for 7% of the variance explained in this study with one of the 15 respondents loading on this factor. The data analysis indicates that the individual loading onto Factor E considers an expert coach as someone who is a good teacher. The ability to teach may come from their adaptations to specific occurrences in their sporting careers. In addition, this individual described an expert coach who not only teaches well, but also has garnered respect from other coaches in the profession.

Table 5

Highest Rated Statements for Each Factor			
Factor	**Highest Rated**	**2nd Highest Rated**	**3rd Highest Rated**
1	Advanced Technical Knowledge	Identify Athlete Needs	Effectively Communicate
2	Commitment to Profession	Consult Other Expert Coaches	Keep Things Simple
3	Effectively Communicate	Competitive Experience in Sport	Commitment to Profession
4	Trustworthy	Good Teacher	Doesn't Over-Coach
5	Adapt	Good Teacher	Clearly Defined Role

Table 6

Lowest Rated Statements for Each Factor			
Factor	**Lowest Rated**	**2nd Lowest Rated**	**3rd Lowest Rated**
1	Assigned by NGB	Degree in Sport Science	Coaching Certification
2	Competitive Experience at Elite Level of Sport	Competitive Experience in Sport	Assigned by NGB
3	Exposed to Early Leadership Opportunity	Understanding of Athlete's Personal Issues	Advanced Ability in Program Design
4	Assigned by NGB	Coaching Certification	Advanced Ability in Program Design
5	Exposed to Early Leadership Opportunity	Assigned by NGB	Understanding of Athlete's Personal Issues

Discussion

Upon further investigation of the five factors and data collected from the questionnaire, it was apparent that coaches and athletes participating in this study shared particular beliefs regarding the meaning of expert coaching. Specifically, these commonalities in describing an expert coach were categorized as (a) the value of interpersonal skills, and (b) development of coaching knowledge.

Within leadership theory, coaching is defined as a high-directive and high-supportive approach style found in the Situational Leadership II Model, developed by Blanchard et al. (as cited in Northouse, 2004). The assertion that coaching is both a directive and supportive leadership style is supported by the factor arrays resulting from the data analysis. First and foremost, a majority of the individuals participating in this study believe that an expert coach is a good teacher, which was a positively scoring statement for four of the five factors. In addition, four of the five factors were highlighted by the belief that an expert coach is trustworthy. Lastly, three of the five factors demonstrated the opinion that expert coaches attempt to create a positive training environment. Therefore, the ability to teach an athlete utilizing effective communication strategies while at the same time nurturing a trusting relationship may give a coach the ability to create a training environment that is favored by the athlete. Collectively, the information gathered from the factors resulting from the data analysis suggests that an expert coach is someone who values effective interpersonal skills as they relate to the coach-athlete dyad.

Just as important as the component of interpersonal skills is to defining an expert coach is the coach's development of coaching knowledge. A majority of the participants in this study agree that an expert coach is one that has attained an advanced level of technical knowledge regarding the sport. Interestingly, data collected from the post-sort questionnaire gives rise to the interpretation of valuable educational experiences. Initially, it can be suggested that individuals taking part in this study believe that field-based experiences are the most influential educational opportunities for developing coaching expertise. Specifically, many of the respondents replied that daily interactions with peer and mentor coaches provides the necessary technical knowledge needed for sporting success. In addition, the individuals taking part in this study believe that an expert coach knows how and where to go for answers regarding difficult questions, and is motivated to pursue this information by his or her commitment to the profession and desire to improve an athlete's competitive abilities.

Collectively, the data unearthed in this study expands the current understanding of coaching theory by providing the constructs of how expert coaching is defined. Specifically, an expert coach is an individual who is knowledgeable on the technical demands of his or her sport and can convey this information to each athlete according to individual needs and motivational patterns. This ability not only improves the coach-athlete dyad, but also portrays the coach as an effective teacher. In addition, expert coaches demonstrate a continued desire to hone his or her craft through self-directed educational opportunities. The aim of the continued study is to further the competitive chances of the athletes under their supervision.

Conclusion

This study and its findings are meant to provide insight into the current attitudes and beliefs regarding expert coaching at the highest level of international competition, namely the Olympic Games. The

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data collected and interpreted in this study is meant to elucidate important themes that can be used by coaching educators within higher education and coaching education programs within the United States to further improve the profession of coaching. Using these defining constructs of expert coaching as a guide, coaching educators can provide curriculum and educational activities that increase the probability of creating expert leaders. This type of programming may be of upmost importance to sports in the Olympic catalog since most of the them, such as bobsled, canoe/ kayak, biathlon, ski jumping, archery, and weightlifting, witness the rise of former athletes to coaching positions due to a lack of participation, visibility, and/or interest at the grassroots level of sport in America. While the reasons for this matter are beyond the scope of this research study, it can be deduced that the overriding popularity and economic impact of traditional American sports such as baseball, football, and basketball leave little room for the development of Olympic-based programming at the club, scholastic and collegiate levels. This limited exposure to a wider population of potential athletes and coaches results in even lesser pools of candidates for high-performance coaching positions. Therefore, for lesser-known Olympic sport programs to continue, former athletes may need to graduate into the coaching ranks in order to pass on valuable information regarding technical and tactical developments in the sport. A side effect of the promotion of former athletes to Olympic sport coaches may be the existence of a coaching profession who understands the technical aspects of their sport, but lacks awareness in methods of improving interpersonal skills, leadership, pedagogy and andragogy, self-directed learning, and critical reflection, which have all been alluded to play a role in defining coaching expertise by the participants in this study.

As such, the author recommends that coaching educators within the U.S. Olympic Movement utilize the constructs provided in this study to guide the process of refining educational material and delivery systems to match not only the needs of athletes who are competing in elite sport, but the demographics of the entering coaches to the profession. Through improved coaching education, the U.S. Olympic Movement can maintain sporting excellence by fostering a collection of coaches who are armed with the characteristics necessary to achieve success on the international stage.

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The Role of Deliberate Practice in Becoming an Expert Coach: Part 2 – Reflection

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Tucking your children into bed at night is one of life's beautiful moments. We have found this typically is a time when children are especially reflective and ask some of the most amazing – and strangest – questions. A recent bed-time conversation with my (Wade) 5-year old son, went as follows:

"Dad, what is your favorite food?"
"*I like fish.*"
"Dad, what is your favorite protein?"
"*Steak.*"
"I thought it was chicken?"
"*I like chicken, too.*"
"Dad, is chicken made of turkey?"

