The aim of this paper is twofold: first, to examine how coaching expertise is defined and second, to investigate how this expertise develops over time. This research involved semi-structured interviews with elite athletes and elite coaches and was done in the tradition of grounded theory. Results suggested that there is a need to go beyond identifying a coach as an expert based on the performance of his/her athletes. Some of the additional criteria suggested included: be recognized by peers (other coaches) as experts; be recognized by athletes as experts and have successful athletes/teams at any level of competition. In keeping with the tradition of studying expertise, we suggest that research in coaching expertise would benefit by being more specific.

Keywords: coaching, expertise, development, elite coach, expert coach

Introduction

It is important that we understand how coaches develop expertise so we can provide the best training possible. Bloom (1986) highlighted the importance of quality coaching in developing
athletes so it is surprising that more studies have not been undertaken on coaching development. Our knowledge, as a research community, of how coaches develop expertise is meagre and more studies are needed to enhance our understanding of this process. There are several issues surrounding the study of coaching expertise that need to be addressed including how we define an expert coach. Our study aims to enhance understanding in this area.

The Definition of an Expert Coach

According to Ericsson and Charness (1994), expert performers must demonstrate superior performance to be perceived as an expert. Researchers have used the perception of others or membership in a group to identify the experts to be studied. For instance, Baker, Côté and Abernethy (2003) selected expert decision makers in ball sports (netball, field hockey and basketball) by allowing their national team coaches to choose them based on their status as the best decision makers in their respective sports. Alternatively, Ste. Marie (1999) deemed a gymnastics judge with the following resume to be an expert: 10 or more years of experience, ability to judge at the National or International level and be a Level V provincial judge. Ward and Williams (2003) identified “expert” soccer players on the basis of national team membership while novice players were defined by their status as recreational team athletes. The lack of consistency in how experts have been identified in previous studies provides justification for the basis of our current study.

In coaching, the current research practice is to define coaches as expert based primarily on the performance of their athletes and years of experience. For instance, Horton, Baker and Deakin (2005) observed coaching behaviours of expert coaches in the sports of basketball (n=2), soccer (n=2) and wheelchair basketball (n=1). These coaches were considered experts based on their status as National Team coaches. Côté, Salmela, Trudel, Baria and Russell (1995) defined an expert gymnastics coach using the following criteria: coach must have at least ten years of coaching experience, the minimal level the person must coach at was provincial, the coach must have developed at least one international athlete or two national athletes and be recognized by the national association as a coach who develops elite athletes. Hardin (2000) defined expert high-school level coaches as: having a minimum of five years of coaching experience, having a win/loss record of at least 70% or higher, having two or more playoff titles, peer recognition as an outstanding coach, and has had leadership roles via coach training or leading sporting clinics.

Côté and Sedgwick (2003) provided a definition of both coaches and athletes in the sport of rowing. The coaches in the study were considered experts while the athletes were deemed elite. The rowing coaches must have had a minimum of ten years of experience, developed several international-level athletes, and been recognized by their peers. The elite rower had to be
an international competitor and have competed at one or more of the following: Commonwealth Games, World Championships or Olympic Games. Nash and Sproule (2009) identified expert coaches for their study based on four criteria: ten or more years of coaching experience, coaching athletes at a “representative level” (district or national), continual development of national performers, and the coaches held the highest available coaching award from their national governing body.

As evidenced by the previous examples, there is no cohesive definition of what an expert coach is. Abraham, Collins and Martindale (2006) have suggested that there is a need to explicitly define “expert” coaching performance so that the criteria identified can be used in future research. Nash and Sproule (2009) have gone on to make this suggestion again; specifically by making it known that one should question the criteria they have used in their study. One purpose of the present research was to provide suggestions for definitional criteria that should be used in future studies on expert coaching.

**Characteristics of Expert Coaches**

Several concrete characteristics of coaches can be easily quantified (e.g., win/loss record, years of experience, certification level (in Canada, NCCP level), number of titles won by athletes). It would be interesting to find out if there are other common characteristics of expert coaches that can be seen or measured that can contribute to one being identified as an expert. Hardin (2000) investigated characteristics of expert high school coaches. Three themes emerged from the analysis of the interviews, documents and field observations. The coaches reported spending a significant amount of time planning and continuing their education and considered this necessary for their improvement as coaches. The coaches also cited experience in sport as a player as an important facet in their coaching ability but only one coach in this study reported that experience as a coach was important.

Horton et al. (2005) observed five expert national team coaches of team sports during practice sessions and rated the coaches’ behaviour using the Revised Coaching Behaviour Recording Form (RCBRF) (developed by Bloom, Crumpton, & Anderson, 1999; revised by Horton et al.). The group also interviewed all five of the coaches and some of their athletes (exact number of athletes not given). Results indicated that expert coaches emphasized tactical instruction, followed by general instruction, then technical instruction, as measured by frequency and duration of these behaviours during practice. Praise and encouragement was also used quite frequently, although of a shorter duration. Scolds, criticism/re-instruction and nonverbal punishment were the least frequent behaviours of the coaches. The qualitative interviews with the coaches and athletes provided support for the results from the RCBRF as the participants in the
study created a vision of a supportive coach that demands effort and intensity during training. In another study on the characteristics of expert coaches, Côté and Sedgwick (2003) identified seven major categories of expert (rowing) coaching behaviour. In this study, both expert coaches and elite athletes were interviewed. We have highlighted this point since it is rare that athletes are participants in expert coaching studies. This is curious since the athlete’s success is partly due to the ability of the coach. According to the study participants, expert rowing coaches: plan proactively for training and competition, create a positive training environment, facilitate the athletes’ goal setting, build the athletes’ confidence, teach technical and physical skills effectively (instruction and feedback was included in this category), recognize individual differences in the athletes and establish positive personal relationships with each athlete. The aforementioned studies have gleaned the broadness of the findings of studies on coaching characteristics and highlight the importance of more work in this area.