After turning out the lights, I found myself walking down the hallway smiling and reflecting on the moment. I didn't make the connection at first, but several days later – while we were writing this paper – it hit me: my son was exhibiting the essence of reflection. You could almost see the wheels turning in his mind, grappling with thoughts and words that were yet to be properly integrated into his emerging mental model of the world. In that moment, the scaffolding was being assembled, laying the foundation for new levels of awareness and more questioning.

What does this have to do with deliberate practice and developing expertise in sport coaching? Everything. Three-time Olympic diving coach Jeffrey Huber (2013) summed it up this way: "In many ways, coaching is a reflective activity" (p. 8). In the last issue of *Olympic Coach Magazine*, we shared the first of a three-part series on applying principles of deliberate practice to becoming an expert sport coach (Gilbert & Trudel, 2012). In that first article, we used the Integrated Definition of Coaching Expertise (Côté & Gilbert, 2009) and the Pyramid of Teaching Success in Sport (Gilbert, Nater, Siwik, & Gallimore, 2010) to define coaching expertise and briefly reviewed three principles of deliberate practice. Recall that although deliberate practice has been widely adopted across disciplines, the sport coaching profession has been slow to use deliberate practice principles for the development of coaches themselves. The focus of the present article – Part 2 in the series – is on providing suggestions for how to close the gap between deliberate practice principles and coach development.

In the current article, we turn our attention to reflection as the primary representative deliberate practice task for sport coaches. Much has been written – both across disciplines and within the field of sport coaching – on reflection as a driver of learning. In fact, entire books, journals and annual conferences are now dedicated to reflection and its role in human development. To our knowledge, we completed one of the earliest studies on the process of reflection and how it relates to coach development (Gilbert & Trudel, 2001; 2004; 2005). In the interim, we have continued to "reflect on reflection" – how it is defined, the role it plays in learning and how we can use reflection most effectively to nurture the development of coaching expertise. We believe two approaches to reflection in particular are highly relevant – and practical – for developing expertise in sport coaching: reflective practice (Schön, 1983) and critical reflection (Hickson, 2011).

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Reflecting on everyday events that occur as part of your coaching is referred to as reflective practice. The goal of reflective practice is to step back from an event – momentarily – and think about causes and potential consequences of the event on performance, athlete development and/or coaching goals. This may be considered a surface-level approach to reflection; a type of "noticing" used to contemplate the next best step in dealing with a situation. For example, it is common for coaches to make mental – or written – notes of performance issues they notice during competition. A successful collegiate and national team ice hockey coach we once studied articulated this type of reflective practice nicely when we questioned him about his in-game behaviors. He said, "During a game, I try to notice things that we are doing that need to be adjusted, and I try to notice some things that the other team is doing so that in between periods I can make adjustments" (Gilbert & Trudel, 2000, p. 125). Jones and colleagues (2013) recently provided a powerful discussion on the role that noticing plays in coaching effectiveness, by adapting the concept from Mason's *The Discipline of Noticing* (2002). They argue "noticing" for coaches must extend beyond athlete-performance cues to include observations about athlete emotions and assumptions about coaching. Jones and colleagues also contend that our emphasis should not be placed on increased noticing, but instead on more efficient noticing. We believe that more efficient noticing (reflective practice) is achieved through regular critical reflection. We certainly are not the first to make this claim. It has been a decade since Cushion and colleagues (2003) made a pioneering argument for integrating critical reflection into formal coach education, although they acknowledged that our collective understanding of how to actually do this was severely undeveloped at the time. Critical reflection typically is very personal and driven by the need to understand why events occur as they do, our assumptions about why they occur this way, and how these assumptions influence our behaviors and attitudes toward others. Cushion and colleagues described critical reflection as a tool for providing "coaches with a mirror in which they can see their own programs and practices" (p. 223).

In the remainder of this article we delve deeper into describing critical reflection, share examples of critical reflection and provide suggestions for how coaches can more formally integrate critical reflection – and the underpinning reflective practice – into their coaching.

The Case for Critical Reflection as a Primary Deliberate Practice Task for Sport Coaches
The ancient Greek philosopher Socrates famously concluded that "the unexamined life is not worth living" (Wikiquote, 2013). Surely we all engage in contemplation at various times in our lives – some much more so than others. In our experience, we have found that sport coaches are notorious contemplators, reporting to us that they are "always thinking" about their coaching (Werthner & Trudel, 2009). While preparing this article, a young collegiate tennis coach stopped by my (Wade) office to share his excitement over a book he was reading about championship boxing coach Enzo Calzaghe (Calzaghe & Pearlman, 2012). In an effort to stimulate critical reflection, I pressed him to summarize what he learned from Enzo's incredible journey that could be applied to his own quest to become an effective coach. The coach paused and struggled to make a connection from Enzo's biography to his own coaching. He was, in a word, confused.

Confusion is typically viewed as a weakness in our society, particularly for someone who is charged with leading others, such as a high performance sport coach. However, self-induced periodic confusion is a launching pad for critical reflection. One of us (Pierre) has written extensively about this idea drawing on constructivist views of learning, noting that self-induced confusion might also be described as intellectual disharmony (Trudel, Culver, & Werthner, 2013), disjuncture (Jarvis, 2006) or cognitive dissonance (Moon,

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2004; Schön, 1983). Now, you may be thinking to yourself, "So I need to be confused in order to become a better coach?" Yes – at least sometimes. Leadership guru Margaret Wheatley wrote extensively about periodic self-induced confusion as a healthy – and essential – way of learning how to learn. Wheatley concludes that confusion is healthy if it is part of the process of moving on and reconfiguring your ideas (London, 2012). The need to regularly challenge ourselves to reflect on how we coach, and the impact of our coaching on others, is also consistent with current views on coaching expertise. In fact, some have argued that coaching expertise should be viewed as a process of redevelopment (Turner, Nelson, & Potrac, 2012). If we ascribe to the view that coaching expertise is a constant journey and not a stable state or destination, then clearly we will regularly find ourselves in states of confusion. The only way out of the confusion – and to grow as a coach – is to question assumptions about what is causing the confusion. These assumptions are the basis for how we view coaching – our mental models of coaching if you will.

Much has been written across disciplines about mental models, including our work where we have drawn heavily from Moon's parallel concept of cognitive structure (Trudel et al., 2013). In the present article, we pull mostly from the writings of Peter Senge, who has written extensively about the central role that mental models play in developing expertise and continuous improvement. Senge (2006) defines mental models as "deeply ingrained assumptions, generalizations or even pictures or images that influence how we understand the world and how we take action" (p. 8). He asserts that seldom are we conscious of these mental models or how they directly influence our decision making and everyday behaviors. Recall, the primary goal of deliberate practice is to help learners develop more elaborate mental models that results in more efficient decision making. Ericsson (2003) describes mental models as "acquired mental representations that allow the experts to anticipate, plan and reason alternative courses of action" (p. 63). The direct connection between critical reflection, deliberate practice and mental models is clear. Regular critical reflection is the deliberate practice task needed to make adjustments in our coaching mental models.

You may still be asking yourself, "Why is it so important that I make regular time in my coaching practice to challenge my mental model? I barely have time to keep up with my coaching responsibilities, let alone finding time to just sit around and think about coaching." In an excellent summary of the research on instruction principles, Rosenshine (2012) made the observation that real learning does not occur without regular time set aside to "check-in" on our assumptions and views about what we are experiencing and trying to learn. Rosenshine also notes that regular "checks for understanding" with students is a common characteristic of effective teachers – and effective coaches are surely no different with their athletes – yet teachers (and coaches) seldom apply this same logic to their own development. We believe a direct benefit for coaches of setting aside regular time to check their understanding of a situation is an improved connection with athletes. The ability to accurately sense the needs of athletes, and how these needs impact performance, has repeatedly been identified as a prerequisite for effective coaching. Most recently, this has been discussed using the concepts of emotional intelligence (Chan & Mallett, 2011; Gilbert & Côté, 2013) and empathic understanding (Lorimer & Jowett, 2013). It is believed critical reflection focused on understanding athlete needs will lead to shared understanding, and it is recommended, "coaches and athletes should also be encouraged to give time over to actively considering themselves and each other, both during and outside of training sessions" (Lorimer & Jowett, 2013, p. 330). Then it is clear that coaches who claim they don't have time to engage in critical reflection are essentially saying they don't have time to learn, or, in the words of Turner et al. (2012), "redevelop their expertise."

How to Integrate Reflection into Your Coaching Practice

Several years ago we summarized suggestions for creating what we referred to as a "reflective practicum" for sport coaches (Gilbert & Trudel, 2006). Drawing on literature mainly from education and coaching – which at that point was quite limited in regards to critical reflection – we identified strategies such as reflecting on typical coaching issues and critical incidents, self-analysis using video and systematic observation techniques, and increasing access to mentors and peers. We now offer three more specific reflection activities for coaches to consider integrating into their coaching practice. The first one is designed to stimulate and nurture reflective practice – the surface level reflection that sets the foundation for critical reflection. The second and third strategies are critical reflection exercises.

Reflective Practice Exercise

Some of you may have heard of After Action Reviews. This exercise, widely claimed to have been most formally developed by the U.S. Army (Senge, 2006), consists of asking three questions after important events: (1) What happened? (2) What did we expect to happen? and (3) What can we learn from the gap? Margaret Wheatley argues the U.S. Army developed After Action Reviews so extensively because – unlike many other environments – continuous learning literally is a matter of life and death. "As one colonel said, 'we realized a while ago that it's better to learn than be dead'" (London, 2012). When and how often should coaches complete this type of reflective practice exercise? As for when, most would argue as close to the end of the event as possible. Coyle in his *Little Book of Talent* (2012) notes this in Tip #39 (Practice Immediately After Performance) and shares the example of golf legend Jack Nicklaus, who claims to have had his most productive practices immediately following a competitive round of golf. As for how, there have been numerous attempts to formalize and support this type of post-event reflective practice with sport coaches. Although reflective journals are repeatedly cited as an effective tool for stimulating reflective practice (Mallett, 2004; Moon, 2004, 2006), the limited coaching research on this topic shows that adherence to reflective journaling is extremely low to nonexistent after coaches leave an intervention and return to the field (Trudel, Gilbert, & Werthner, 2010). Nevertheless, when coaches do engage in reflective journaling they typically acknowledge its importance (Werthner & Trudel, 2009).

One way we have tried to integrate the After Action Review concept with some form of reflective journaling with coaches is through event-reflection cards. Several years ago, Hughes and colleagues (2009) tested the feasibility of having equestrian coaches document their reflections during and after practices using what they referred to as r-cards. Although r-cards required minimal time to complete, and the coaches believed the process helped increase their self-awareness, the coaches also reported that it was a distraction to try and complete the cards during actual training sessions. Hughes and colleagues concluded with proper training during coach-education experiences, coaches could be taught how to efficiently use r-cards while in the midst of coaching.

Building on the After Action Review and r-card literature, we each have experimented with simple procedures for integrating reflective practice into coaches' normal routines. My (Pierre) recent attempt to integrate r-cards into coaching was part of a supervised graduate-student project titled, "Helping Coaches to Develop Their Knowledge." R-cards were given to two coaches and the graduate students met regularly with the coaches over a six-week period. Both of the coaches reported that r-cards helped them reflect on their practice. However, coaches also reported they wanted more input into the content of the r-cards and flexibility in when to use the r-cards (during or after practices/games). Lastly, coaches highlighted the importance of having someone (in our case the graduate students) available to discuss the notes they

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recorded on the r-cards. The role of that person is mainly to act as a sounding board and help the coach engage in critical reflection.

I (Wade) decided to experiment with an adaptation of the r-card idea in an ongoing, continuous improvement project in a high school varsity sport setting. After consulting with the high school athletics director and a graduate student collaborating on the project, we created a simple double-sided reflection card each head coach completes immediately following every competition. The card, the size of a large index card, takes no more than two minutes to complete and is returned to the athletic director within 24 hours of the event. The r-cards vary slightly for each team, because it includes their unique achievement targets for the season. On one side of the card, the coach is asked to record competition outcome information, check progress toward target outcomes and note any significant events of which the athletic director should be aware. On the other side of the card, the coach is asked to reflect on (a) how their previous training sessions may have con-tributed to the competition outcome, and (b) what they learned from the competition that should guide the design of upcoming training sessions. A sample r-card completed by a varsity soccer coach after a match is included on the next page. Although the r-cards have only been tested for a few months, we have received overwhelmingly positive feedback from the coaches and 100 percent adherence. In addition to creating immediate self-awareness for the coaches, we intend to use the r-cards as a source of dialogue in each coach's offseason development meeting.