The Development of Coaching Expertise

While the above studies have provided information about expert coaches’ characteristics and behaviours, there is much less known about how these characteristics and behaviours actually develop and how they contribute to the coach becoming an expert. Schempp, McCullick and Mason (2006) discussed the development of expert coaching. The group highlighted the findings of Ericsson and Charness (2004) that it takes ten years of deliberate practice for one to become an expert in a given domain. Schempp et al. suggest that anyone can increase one’s coaching expertise if he/she invests the time and seeks out the correct type of practice for skills specific to coaching.

Salmela (1995) studied the development of expertise in expert team sport coaches of four sports: basketball, ice hockey, volleyball and field hockey. Commonalities in the expertise development process amongst these coaches were: involvement in several sports as young athletes, working with and learning from more experienced coaches early in their coaching careers, consulting with and learning from other expert coaches, learning from experiences and continuing education (formal training included). In another study on coaching expertise, Fleurance and Cotteau (1999) identified seven major themes in how coaches develop expertise: formal coaching education, experience as a player in the sport, coaching experience, working with and learning from mentors, interaction with high level athletes, ongoing coaching education and a personal commitment to coaching. The common findings in these two studies indicate that mentoring, experience as an athlete and formal training are important factors in the expertise development process but the differences in findings provide support to our assertion that more research is needed in this area.
In a different approach to the study of expert coaching, Gilbert, Côté and Mallett (2006) studied the developmental paths and activities related to coaching development of successful high school, community college and college level coaches in three different sports. All of the coaches in the study had extensive involvement in various sports as athletes. In fact, the researchers reported that a minimum of several thousand hours of playing participation was common amongst the coaches in this study over an average of thirteen years. The more elite coaches in the group (Division 1 NCAA) specialized in fewer sports as youths than the lower level coaches (high school). Both college level groups of coaches spent more time per year participating in activities that promote their coaching expertise development. All groups spent only a small amount of time participating in formal coach training (meaning through a national sporting organization). The results suggested that the development paths varied across different sports and levels of competition; therefore, the authors suggested that the study of coaching developmental pathways must be coaching context specific.

Erickson, Côté and Fraser-Thomas (2007) sought to discover what experiences are necessary for one to become a high-performance coach. The participants were nineteen coaches of elite athletes (both team and individual sports). Retrospective interviews provided the data for analysis. Commonalities amongst the coaches were: experience as an athlete within the sport they currently coach and some formal training or mentoring. Coaches in this study also had many hours of coaching experience prior to becoming high performance coaches. The team sport coaches had the common thread of prior leadership experience (e.g., being a team captain as an athlete).

Nash and Sproule (2009) interviewed nine expert coaches to explain how they became expert coaches. The themes that emerged in the coaches’ explanation for how they developed into experts included experience, knowledge, personal characteristics, networking and philosophy were. While experience as a coach has been a commonly identified factor supporting coaching development, little is known about the specific details of this (developmental) experience. In fact, criteria for identifying expert coaches have often been studied, yet how personal characteristics might relate to coaching skill development has received much less attention. Indeed, there may be characteristics of a coach critical to the development of expertise that are not as important once a coach becomes an expert. The present research focuses on both of these issues.

Abraham et al. (2006) argue that further research is needed in relation to how coaches develop their expertise. This is necessary to build programs that effectively foster coach development (Abraham et al.). The present study investigates how coaching expertise develops, as viewed by a group of elite coaches and athletes. In summary, the purpose of the current study was to elucidate definitions of expertise and to explore the developmental process involved in becoming an expert coach.
Methodology

The qualitative research approach used was in the tradition of grounded theory (Glaser & Strauss, 1967). Grounded theory research seeks to discover a theory that is “grounded” or emerges from the data (Glaser & Strauss). The current study lent itself to such an analysis since literature on the development of coaching expertise requires more exploration.

Participants

To provide richness of data purposeful sampling was utilized to select study participants (Patton, 1990). The participants in this study were eight Canadian, university level or higher coaches (representing both team and individual sports) and seven Canadian, varsity level or higher competitive athletes (both team and individual). All of the coaching participants were head coaches. It was decided to interview elite athletes along with coaches since it was felt that the athletes would provide a unique (and informed) insight into coaching expertise. University-level coaches were selected because they exhibit the characteristics of expert coaches that have been used in previous coaching studies (e.g., have coached for 10 or more years, have lead athletes to national level or higher) (e.g. Horton et al., 2005; Côté et al., 1995; Côté & Sedgwick, 2003) and they represent a diversity of sports, as well as representing male and female teams.

The coaches had a mean of 26.8 years of experience as coaches. One coach in this study was National Coaching Certification Program (NCCP) Level 5 certified, five coaches were Level 4 certified, one coach was Level 3 certified and one coach did not provide his NCCP level since he did not feel that NCCP qualifications were important. The National Coaching Certification Program is the coaching certification program in Canada. Five of the coaches have coached international competitors (one has coached Olympic and World Champions, one had coached World Champions and Olympic medallists), two of the coaches had coached professional athletes and one had coached National university champions. The coaches had a mean of 13.3 years of experience as athletes in the sport they currently coach (experience accrued prior to commencing coaching). Their athletic experience ranged from Olympic competitor to Professional athlete to NCAA participant. Seven of the coaching participants were male and one was female.

The athletes came from a variety of sports (rowing, n=2; synchronized swimming, n=1; rugby, n=1; wrestling, n=1; cross-country running, n=1; and swimming, n=1) and had accumulated a mean of 10.0 years of experience in their sport. All of the athlete participants had competed at the international level and had had a mean of 9.1 coaches in their careers. This number is important since the experience that the athlete participants have had with coaches provided a rich context on which to base their comments. Six of the athlete participants were
female and one was male. The coaches represent six sports: rowing, n=2; football, n=2; ice hockey, n=1; cross-country running, n=1; wrestling, n=1; and rugby, n=1.

The gender breakdown was not something of concern as there was no a priori sense that gender made a difference in expertise development. We interviewed the coaches at our disposal. At the time the interviews were done there were only two female head coaches of any varsity team at our university. These coaches were strategically chosen because of the background understanding they would have for the development of expertise in coaching and their lengthy educational and academic experiences.