Critical Reflection Exercises
Although there certainly are many ways – formally and informally – to engage in critical reflection, we have selected two critical reflection exercises that are recommended for use in high-performance settings. The first one we'd like to share comes from Joe Erhmann's recent book "InsideOut Coaching" (2011). This book came to me (Wade) highly recommended by a successful collegiate basketball coach. Although Erhmann never uses terms like "mental model" or "critical reflection," his book is essentially a portrait of one coach's critical-reflection journey resulting in a major adjustment of his mental model of coaching. Erhmann ad-vocates for using a personal-coaching narrative activity to surface and adjust mental models that rests on answering four questions: (1) Why do I coach?, (2) Why do I coach the way I do?, (3) What does it feel like to be coached by me? and (4) How do I define success? He refers to this process as the "interior work" of coaching. Interestingly, Erhmann identifies legendary collegiate basketball coach John Wooden as one of his most influential guideposts in shaping his answers to these critical-reflection questions. Recall in the first article in our series, we also drew heavily from Coach Wooden's mental model of coaching to define coaching expertise (Gilbert & Trudel, 2012). Erhmann describes many critical-reflection activities he and his colleagues have created for use with their athletes, ranging from time set aside during practices for medita-tion/silent contemplation, reflective writing exercises, ceremonies and "moments of greatness." For "mo-ments of greatness," players were asked periodically to share with the team specific examples of teammates acting with empathy. These "moments of greatness" are then recognized with decals placed on the football player's helmet. This is a prime example of a strategy that forces coach and athlete alike to critically reflect, leading to adjustments in their mental models.

Kidman's (2005) *Athlete-Centred Coaching* and Cassidy and colleagues' (2009) *Understanding Sports Coaching* are excellent research-based complements to Erhmann's book for coaches who want to explore the process of critical reflection in greater detail. Kidman's work includes examples from numerous high performance sport coaches and a brief section on self-reflection with dozens of sample reflection questions, whereas Cassidy and colleagues devote an entire chapter to the topic of coach reflection.

R-Card Example

The second critical reflection exercise we'd like to share with you is drawn from Peter Senge's *The Fifth Discipline* (2006). One of the critical-reflection strategies Senge describes is referred to as the 'left-hand column' exercise. For this exercise you select a specific situation that is not leading to the desired outcome – perhaps a training activity or an interaction with an athlete. Using a recent example of the situation, you write out a transcript of the event or exchange on the right side of your file or sheet of paper. Senge (p. 181) gives the following example:

ME: How did the presentation go?
BILL: Well, I don't know. It's really too early to say. Besides, we're breaking new ground here.
ME: Well, what do you think we should do? I believe that the issues you were raising are important.
BILL: I'm not so sure. Let's just wait and see what happens.
ME: You may be right, but I think we may need to do more than just wait.

The second step in the critical reflection exercise requires you use the left-hand column of your file or sheet of paper to write what you were thinking, but didn't say, during the exchange. The purpose of the left-hand column exercise is to bring hidden assumptions to the surface and then take steps to openly share personal views – and the data upon which those views are based – to move dialogue and learning forward. In Senge's example his left-hand column includes assumptions about Bill's work ethic (lacks initiative) and confidence (lacking), because from Senge's perspective the presentation was a bomb. Unless these assumptions are critically challenged and discussed, no real learning will occur. In other words, we maintain our mental models instead of adjust them, and the situation is never genuinely addressed.

Conclusion
When asked about his coaching philosophy (e.g., his mental model), coach of three Olympic wrestling teams and 16 national championship teams at the University of Iowa, Dan Gable responded that it was in constant flux. He said, "as soon as I write it down, there's some change being made or there's something being discovered or I'm learning something else … and now I've got to go back and rearrange it" (Packer & Lazenby, 1998, p. 249). Coach Gable is direct evidence that frequent critical reflection focused on adjusting our mental models – based on the "noticing" that occurs through reflective practice – are critical deliberate practice tasks for developing coaching expertise. We believe regular critical reflection will lead to more efficient noticing for sport coaches as they increase their awareness of what matters – to them in their particular coaching context and to their athletes at their particular stage of development – or what Jones and colleagues (2013) refer to as "the nuance of the context" (p. 277). In the third and final article in this series on the role of deliberate practice in developing coaching expertise, we turn our attention to the role of others and support systems. In the meantime, we encourage you to experiment with the reflection activities suggested in the present article. We believe they are prime examples of deliberate practice tasks that will lead to more effective and enjoyable coaching experiences.

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The Role of Deliberate Practice in Becoming an Expert Coach:
Part 3 – Creating Optimal Settings
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One of the top news stories during the 2013 collegiate basketball championships was the vicious behavior of Rutgers men's basketball coach Mike Rice, which ultimately led to his firing and the subsequent firing of the Rutgers' athletics director. The video of Mike Rice physically and verbally abusing his student-athletes is both disturbing and extremely saddening; clearly inconsistent with the definitions of an effective coach we discussed in our lead article in this 3-part series on developing coaching expertise (Gilbert & Trudel, 2012). We remind readers about the Mike Rice example because it highlights the topic we address in this third article – creating the right environment for nurturing coach development through deliberate practice. Evidently, the athletic administration at Rutgers was made aware of Mike Rice's behavior on numerous occasions, including a review of the infamous video. Yet, coach Rice was allowed to continue in his position. It is interesting to note that after initially watching the video, the athletic director elected to provide coach Rice with a chance for "rehabilitation," requiring him to attend anger management classes. We wonder if the final outcome of the Rutgers basketball case would have been different if coach Rice developed his skills in an environment that provided coaches with resources to help them regularly engage in the type of reflective practice and critical reflection we discussed in our second article in this series (Gilbert & Trudel, 2013); exercises designed to challenge coaches to critically examine their assumptions (mental models) about effective coaching strategies (Knowles, Gilbourne, Borrie, & Nevill, 2001).

In the latest development from the Rutgers case, the university announced it will conduct a comprehensive review of practice videotapes across all 22 sports in their athletics program (CBS Interactive, 2013). Rather than scrutinizing the practices of coaches as a knee-jerk reaction to a scandal, would it not be more effective for the long-term success of programs to work collaboratively with coaches with regular meetings to reflect on coaching practices and help coaches learn to engage in critical reflection? The Rutgers case will prove to be very costly to the university, the coach and the athletic director, not to mention the long-term negative impacts on student-athletes' development (New Jersey Online LLC, 2013). One can imagine, at considerably less cost, an athletics setting that invests in a professionally trained coach development facilitator who helps design and manage a coach's community of practice (Gilbert, Gallimore, & Trudel, 2009) and also serves as a personal coach for guiding coach critical reflection (Gould, Carson, & Blanton, 2013; Trudel, 2012). Athletics directors, or directors of coaching, are well equipped to play this important role, but likely will require some additional training in creating optimal coach development settings (Trudel & Gilbert, 2004).

In our previous article (Gilbert & Trudel, 2013) we focused on the primary deliberate practice task for sport coaches: reflection. We differentiated between reflective practice and critical reflection. Reflective practice (Schön, 1983) is what many coaches regularly perform in varying degrees based on personal and environmental conditions (Gilbert & Trudel, 2005). Using reflective practice, coaches will typically step back after an event to evaluate what happened and will determine how best to proceed. Reviewing videos, statistics and discussions with assistant coaches are common examples of reflective practice.

On the other hand, critical reflection is a kind of deeper level of reflection that requires coaches to question their thought-process, which often results in what is referred to as "self-induced periodic confusion" (Hickson, 2011). We provided suggestions in our second article to help coaches more formally integrate reflection into their coaching. However, developing the habit of reflection can be a daunting task. Therefore, a supportive environment is crucial in stimulating and nurturing coach reflection – critical reflection in particular (Cassidy, Potrac, & McKenzie, 2006; Lyle, 2002). In this article, we first discuss the relative contribution of three learning situations (mediated, unmediated, and internal) in the different stages of coaching expertise (beginner, competent, proficient and expert) as well as the importance of deliberate practice. We will then explore what coach development administrators (CDAs) in different coaching contexts (recreational, development and elite) can do to support an optimal learning environment for coaches and athletes. Figure 1 is provided as a tool to graphically illustrate the contributions of different learning situations and deliberate practice across different coaching contexts and stages of coaching expertise.

How Coaches Learn to Coach: The Contribution of Different Learning Situations

Studies in which coaches were questioned about how they learn to coach suggest that it is through participating in many different learning situations. Although participating in a formal coach education program is usually the only way to receive a certificate, coaches indicate that most of their learning comes from books or videos, exploring Internet-based resources interacting with others, including mentors and the observation of other coaches (Cushion & Nelson, 2013). It is also clear that experience as an athlete directly influences the way in which coaches approach their craft (Chesterfield, Potrac, & Jones, 2010; Young, 2013). Recent studies indicate that both primary socialization (family) and secondary socialization (school, sport) strongly influence one's coaching philosophy (Callary, Werthner, & Trudel, 2011; Nash & Sproule, 2009). Generally, coaches attribute most of their learning to personal experience. Accepting that each coach's developmental path is shaped by their unique set of personal experiences – sometimes referred to as a personal biography – reinforces that there is no "one best way" to develop coaching expertise (Gilbert, Côté, & Mallett, 2006; Mallett, Rynne, & Dickens, 2013; Werthner & Trudel, 2009). Despite the idiosyncratic nature of developing coaching expertise, we believe common principles exist for creating environments for supporting coach deliberate practice and the development of coaching expertise. Our position is grounded in the literature on (a) how coaches learn to coach and the relative importance of three types of learning situations (Trudel, Culver, & Werthner, 2013; Trudel, Gilbert, & Werthner, 2010; Werthner & Trudel, 2009), and (b) deliberate practice and stages of coach expertise development – beginner, competent, proficient, and expert (Schempp, McCullick, & Mason, 2006).

The beginner coach stage typically corresponds to the first few years of coaching in a specific coaching context (i.e., recreational, developmental, elite). Each time coaches enter a new coaching context, there will be a period of socialization where they will have to learn the dominant language, values and norms of that particular setting (Feiman-Nemser, 2010). Contrary to many other professionals (i.e., physicians, lawyers, teachers), most coaches start coaching and then seek out formal coach education. Participating in formal coach education while simultaneously working and coaching presents time challenges and, as a result, most formal coach education is delivered in a condensed format (i.e., a weekend clinic). This kind of mediated learning situation has often been criticized for its lack of relevance to real-world coaching practices (Cushion, Armour, & Jones, 2003).
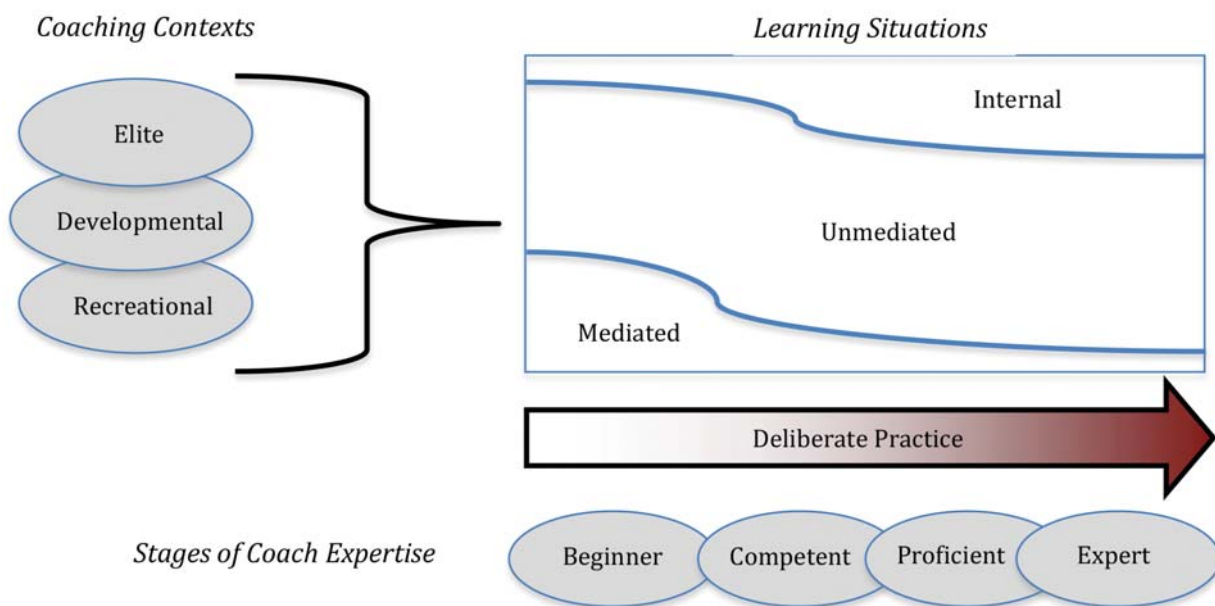
Mediated learning situations
Learning situations where coaches do not select the material to be learned. In other words, the learning context is controlled by other people; an expert or group of experts chooses the material of teaching, the delivery format, and when and where the learning activity takes place (e.g., coach education training program; workshops, seminars, etc.).

Unmediated learning situations
Learning situations where coaches decide by themselves what information they need and the different sources to be consulted (e.g., colleagues, books, websites, etc.).

Internal learning situations
In these learning situations there is no new material of learning coming from either a mediated or unmediated learning situation. Instead the individual reorganizes what he/she already knows, sometimes referred to as 'cognitive housekeeping'. Examples of situations where people can 'stop and think' are writing in a journal or working with a personal coach.