**Procedure**

In-depth, semi-structured interviews were utilized to elucidate the qualities of an expert coach and to delve into the process of coaching expertise development. The coaches were recruited via email by the research team. The coaches email addresses were accessible by the research team on the university website. The athletes were also recruited via email. Since all of the athletes were students at the time of the interview, their email addresses were found on the university website. Some of the athletes were recommended by the coaching participants in the study. Others were sought out due to their elite status and past athletic success. Once recruited to participate in the study, the participants completed a short demographic questionnaire to provide background information on his/her involvement in sport. A different questionnaire was used for coaches and athletes. The participants were sent the interview guide via email so that they could consider their answers prior to arriving to the interview. Upon arrival at the interview, the participant was briefed on the purpose of the study. At this time, the participants read the letter of information on the study (if they had not read it prior to arriving) and signed a consent form. The interviews lasted approximately fifteen to sixty minutes (the coach interviews typically lasted longer than the athlete interviews) and were recorded with a Sony Voice Recorder. Interviews were later transcribed verbatim. Ethical approval for the study was obtained through the University of Western Ontario ethics board.

**Interview**

The main interview questions were as follows: How would you define an expert coach? Can someone who coaches development level athletes be considered an expert coach? How can we identify an expert coach? What does it take to become an expert coach? Probes and follow-up questions were utilized to ensure richness of the data. A commonly used probe question that was directed to the coaches was: how do you think you became an expert coach? Other common probes consisted of: Can you give any specific examples of a coach that you think is an expert? Can you think of any skills that an expert would have or any attributes or
characteristics that could someone could identify? Athletes were often asked to compare coaches who they perceived to be an expert versus a less skilled coach they had during the course of their career and asked to comment on the attributes and skills of both.

Analysis

The interviews were analyzed inductively, ensuring that the categories that emerged came from the data. The inductive analysis process began with open coding to identify meaning units (Glaser, 1992). A meaning unit has been defined by Tesch (1990) as “a segment of text that is comprehensible by itself and contains one idea, episode or piece of information” (pg. 116). The transcripts were read several times then each meaning unit was highlighted in the text. The following excerpt from the interview transcript of a coaching participant in the current study illustrates how the coding process began. The paragraph from the transcript is as follows: ‘My quiet time when I do this is when I’m driving my car to the, to a workout...it’s about a 15 minute drive. Um, I’ll visualize or think about things that may come up, incidents or things like that and then I think about how I’ll react to it...and that’s in my mind, part of being an expert coach’. The research team extracted the following: ‘I’ll visualize or think about things that may come up, incidents or things like that and then I think about how I’ll react to it’ since it was a separate thought. The extracted text was copied to another word document and compared to other bits of extracted text to determine sub-categories and categories. This particular meaning unit contributed to the sub-category of visualization in the internal feedback category of feedback under the topic coaching development. This process is referred to as the constant comparative method. Two researchers read four interview transcripts and independently developed a preliminary coding scheme that identified meaning units through open coding (based on line-by-line analysis of the interview transcripts; Glaser, 1992). The researchers discussed any disagreements in the coding scheme and made changes where necessary. The first author then inductively analyzed the remaining interview transcripts and revised the preliminary coding scheme as new categories emerged. She discussed these changes with the second author as they arose. The same coding scheme was utilized for both the coach and athlete data.

The interview transcriptions were prepared with Microsoft Word and saved. The meaning units were highlighted and moved to a separate document where they were arranged into sub-categories and categories. A copy of the transcripts including each labelled meaning unit was saved and stored.

Steps to Ensure Trustworthiness of Data Analysis

The first author of the study had 12 years of coaching experience at the time the study
was undertaken. It is possible that this could have affected the researcher’s analysis of the data since she may have assumptions and biases regarding the coaching process and coaching development. For this reason, it was important that reflexivity (also known as self-awareness or self-reflection) was used throughout the analysis. A method of doing this is by analyzing and discussing the data frequently as a research team (Morrow, 2005). A further step taken, as reported above, was to seek the feedback of the participants of the study. This is referred to member (or participant checking) (Morrow). Member checking was done in two ways. The interview transcripts were sent to all of the participants. They were told that they could make changes to their answers if they felt that their intended responses to the interview questions were not apparent. They were also sent a copy of the results and asked to provide feedback. None of the participants made changes to their interview transcripts, nor did any provide feedback that resulted in a change in the analysis of results. Three of the participants changed the wording of the quotes that were selected from their transcripts to be used in this manuscript. A final step taken was to utilize the responses of both coaches and athletes. This is a method of triangulation. Agreement between coaches and athletes gives more validity to the responses of both groups.

Results

The total number of meaning units identified in the interview transcripts was 469. The athletes provided 198 meaning units and the coaches provided 271 meaning units. The analysis of the data revealed three main topics: descriptors of expert coaches, identifiers of expert coaches, and development of coaching expertise.

Two main categories of identifiers of an expert coach emerged: reputation and observable athlete performance/skills. Descriptors of expert coaches elicited eight categories: athlete/coach interaction, athlete performance, knowledge, type of expert, duties of an expert, personal characteristics of the coach, experience, and level of athlete the expert coach coaches. Finally, the development of coaching expertise elicited five main categories: personal characteristics, time, adaptation process/experience, environment and opportunity. Quotes are included to give insight into the participants’ responses. Coach quotes are identified with a “C” and the participant number; athletes are identified with an “A” and the participant number.