Deliberate practice
Practice that focuses on tasks beyond your current level of competence and comfort.

- Figure 1. Contribution of learning situations and deliberate practice in developing coaching expertise

We recently suggested that by taking a coach-learner perspective as opposed to an instructional perspective, some changes could easily be made that could improve these types of condensed coach education programs (Trudel et al., 2013). Further, beginner coaches might be considered "dependent learners" (Covey, 2004). Because beginner coaches are in a dependent phase marked by the need (often mandated) to acquire new information, it is not likely that coaches will be reorganizing their knowledge (internal learning situation) at this stage of development. When they do begin to reorganize their knowledge, they are entering the next stage of coach expertise development.

The second stage of coach expertise development is the competent coach. Competent coaches may occasionally participate in mediated learning situations, such as seminars or workshops, particularly if they need to accumulate professional development credits to preserve their certifications. Some coaches in this stage of development might take the time to "stop and think," but this seems to be rare and not done systematically (Knowles, Borrie, & Telfer, 2005). Coaches in the competent stage of development will reflect on their coaching practice (games and practices) to identify gaps and make adjustments. Because coaches in this stage are becoming more independent, they are more likely to decide on their own what is important to learn and from whom (unmediated learning situations). Unfortunately, some coaches may push their independency too far and intentionally use strategies to avoid sharing what they believe is the best way to train athletes. Coaches in this stage maintain the mindset that other coaches are viewed as rivals instead of colleagues (Lemyre, Trudel, & Durand-Bush, 2007; Trudel & Gilbert, 2004). To move forward in the journey to becoming an expert coach, competent coaches need to devote more time coaching and shift from an independent mindset to an interdependent mindset: "If I am intellectually interdependent, I realize that I need the best thinking of other people to join with my own" (Covey, 2004, p. 51).

The third and fourth stages of coach expertise development are the proficient coach and the expert coach. If we look in the dictionary, the difference between the two are not particularly evident. Proficient means a person "well-advanced or competent in any art, science, or subject; skilled," while expert stands for a person "who has special skill or knowledge in some particular field; specialist" (dictionary.com). In fact, these two stages are similar in many aspects. First, coaches in these two stages are very knowledgeable and are more likely to mentor beginner and competent coaches than take courses to develop their coaching techniques, although they will not hesitate to do so if they think they can learn even a small thing that could make a big difference in athlete performance (Werthner & Trudel, 2009). Additionally, they share the conviction that there is not "one best way" to develop athletes. As a result, they will not hesitate to exchange knowledge with other coaches, and their thirst for knowledge will lead them to investigate literature outside of sport (Werthner & Trudel, 2009). Finally, proficient and expert coaches spend more time performing "cognitive housekeeping" as some coaches recognize the importance of utilizing a reflective journal (internal learning situations) (Werthner & Trudel, 2009). Their thought process at the reflective practice level enables them to remain focused on day-to-day tasks, but it is their critical reflection that allows them see the big picture, shift perspectives, and identify new ways of thinking:

> The practices of reflection are not just about fixing what is wrong and working out a way to get shot of our problems. Reflective practices can and should be about nurturing, extending and developing strengths and what is best. They should be about amplifying creativity, courage, perseverance, determination, kindness and fairness, for example. (Ghaye, 2011, p. 190)

Considering that proficient and expert coaches seem to share the same coaching practice and learning situations, what then makes the two groups different? The answer is deliberate practice. As discussed in the first article of this series (Gilbert & Trudel, 2012), the three key principles of deliberate practice are: a clearly defined task at the appropriate level of challenge for the specific learner, provision of unambiguous feedback, and opportunities to repeat to allow for error correction and subtle refinements. For Ericsson, Prietula, and Cokely (2007): "Genuine experts not only practice deliberately but also think deliberately" (p. 118). Essentially, expert coaches will more readily recognize that to develop as a coach, they have to adopt a conscious learning approach. Rather than waiting for learning situations (mediated, unmediated, internal) to occur spontaneously, these coaches will actively seek or create such situations (Werthner & Trudel, 2009). They will deliberately (a) set learning goals at the beginning of any learning opportunity, (b) use a deep learning approach by being open to modify what they already know and/or their way of do-ing things, (c) ask for feedback, and (d) persevere if a new approach takes some time to be successfully implemented. Legendary expert coach John Wooden was notorious for engaging in this type of deliber-ate practice across his entire career (Nater & Gallimore, 2010). In brief, expert coaches will not hesitate to step outside of their comfort zone to explore alternative ways of thinking about their coaching practice and the coaching culture in which it is embedded.

How Coach Development Administrators can Facilitate Coach Expertise Development

Knowles et al. (2005), after analyzing six coaching education programs, concluded, "When taken as a whole, the programmes that were assessed did not provide clear structures for the development of reflec-tive skills alongside the delivery of sport specific technical knowledge" (p. 1719). The people who are in positions to either design, deliver or select coach education programming – referred to collectively as coach development administrators (CDAs) – should be encouraged to broaden their role in the coach development process (Trudel et al., 2013; Trudel et al., 2010). First and foremost, it is important that CDAs consider the different coaching contexts in which coaches work. We have decided to use the most common coaching practice classification for North American sport: recreational, developmental and elite. We would like to draw attention to the fact that elite coaches are not synonymous with expert coaches (Lemyre et al., 2007) and that expert coaches can be found in all three of the coaching contexts (Côté & Gilbert, 2009; Ford, Coughlan, & Williams, 2009). For more details about each of these three contexts and the typical profile of coaches in each of these contexts, readers are referred to one of our previous papers (Trudel & Gilbert, 2006).

The majority of sport coaches coach in the recreational context. Coaches in this context are often volun-teers, and their experiences prior to coaching can vary. For example, parents with no experience in sport, but who have accepted a coaching position under the pressure of "if no one volunteers to coach there will be no team," can end up coaching alongside other parents with many years of experience as an athlete or a coach (Capstick, 2013). As beginner coaches, they may participate in two types of coach education programs: a large-scale coach education program mandated by national or local sport associations (i.e., Coaching Association of Canada, California Interscholastic Federation) or a few hours of optional training organized by the local sport association. In both cases, the CDAs will focus their efforts on providing the beginner coaches with minimal, but essential knowledge to teach basic sport skills and create a safe and enjoyable experience for sport participants. For beginner coaches, their first years can be extremely chal-lenging (Lemyre & Trudel, 2004). Therefore, CDAs should use new technologies to maintain contact with this large group of coaches. For example, sport organization websites should not only highlight the

achievements of elite teams, but resources (i.e., practice activities, discussion forums, etc.) should also be provided to assist coaches even if their role is limited. Because of the high attrition rate in recreational sport contexts, there are few coaches at the proficient and expert stages in recreational sport. This is unfortunate, as it could be argued that young athletes in recreational sport contexts have the greatest need for proficient and expert coaches to develop the proper foundation for continued participation and advancement in sport (Huber, 2013).