Since several of the categories of identifiers and descriptors have been found in previous research, only novel findings, or findings that are conducive to a research definition of an expert coach without use of tests or various other measures, are detailed in the results section below. Further research is needed to investigate how we can devise objective measures to identify expert
Table 1. Number of Meaning Units for Each Category and Number of Participant Contributions to Each Category

<table>
<thead>
<tr>
<th>Identifiers of an Expert Coach</th>
<th>Number of Athlete MUs</th>
<th>Number of Coach MUs</th>
<th>Athlete N</th>
<th>Coach N</th>
<th>Total N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reputation</td>
<td>6</td>
<td>32</td>
<td>3</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td>Peer Recognition</td>
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<td>9</td>
<td>0</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Athlete Recognition</td>
<td>3</td>
<td>17</td>
<td>2</td>
<td>5</td>
<td>7</td>
</tr>
<tr>
<td>Parental Recognition</td>
<td>0</td>
<td>2</td>
<td>0</td>
<td>2</td>
<td>2</td>
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<tr>
<td>Media/Public Recognition</td>
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<td>2</td>
<td>0</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Observable Athlete Performance/Skills</td>
<td>0</td>
<td>11</td>
<td>0</td>
<td>4</td>
<td>4</td>
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</table>

<table>
<thead>
<tr>
<th>Descriptors of an Expert Coach</th>
<th>Number of Athlete MUs</th>
<th>Number of Coach MUs</th>
<th>Athlete N</th>
<th>Coach N</th>
<th>Total N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Athlete/Coach Interaction</td>
<td>40</td>
<td>7</td>
<td>0</td>
<td>0</td>
<td>0</td>
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<tr>
<td>Feedback Given</td>
<td>11</td>
<td>0</td>
<td>4</td>
<td>0</td>
<td>4</td>
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<td>Relationship with Athlete</td>
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<td>4</td>
<td>2</td>
<td>6</td>
</tr>
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<td>Treatment of Athlete</td>
<td>23</td>
<td>5</td>
<td>6</td>
<td>3</td>
<td>9</td>
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<tr>
<td>Athlete Performance</td>
<td>6</td>
<td>17</td>
<td>4</td>
<td>6</td>
<td>10</td>
</tr>
<tr>
<td>Knowledge</td>
<td>32</td>
<td>59</td>
<td>0</td>
<td>0</td>
<td>0</td>
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<tr>
<td>Procedural Knowledge</td>
<td>12</td>
<td>22</td>
<td>4</td>
<td>7</td>
<td>11</td>
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<tr>
<td>Declarative Knowledge</td>
<td>20</td>
<td>37</td>
<td>7</td>
<td>7</td>
<td>14</td>
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<td>Type of Expert</td>
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<td>11</td>
<td>0</td>
<td>0</td>
<td>0</td>
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<td>Generalist</td>
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<td>4</td>
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<td>Specialist</td>
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<td>6</td>
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<td>1</td>
<td>2</td>
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<tr>
<td>Duties of an Expert</td>
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<td>4</td>
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<td>Personal Characteristics</td>
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<tr>
<td>Coaching Style</td>
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<td>5</td>
<td>4</td>
<td>9</td>
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<tr>
<td>Coaching Philosophy</td>
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<td>1</td>
<td>4</td>
<td>5</td>
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<tr>
<td>Open-Minded</td>
<td>10</td>
<td>15</td>
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<td>4</td>
<td>7</td>
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<td>Personal Traits</td>
<td>16</td>
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<td>7</td>
<td>4</td>
<td>11</td>
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<tr>
<td>Experience</td>
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<td>8</td>
<td>1</td>
<td>1</td>
<td>2</td>
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<tr>
<td>As a coach</td>
<td>7</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>7</td>
</tr>
<tr>
<td>As an athlete</td>
<td>3</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>4</td>
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<tr>
<td>Level of Athlete</td>
<td>8</td>
<td>17</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>All levels</td>
<td>3</td>
<td>7</td>
<td>3</td>
<td>6</td>
<td>9</td>
</tr>
<tr>
<td>Just elite</td>
<td>5</td>
<td>10</td>
<td>3</td>
<td>6</td>
<td>9</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Development of an Expert Coach</th>
<th>Number of Athlete MUs</th>
<th>Number of Coach MUs</th>
<th>Athlete N</th>
<th>Coach N</th>
<th>Total N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Personal Characteristics</td>
<td>20</td>
<td>21</td>
<td>5</td>
<td>7</td>
<td>12</td>
</tr>
<tr>
<td>Time</td>
<td>10</td>
<td>11</td>
<td>4</td>
<td>7</td>
<td>11</td>
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<tr>
<td>Adaptation Process / Experience</td>
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<td>50</td>
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<td>1</td>
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<tr>
<td>Experience as a player</td>
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<td>5</td>
<td>3</td>
<td>4</td>
<td>7</td>
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<tr>
<td>Experience as a coach</td>
<td>3</td>
<td>11</td>
<td>2</td>
<td>6</td>
<td>8</td>
</tr>
<tr>
<td>Feedback-Internal</td>
<td>0</td>
<td>9</td>
<td>0</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Feedback-External</td>
<td>1</td>
<td>5</td>
<td>1</td>
<td>6</td>
<td>7</td>
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<tr>
<td>Active Knowledge Acquisition</td>
<td>7</td>
<td>11</td>
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<td>Opportunity</td>
<td>0</td>
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<tr>
<td>Environment</td>
<td>0</td>
<td>4</td>
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</tbody>
</table>
coaches. Table 1 includes each category and sub-category that emerged from the inductive analysis of the interview transcripts. The number of meaning units for both coaches and athletes are reported, as well as the number of coaches and athletes (N) whom contributed to each category and sub-category.

**Descriptors and Identifiers of an Expert Coach**

Two main categories of identifiers of an expert coach emerged: reputation and observable athlete performance/skills. Descriptors of expert coaches elicited eight categories: athlete/coach interaction, athlete performance, knowledge, type of expert, duties of an expert, personal characteristics of the coach, experience, and level of athlete the expert coach coaches.

**Reputation**

The reputation of the coach amongst various groups emerged as a method of identifying an expert coach. The finding among the elite group of coaches and athletes interviewed in this study is that peer (other coaches) and athlete recognition are integral in deciding whether or not one is an expert coach. As the following quote illustrates, one of the coaches in this study indicated that as athletes have direct contact with coaches, they would have valid opinions as to whether or not the coach is an expert:

> I would take into account that athlete’s perception of that coach because the coach is working directly with that athlete and only truly the athlete would know if they are getting what they need in a way out of the coach because you have to be in a position to know what you need (C5).