Most of the coaches in the developmental context have experiences as an athlete and many coaches will also have a few years of coaching experience. In this context, coaches may be volunteers or paid (often part-time), depending on the sport's culture. Their status as a beginner coach will be short and during that time they will likely enroll in a coach education program to obtain a certification requested by CDAs. Considering the bulk of their learning is rooted in unmediated learning situations, it has been suggested that CDAs should facilitate the implementation of coach learning communities: "We believe that large-scale coach education programs (i.e., certification programs) together, with local professional learning communities, have the potential to significantly improve coach development" (Gilbert et al., 2009, p. 3). Typical coach learning communities will regroup seven to ten coaches from a sport-specific context (i.e., high school volleyball) who will participate in regular development meetings guided by a facilitator. Through discussions on their ongoing coaching practice, coaches will not only share their knowledge, but will also create knowledge as they work together to accomplish shared goals (Bertram & Gilbert, 2011). In addition to helping coaches reflect on their own practice and facilitate critical reflection, research has shown that this approach presents the added benefit of increasing coaches' confidence (Cassidy et al., 2006). Although not clearly mentioned in the literature, it appears that coaches in the developmental context who have more years of experience and reflective skills will be considered proficient and perhaps expert coaches – acting as mentors or technical directors.

Coaches in the elite context are more likely to be employed full-time and with a portfolio of multiple years of experience as a competitive athlete followed by years as coaches and assistant coach. The beginner coach stage is often short, except for elite athletes who suddenly land a head coach position (Hesse & Lavallee, 2010). This will require guidance to advance beyond their technical knowledge of the sport in order to learn how to manage athletes and teams in an elite sport environment (Jones, Bailey, & Thompson, 2013; Mallett et al., 2013). This is required to progress from the beginner coach stage to the competent coach stage. In the last few decades, we have seen many "ists" (i.e., psychologists, nutritionists, physiologists) enter the coaching field, which implies that coaches interact with these specialists when reflecting on their coaching practice. Therefore, to become competent coaches, coaches have to develop their professional knowledge as well as interpersonal knowledge (Gilbert & Côté, 2013). Finally, in order to move from "competent" to "proficient" or "expert," elite coaches should be guided to reflect not only on problems, but also on strengths, sometimes referred to as a strengths-based approach to learning (Ghaye, 2011). To be among the best of the best, coaches cannot emulate other coaches – they have to innovate, be creative and adaptable, and maximize their strengths (Gordon & Gucciardi, 2011). Unfortunately, despite decades of working closely with coaches across a wide range of sport settings, it is rare to find settings that are engineered to nurture regular coach deliberate practice as we have described in this article. This developmental gap appears to be common across disciplines, as evidenced in Wagner's (2012) recent research on the educational system in the United States:

In the past, our country has produced innovators more by accident than by design. Rarely do entrepreneurs or innovators talk about how their schooling or their places of work – or even their parents – developed their talents or encouraged their aspirations. (p. 22)

Fortunately, Wagner also notes, "All the experts whom I've cited share the belief that most people can become more creative and innovative – given the right environment and opportunities" (p. 16). So, what can CDAs do to create the right environment and opportunities for nurturing the development of coaching expertise and coach deliberate practice?

First, CDAs should recognize that elite coaches are in charge of their development, but they need to be supported to maximize their development. Support from CDAs could start with a meeting with coaches to discuss their learning plans, and then to provide appropriate resources and funding. Among the different resources offered there should be what researchers have called "a critical friend," such as providing an "opportunity for the coach to engage in friendly supportive relations outside his/her immediate coaching environment" (North, 2010, p. 252). We believe that CDAs could also provide the services of a "personal coach" to their elite coaches. The popularity of business and personal coaching is growing and is now "recognized as a powerful vehicle for increasing performance, achieving results and optimizing personal effectiveness. Because it has proved to be so effective, many companies, and government departments invest in internal and external coaching for their employees" (Bachkirova, Cox, & Clutterbuck, 2010, p. 1). The literature on expertise and business/personal coaching provides a good rationale to suggest that elite sport coaches would benefit from having a personal coach. As explained previously, to become an expert coach, one needs to regularly engage in deliberate practice. However, many coaches find it difficult to set aside time to engage in critical reflection and sustain the effort needed to challenge their mental models (Cassidy, Jones, & Potrac, 2009). With that said, a personal coach may be the missing element.

The International Coaching Federation (2013) defines personal coaching as "partnering with clients in a thought-provoking and creative process that inspires them to maximize their personal and professional potential." For Parsloe and Leedham (2009) personal coaching "is simply two people having a conversation...but a very specific type of conversation and not everyone is used to having the patience and skills to help people learn in this way" (p. 9). As reflective practice and critical reflection are essentially conversations – either with oneself or with trusted peers – it is clear that providing sport coaches with access to a personal coach could greatly enhance the development of coaching expertise. We base this conclusion not only on our collective testing of this personal coaching approach with a wide range of sport coaches, but also on the deliberate practice research that displays "a consistent relationship between the amount and quality of solitary activities meeting the criteria of DP [Deliberate Practice] and performance in a wide range of domains of expertise" (Ericsson, 2008, p. 992). Reflective practice and critical reflection are exactly the type of solitary activities that comprise deliberate practice for sport coaches. There is no doubt in our minds that coach development can be optimized by creating settings that provide access to personal coaches for sport coaches. We want to reiterate here that we are not suggesting that every sport organization and athletics department hire a personal coach. Although this may be a viable option in some settings, a more cost-effective approach will be to train an existing member of the setting (athletics director, coach development officer or a sport coach) to serve in that role alongside their other duties (perhaps with a reduction in their other responsibilities). Criteria for identifying potential "coaches for coaches" from local settings could include personal characteristic such as: being approachable, respectful, knowledgeable, up-to-date, organized and trustworthy (Bloom, 2013). It is not enough to ask coaches

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to engage in deliberate practice; the setting must include scaffolds to support coaches in their deliberate practice quests.