To a lesser degree, the parents of youth athletes could be used to verify a coach’s reputation: “probably with younger athletes, feedback from parents would be suitable” (C1).

**Athlete Performance**

Athlete performance indicators are a typical criterion used in coaching expertise studies. These indicators, as described by our study participants, include: success, win/loss record, winning National or International events, consistency of good results, record breaking performances, number of athletes on a National team or Olympic team, good results in more than one environment (i.e. at different universities or different training sites), and the number of “good” athletes in the program. As coach 4 indicated, “you can’t be an expert unless you have consistency of good results”.
Type of Expert

An interesting finding is that most of the coaches who participated in this study identified a generalist and specialist as two possible expert coaching descriptors. Both types can be considered an expert coach but they have different knowledge bases and skill sets. A generalist is good at a variety of tasks: “There are some coaches who I would call expert coaches who are more generalists…so they’re good in a lot of areas” (C1). A specialist is an expert in a particular area of coaching:

You can be an expert in learning, in teaching someone the sport, the technique of the sport and you can be an expert in bringing someone up and you can be the expert in national teams and you can actually be the expert in individual counselling (C2).

Experience

With the distinction of expert comes some required coaching experiences: has extensive coaching experience with a variety of age groups and levels (“I think you have to have taught a lot of different levels because I don’t think you can only have taught 30 year olds and be able to say I’m a good teacher” C7) and has coached high level athletes. Experience as an athlete was also identified as integral. The finding was that the coach should have participated in the sport at a high level but not necessarily the most elite level (“I believe that an expert coach has to have played at a high level as the higher level you’ve played, the better understanding you have of what its like to get there” C7).

Level of Athletes the Coach Coaches

The level of athletes the coach coaches reflects the notion that an expert can coach athletes at a variety of different levels in sport. Several of the participants indicated that an expert coach does not necessarily have to coach the highest level of athlete. The sentiment is that if one does an outstanding job at a lower level, one can still be considered an expert. For example, coach 3 responded as follows: “I think that there are some people who work with lower levels who probably are expert coaches but they probably haven’t been given the recognition or notoriety that usually goes hand in hand with being acknowledged as an expert”. The results indicated that there were ideas counter to this response. Some participants feel that one must coach elite athletes to be considered an expert. One athlete recommended that:

I think you’re not really an expert until you’re working with the top so I think I’d say they are probably a good coach but not an expert if they are working with elite athletes who are not at the top of their game (A3).
Development of Expert Coaches

One purpose of this study was to begin to create a model that describes how coaches develop their expertise. The development of coaching expertise elicited five main categories: personal characteristics, time, adaptation process/experience, environment and opportunity. The components that emerged and will first be explained and then the model will be described in terms of linkages between the components in the discussion section.

Personal Characteristics Supporting Development

It can be seen in Table 1 that a list of personal characteristics of the coach emerged both in identifying coaches whom are already expert coaches as distinct from those characteristics deemed necessary to support coaching expertise development. The latter are highlighted here.

The participants suggested that drive and passion are necessary for one to develop into an expert coach. The following quote illustrates this example:

I think an underlying drive and passion to become the best... I think if you want to be an expert coach you want to have the drive to win just as an athlete does and the underlying passion to always become better and the drive to be disappointed when your team doesn’t win.

(A2)

Dedication and commitment were also identified as necessary personal characteristics for the development of coaching expertise. Athlete 3 illustrated the importance of dedication in expert coaching: “somebody who’s obsessively dedicated to their sport...”. It was suggested that being empathetic to athletes and being a people-person helps a coach develop into an expert. Open-mindedness was mentioned several times as a necessary characteristic to facilitate coaching development:

I think you have to always keep an open mind for change, whether it’s changing technical things or the game’s changing, changing rules over the last number of years, certainly the equipment has changed and the players change and so if you don’t keep up with the innovations or the technologies that are coming along then certainly I think some of the coaches who don’t keep with the game see the game sort of pass them by (C7).

Open-mindedness was defined by the study participants as: a coaches’ willingness to learn, willingness to accept criticism, willingness to listen to others, willingness to advance with the changing times, willingness to recruit resources to assist him/her in areas where he/she is weak and being a good listener.
Time

The participants in this study highlighted the importance of time in the development of coaching expertise (“you can’t do it in a New York minute” C3). The notion is that coaching needs to be a full-time occupation if the coach aspires to become a true expert (“it has to be an avocation, I think, which is harder, obviously for someone who is not a full-time coach” C4) and that a lot of time has to be spent working with athletes. However, a timeline was not given; our participants did not suggest a minimal amount of time necessary to become an expert.

Adaptation Process/Experience

This category has four sub-categories: experience as a player, experience as a coach, feedback (external and internal) and active knowledge acquisition. Experience as a player includes: experiences with past coaches and basic knowledge gained about the sport as a player:

I saw a lot of things in my own experiences as a player, things I didn’t want to be, the way I didn’t want to coach as examples from people who I had and yet there were many positive examples that I tried to emulate and incorporate into my own coaching (C8).

Experience as a coach includes: experience with different levels and age groups, trial and error and learning from experiences in order to improve as a coach. The following quote represents what experience can do for a coach:

I notice with a lot of older coaches, they are often in tense situations or under scrutiny and they act very calmly and they seem to have a ready answer. I watch them and I think they’ve done this so many times before they’ve probably already answered that question or a similar question. They are almost like a computer, they process a perfect answer” (C1).

Feedback comes from both external and internal sources. External feedback is received or sought from mentor coaches, athletes and other sources. For example, A6 said: “The willingness to get feedback from other people to be able to improve yourself, never being satisfied with your level of knowledge and constantly working to improve it”. Mentoring was identified as an important tool in becoming an expert as C5 indicated: “Becoming an expert in anything, you have to have some coaching in doing it”.

Internal feedback (or introspection) is achieved through a coach’s self-analysis and visualizations of situations (“If I think about myself, what I do, is I constantly self-analyze… I’ll visualize or think about things that may come up, incidents or challenges and then I think about how I’ll react to them” C1). With this type of feedback a coach will look within to identify his/her own strengths and weaknesses and ponder what he/she needs to do to improve (“dealing with the objectives that you have as a coach and constantly re-assessing and re-evaluating those
things and philosophically adjusting and moving forward” C3).