There are many personal coaching approaches based on different schools and traditions (Bachkirova et al., 2010). The approach proposed by Cox (2013) coincides with what we have discussed so far. According to Cox, coaching is synonymous with facilitated reflective practice as "coaching begins and ends with the client's experience, whether that is specifically workplace experience or whole life experience, and in between is a complex process of phenomenological reflection augmented by critical thinking" (p. 2). As you can see, the personal coach we are referring to will play a different role than a sport psychologist, a mentor or an organizational consultant (Hawkins & Smith, 2013). To create a safe and reflective space, the personal coach will have to demonstrate core personal coaching competencies (i.e., active listening, establishing trust, powerful questioning, designing actions, etc.) (International Coaching Federation, 2013) and will use varied strategies to help coaches reflect on their practice (video, role playing, narratives, reflective cards, etc.). For example, the nondirective model of coaching by Joyce, Weil, and Calhoun (2009) can be used as a guide for those who assume the role of personal coach in sport settings. Olympic coach Jeffrey Huber (2013) provides suggestions for ways in which to adapt the nondirective model of coaching to coaching athletes. He explains that regular coach-athlete interviews should be conducted following a five-phase process. The five phases are: defining the helping situation, exploring the problem, developing insight, planning and decision making, and integration. We believe this five-phase nondirective coaching process could be equally applied to coaching coaches. For those who might question the willingness of high performance sport coaches to participate in personal coaching activities, Ericsson et al.'s (2007) comments are particularly insightful: "The development of expertise requires coaches who are capable of giving constructive, even painful, feedback. Real experts are extremely motivated students who seek out such feedback. They're also skilled at understanding when and if a coach's advice doesn't work for them" (p. 121). We believe that those coaches who genuinely aspire to reach their potential as high performance sport coaches will be open to personal coaching and investing time in deliberate practice activities.

Conclusion

The purpose of this article was to highlight the importance of creating optimal coach development settings that support coach deliberate practice and the development of coaching expertise. As the Rutgers University case illustrates, ignoring the long-term development of coaches can result in unnecessary financial and emotional costs – to coaches, athletes, and entire athletics programs. We firmly believe that the settings in which coaches work must be re-engineered to include formal, regular and guided support to help coaches engage in reflective practice and critical reflection. In other words, coaches need coaches too. For several years, we have been experimenting with sport partners in the United States and Canada to create these types of re-engineered developmental settings. Our partners consistently report that the subtle changes we have helped them make in their settings directly contribute to enhanced coach and athlete performance. In short, these ideas – which we have borrowed and adapted from a wide range of literature – work. Further, we are encouraged in knowing that we are not alone in these efforts. For example, former Olympic coach Cliff Mallett and his colleagues (2013) in Australia have also experimented with similar strategies to optimize coach deliberate practice. They recently concluded:

> In the case of workplace learning, those responsible for the environment (i.e., high performance managers, coaches and administrators) need to consider how potentially generative the learning context is for their high performance coaches. It is necessary for such people to ask the question: do our high performance coaches have sufficient time and resources allocated with the intended outcome of development? But it is not enough to have a potentially rich learning environment, it is the coach's perception of the environment that is of greatest importance. The individual must be considered to be central to what is and is not possible with regard to learning and development. (p. 473)

Performance expectations for coaches at all levels are increasingly high. We believe the provision of coach development resources has not kept pace with the increased demands and scrutiny placed on coaches and athletics programs. Although there is a relentless production of sport science that is being used to make finer and finer adjustments in athlete performance, similar widespread integration of learning science into the creation of optimal coach development settings has yet to occur. Taking simple, albeit challenging, steps like creating coach learning communities and providing access to personal coaches to stimulate and guide coach deliberate practice activities may be the missing link (Barnson, 2010; Gilbert et al., 2009). Movement across the stages of coaching expertise (beginner, competent, proficient, expert) will ultimately depend on each individual coach's decision to invest time in reflective practice and critical reflection in order to maximize the potential of all types of learning situations (mediated, unmediated, internal).

Recent literature reviews reveal an increasing amount of research on coaching expertise, with a particular emphasis on understanding the development of coaching expertise (Nash, Martindale, Collins, & Martindale, 2012; Rangeon, Gilbert, & Bruner, 2012). For example, the latest review by Nash and her colleagues shows that research on the developmental processes used to become an expert coach accounted for 30% of the 50 coaching expertise studies published between 1993 and 2009. However, they also found 27 different explanations of 'coaching expertise' across the 50 studies. These findings clearly show the interest in and need for continued dialogue and research on the development of coaching expertise. We would like to thank Christine Bolger for extending us the opportunity to contribute to this dialogue by sharing our ideas about the role deliberate practice plays in the development of coaching expertise. We look forward to continuing to learn from all the wonderful and insightful coaches we have been blessed to connect with, and sharing our evolving insights about coaching expertise with you in future writings and presentations.

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A Glimpse at the New International Sport Coaching Framework
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The global significance of coaching and the awareness of the very important role played by coaches at every level of sport have risen significantly over the last decade. The International Council for Coaching Excellence (ICCE), in conjunction with the Association of Summer Olympic International Federations (ASOIF), brought together a project group in 2011 including a wide representation of international sport coaching stakeholders, organizations, and experts to develop the International Sport Coaching Framework (ISCF).

The Project Group is led by the Joint Chairs Marisol Casado (President of the International Triathlon Union, ASOIF Council Member and member of the International Olympic Committee) and Pat Duffy (Professor of Sport Coaching at Leeds Metropolitan University; Vice President - Europe of ICCE and Chairman of the European Coaching Council).

ISCF version 1.1 was launched at the Global Coaches House on August 1 during the 2012 Olympic Games in London and has been published by ICCE's partner Human Kinetics.

The purpose of the framework is to provide an internationally recognized reference point for the education, development, and recognition of coaches.

Coaches play a central role in promoting sport participation and enhancing the performance of athletes and teams. In nearly 200 countries, millions of volunteer and paid coaches guide the participation of hundreds of millions of children, players, and athletes. The organizations that employ them owe it to coaches to ensure they have sufficient educational footing, philosophical orientation, and resources to fulfil the duties expected of them.

A globally recognized reference point that provides a common, yet adaptable, set of criteria to inform, guide, and support the development and qualification of coaches has been long overdue.

Global to National to Local

The framework provides a blueprint that will have global application. This poses a significant challenge given the diversity of sports, countries, and contexts in which coaching is delivered. It is an attempt to establish a seamless connection for the support and management of coaches from the global to the national and local levels through the use of common tools such as:

- a shared terminology: a common language
- a definition of coaching roles and associated levels of competence and responsibility
- coaching performance standards for training, certifying, and evaluating coaches and enhancing their effectiveness

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