Knowledge acquisition includes on-going education (e.g. attending conferences, upgrading certifications, talking to other coaches and reading) and deliberate expertise development (deliberately seeking learning experiences in order to improve). This category also includes observational learning (“…for example when I was young I was way too careful. I learned by observing other coaches’ programs and you can actually push much harder, so this is what I learned” C2). Self-teaching (“I think a lot of the top coaches are more self-taught than anything. You can’t really teach an expert coach in a classroom” A3) and learning characteristics that are of value to the coach are also a part of knowledge acquisition (“…and you have to also learn to become a leader” C2).

Opportunity and Environment

It was suggested that being given certain opportunities can assist one in becoming an expert: “it’s just luck that for example, I was given an opportunity here to coach and I had very little coaching background” (C5).

One participant suggested that the proper environment is necessary to become an expert: “You have to be in an environment that is conducive to producing athletes” (C6).

The aforementioned categories contribute to our preliminary conceptual model of coaching expertise development. How these categories interact and form a model will be discussed further in the next section of the paper.

Discussion

The goal of this study was two-fold. The first was to elucidate a definition of an expert coach elicited by elite coaches and athletes that could be used in scientific research on expert coaching. The second objective of this study was to delineate what elite coaches and athletes believe is necessary for a person to develop into an expert coach.

Descriptors/Identifiers of an Expert Coach

The current study suggests that there are several factors that have been overlooked in defining what an expert coach is, although some of our findings are in accordance with past literature. Researchers often rely on other coaches to identify expert coaches to be studied (e.g., Cote & Sedgwick, 2003). The current results agree with the prior research as peer recognition
emerged as a method of identifying an expert coach. The suggestion among the elite group of coaches and athletes interviewed in this study is that athlete recognition is also integral in deciding whether or not one is an expert coach. To our knowledge, no studies have been done on expert coaches that utilize the athletes’ opinions in identifying expert coaches.

Several sub-categories of knowledge emerged that have been identified in the literature as being essential for an expert coach (e.g., sport science, sport-specific). For example, Cote et al. (1995) suggested that a method to obtain such knowledge is through coaching certification and formal education. An interesting finding from the present research is that most of the coaches identified a generalist and specialist as two possible expert coaching scenarios. This breakdown into generalist and specialist suggests that research and practice needs to start identifying and defining at where a coach’s expertise lies. For example, a coach may be quite skilled in teaching the athletes but have deficits in the ability to plan for their athletes. At the very least, we are suggesting that researchers identify the areas of coaching expertise they are studying (generalist or specialist, game strategist or developer of athletes, etc.) Since our results suggest that they have different knowledge bases it would also be useful to broaden the study of coaching expertise and begin to study assistant coaches who may, in fact, be more skilled at a particular aspect of the sport than the head coach.

The level of the athlete an expert coach works with does not agree with past research on expert coaches. Typically, only coaches who coach at the highest levels of sport have been selected as study participants (e.g., Horton et al., 2005; Cote et al., 1995; Cote & Sedgwick, 2003; Bloom et al., 1999; Gilbert et al., 2006; Erickson et al., 2007). Our results suggest that one can be considered an expert at different levels of competitive sport. Studies of experts at lower levels of sport could be useful for coaching education initiatives. As our participants suggested, there are specific forms of knowledge required for each different age group/competitive level. For this reason, it would be fruitful to study expert coaches at several levels of athlete so that we can gain insight into what is required for the most effective athlete development.

**Suggestions for How to Define Expert Coaching in Future Studies**

Some of our results are in agreement with the current method of identifying expert coaches found in coaching literature. Peer recognition, athlete or team success, experience and level of athlete the coach works with are all commonly seen in coaching expertise studies. As we have already mentioned, Côté et al. (1995) defined expert coaches from their grounded theory research of expert gymnastic coaches by the following criteria: a minimum of 10 years of coaching experience, all coaches had to have competed at the provincial, national or international level, had to have developed at least one international and two national level gymnasts, and the
coaches had to be recognized by the national coach as being one of the best at developing elite gymnasts. We propose that some other indicators be added to the list- athlete recognition of coaching expertise and type of coach (head coach versus assistant coach) would be useful indicators.

We must also re-examine what our idea of an expert is. Our study participants, for the most part, do not believe that expert coaches only work with the most elite athletes. One could be considered an expert with certain age groups and/or levels and we should not discount these coaches. Only a small percentage of coaches’ work with elite athletes and what these coaches have undergone to develop may not be the same as coaches of junior level or developmental athletes.

The following is our suggestion for criteria to be used in future studies on coaching expertise. Coaches must have: 10 or more years of experience (as per Ericsson, Krampe & Tesch-Römer’s 1993, research); be recognized by peers (other coaches) as experts; be recognized by athletes as experts; have successful athletes/teams at any level of competition (researchers to provide a rationale for studying coaches at a certain level).

Researchers should also identify the type of coach or area of coaching expertise being studied. In keeping with the tradition of studying expertise, we suggest that research in coaching expertise would benefit by being more specific. In the Ericsson et al. (1993) study, the musicians being studied all played the same instrument. The level of athlete the coach was in the past may be a criterion but according to our results, the coach need not have been an elite athlete. For this reason, we do not agree with coaches being excluded from a study due to a lack of competitive experience. Côté et al. (1995) made a provision that two of the coaches in their study had not competed at the required level for the study but allowed the coaches to participate since they had accumulated fifteen and seventeen years of coaching experience. They posited that the extra coaching experience compensated for a lack of competitive experience. The converse assumption has also been made by Horton et al. (2005). The group interviewed a coach with less than ten years of coaching experience because the coach had extensive experience as an athlete. While we agree that athletic experience contributes to coaching expertise, the assumption made by these authors does not agree with the theory of deliberate practice in that athletic experience may not be experience within the domain of coaching.

**Development of Coaching Expertise**

Personal characteristics emerged as a method of describing what an expert coach is (essentially the outcome of the expertise development process), but, also, the category emerged when the participants were asked how expertise develops. Based on our findings, it seems as
though there are some essential personal characteristics that are required for one to develop into
an expert coach. Personal characteristics also emerged in a study by Nash and Sproule (2009)
that sought to explain coaching expertise development. An open question is whether these
characteristics are innate or learned.

An interesting finding in this study was the characteristic of open-mindedness. It was
reported to have a significant impact by both coaches and athletes. The concept of being
open-minded (as an outcome) was identified as a characteristic of expert coaches in a study by
Vallée and Bloom (2005) but was not discussed. The notion of expert coaches being
open-minded has also appeared in studies by Werthner and Trudel (2006) and Jones, Armour and
Potrac, 2003 but was not related to the expertise development process.

Research in the field of psychology on mindsets can be useful to explain how
open-mindedness can be integral for coaching development. Fujita, Gollwitzer and Oettingen
(2007) studied how mindsets affected recognition memory. A deliberative mindset allows for
open-minded processing of incidental information while an implemental mindset lends itself to
closed-minded processing. One with a deliberative mindset is more receptive to all sources and
types of information. Fujita et al. posit that in order to make good decisions, one must be open
to all available information. The implemental mindset is more selective. A coach, for example,
with this type of mindset will filter all information that he/she does not feel is relevant. The
study showed that participants with a deliberative mindset recognized whether they had previously
seen incidental words on a recognition task quicker, and with greater accuracy, than those with
the implemental mindset. In other words, the open-minded mindset allows for a quicker access to
memory and thus a quicker response.

Fujita et al. (2007) posited that a deliberative mindset allows one to be more receptive and
open to all available information and will positively affect decision making in that one will be
more informed. Abraham et al. (2006) have highlighted the fact that coaching research typically
finds coaching to be a decision-making process and decision-making by coaches was widely
discussed by Lyle (2002). The developmental role of open-mindedness will be expanded on
below, as it appears integral to the process suggested by the present participants to promote the
development of coaching expertise.

In accordance with the deliberate practice literature (see Ericsson et al., 1993), the
participants in this study highlighted the importance of time in the development of coaching
expertise. Both coaches and athletes recognized the importance of time to experience many
different situations and athletes in order to develop their skills and knowledge. Along with time,
however, several interesting factors emerged in the adaptation process/experience category.

It was reported by our study participants that the coach combines the knowledge gained as
a player and with past coaches with the experiences he accumulates as a coach. The time spent
as an athlete is a time when future coaches learn the specifics of the sport but they can also learn about the coaching process. As mentioned by one of our study participants, he tries to emulate some coaches he has had and counter to that, he avoids teaching methods or behaviours that he did not find beneficial to athlete development. Past experience as an athlete has been widely mentioned in past studies as being important (Cushion, Armour & Jones, 2003). In addition to the developmental role, our study participants indicated that they have empathy toward their athletes as a result of their experience as an athlete.

A property of the coaching experience category was learning through trial and error during which the coach will learn from successes as well as mistakes. This learning will in turn affect future decisions that a coach makes. This process has been identified in previous literature as central to the developmental process (e.g. Abraham et al, 2006; Jones et al., 2003; Cushion et al., 2003; Irwin, Hanton & Kerwin, 2005) so it is not surprising that this was mentioned by our coaches and athletes. Expert coaches also seek or accept feedback from external sources in order to improve. One such source is interaction with a mentor coach which has been identified in past literature as integral to coaching development (for instance, Nash & Sproule, 2009). Mentor coaches facilitate growth but a coach that mentors others will also learn from this experience (Jones et al. and Lee, 2007).

Participants in the current study cited past coaches as their main source of mentorship. Another external source that was identified in the present study was feedback from athletes. Past research has discussed the ability of the coach to give feedback but has not discussed the usefulness of the coach seeking and receiving feedback from the athlete in order to improve as a coach. Lyle (2002) mentioned feedback in his proposed coaching model but not in great detail. It would seem logical that the value of athlete feedback would be at least partially determined by the level of athlete being coached.

According to our study participants internal sources of feedback occur via introspection. It has been suggested that the process of reflective practice requires introspection (Lyle 2002). Reflective practice was introduced by Schön (1983) and has been studied in a wide variety of professional avocations (e.g. nursing). It was suggested by Knowles, Gilbourne, Borrie and Nevill (2001) to be a useful method for coaches to develop their skills. Irwin et al. (2005) studied an elite group of gymnastic coaches and purported that these coaches did, in fact, learn by using reflective practice. A key finding in our study is that our group of elite coaches have illuminated the importance of being introspective and this opens the door to reflection. A product of this process is that the coach will identify his strengths and weaknesses as a coach and may seek out assistant coaches to provide strength to the area where he is lacking. Ericsson et al. (1993) have purported that to become an expert in a given domain; the performer must be given feedback on performance, particularly on strengths and weaknesses, to improve. Coaches are the main source
of this feedback for their athletes, and according to the present study, coaches are also responsible for doing this for themselves as well.

Another sub-category was titled active knowledge acquisition. According to our study participants, those who want to become (or have become) experts must engage in on-going education. This has been highlighted in previous studies on expert coaches (e.g., Hardin, 2000). On-going education (in this study) has been defined as reading, attending conferences, upgrading certification and talking to other coaches. Other sources of knowledge acquisition are: observational learning (mainly of other coaches) and the coach identifying potentially fruitful activities for learning and engaging in them (deliberate expertise development). An example of this would be taking a class or attending a seminar.

Observational learning (learning as a result of observation of another coach) has been reported as a useful method for athletes to learn (Wesch, Law & Hall, 2007) and it has been shown that coaches learn from observing other coaches (Jones et al., 2003, Cushion et al., 2003). This is another interesting finding that should be studied further. Observational learning can be differentiated from mentorship in that the coaching participants in our study simply said that they watch other coaches (not necessarily just in their sport) and learn just from watching. There is no interaction with the other coach in this case, whereas in mentorship interaction is the benchmark.

The coaches in the present study also seek out learning opportunities that will lead to their improvement. In line with this, the coaches will often teach themselves if they have identified a topic/area that they need to learn more about. Further to this, the coaches may learn that there are certain characteristics or behaviours that would be advantageous to add to their coaching skills. For instance, a coaching participant in this study suggested that coaches must learn to become leaders. In addition, opportunity and environment were found to aid in the expertise development process. The training environment appears to be essential for development.

Upon examination of the categories that emerged for the development of coaches, there are definite linkages that can be made to suggest a preliminary model for coaching expertise development. We can start with personal characteristics of the coach. A coach whom is open-minded will be willing to seek feedback from external sources and be willing to look within (introspect) and self-analyze, and also seek out assistance for perceived weaknesses. An open-minded coach will also be open to learning new things and will seek out various learning opportunities. Drive, passion, dedication and commitment will ensure that the coach puts the necessary time into learning his craft. Being empathetic to athletes will facilitate the coach’s need to seek feedback from them. Introspection relates to open-mindedness in that an open-minded coach will be willing to determine where his or her strengths and weaknesses lie. An open-minded coach will use this information to bring resources to his weaknesses.
The comments made by study participants suggest that coaching development is largely a self-adaptive process. The coach is responsible for his own development and must make his own decisions regarding how to best do so. Abraham et al. (2006) have suggested that a coach’s development occurs via serendipitous methods, without structured programmes. This can be contrasted to how an athlete develops: a coach tends to direct how often the athlete trains, the activities the athletes engages in, the intensity that the athlete trains at, and so on. Schempp, McCullick, Busch, Webster and Mason (2006) suggest that expert coaches “self-monitor”. The coaches monitor themselves regularly in order to develop their craft. Schempp et al. found that experts monitor: skills, knowledge base, personal characteristics, philosophy and tools (i.e. use of new equipment). The results from the current study supports this notion.

Werthner and Trudel (2006) presented Moon’s (1999, 2004) generic view of learning as a method for how coaches learn to coach and identified three types of learning situations: mediated, unmediated and internal. Mediated learning situations are externally driven, unmediated learning situations are internally driven by the coach and internal learning situations are essentially episodes of self-reflection. An example of a mediated learning situation would be formal coach training clinics and an unmediated learning situation would be when a coach decides to seek out a mentor coach for advice. Internal learning situations occur when the coach reflects on his/her performance and questions his/her current knowledge base. All three situations were identified as valuable sources of knowledge acquisition.

The authors of the previous study suggested that coaches will create their own learning situations and are reflective in the interest of learning. Results from the current study suggest that this is indeed an integral part of the coaching development process. Our study participants identified mediated learning situations such as upgrading National Coaching Certification Program certification and attending coaching conferences. Unmediated learning situations identified in the present study expands on what Werthner and Trudel (2006) purported; coaches will seek out mentor coaches for advice but they will also seek advice from their athletes and others whom are intimately linked to their day-to-day coaching. Internal learning situations were also apparent in our results via introspection. The participants in our study discussed the importance of looking within, particularly to identify strengths and weaknesses.

**Summary of Discussion**

Our intent was to delineate a preliminary model for coaching expertise development. As mentioned before, the results suggest that coaches develop their expertise primarily through a self-adaptive process, meaning, the coach drives his/her development process. We start the process
of expertise development with personal characteristics of the coach. Certain personal characteristics appear to facilitate the process of expertise development: drive, commitment, dedication, passion, empathy for the athletes and open-mindedness. In essence, these personal characteristics serve as a filter that acts on the inputs into adaptation process. This process is circular and iterative. Drive, commitment, dedication and passion will allow the coach to put the necessary amount of time into development. The coach undergoes an adaptation process that involves experience as a player, experience as a coach, feedback (external and internal) and active knowledge acquisition (the coach seeks out learning activities that he/she feels will assist in his/her development). These processes can be thought of as inputs into the adaptation or learning process. External feedback could be from mentor coaches, peer coaches, the athletes, among other sources. Internal feedback occurs via introspection and was mentioned to be used for identifying strengths and weaknesses as a coach. This process can only occur if the coach has the opportunity to work with athletes and spend a large amount of time doing so. An environment that is conducive to development must also be present. The model is not static as the role of various aspects of the model may change over time.

Conclusions

The results from this study suggest that the current definition of what an expert coach is requires some modification. We need to look beyond the accomplishments the athletes have achieved and consider such factors as the level of athlete that is associated with an expert coach. It was suggested that one could be considered an expert at lower levels of sport. This should be of interest to those who study coaches of elite level athletes in the interest of developing coaching education initiatives. It would perhaps be more useful to study expert coaches at various levels of sport since the coach of elite athletes may operate very differently and have a different knowledge base than coaches of young, developing athletes. We also need to address the type of coach being studied. A head coach may be quite different than an assistant coach in their knowledge base and how they relate to athletes and they may have developed their coaching skills differently. Our work has provided suggestions in how we define an expert coach but more study is needed in this area. We encourage other researchers to contribute to this line of research so that consensus on a definition can be reached.

There are many avenues that require exploration when it comes to expertise development in coaches. The first is how the coach’s personal characteristics are developed (or if they are innate). The issue of open-mindedness seems rather critical as it can facilitate the coach’s learning in a variety of ways (e.g., the coach is willing to learn and willing to accept assistance
from others). Reflective practice has been promoted in the coaching literature but the notion of being introspective has received minimal attention. Since Lyle (2002) has suggested that being reflective requires introspection, the development of introspection should be studied further.

Coaches in this study suggested that they identify their own strengths and weaknesses. It would be useful to know how coaches do this. It would also be fruitful to investigate the sources of feedback a coach receives in more depth and what the coaches do to adapt to the feedback they have received. Another area in need of further study is if there is a difference in how team sport coaches’ versus individual sport coaches’ expertise is defined and developed. It is clear that more research is needed to clarify the processes involved in developing coaching expertise and our goal is to refine the preliminary conceptual model we have presented here. The end point of this line of research should be a more effective training program for coaches.

References


