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AN INVESTIGATION INTO HOW YOUTH ICE HOCKEY COACHES LEARN TO COACH AND THEIR USE OF THE INTERNET

by

Trevor Wright

THESIS

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Abstract

This is a descriptive study into how youth ice hockey coaches learn to coach. Based on Sfard's (1998) two metaphors of learning (acquisition and participation), this study aims to investigate formal training programs as well as informal experiences in which youth ice hockey coaches are involved with. This study also attempts to present how coaches use the Internet, which is currently a timely topic. Semi-structured interviews with 59 male youth competitive (A, AA, AAA) ice hockey coaches provided in-depth responses into a number of different learning experiences. The results of this study have made reference to seven learning contexts for youth ice hockey coaches including (a) coach education programs, (b) coaching clinics/seminars, (c) formal mentoring, (d) books/videotapes, (e) individual experience, (f) face-to-face interactions with coaches, and (g) the Internet. It is concluded that all seven learning contexts play an important role in the development of youth ice hockey coaches.

Introduction

> Successful coaches help athletes master new skills, enjoy competing with others, and feel good about themselves. Successful coaches not only are well-versed in the techniques and skills of their sports, they know how to teach these skills to young people. And successful coaches not only teach athletes sport skills, they also teach and model the skills needed for successful living in our society. (Martens, 1997, p. ix)

Coaching is considered to be highly dynamic and complex (Cushion, Armour, & Jones, 2003). Given the wide array of skills necessary to be successful, one would consider coaches to undergo some form of training. Given this, many sport organizations have developed formal coach education programs in different countries. Because of a number of political, cultural and economic values, there does not seem to be one consistent process for these programs around the world (Campbell, 1993). In most countries, coaching has a relatively low economic status that requires volunteers to donate their time and receive very little formal training. Furthermore, coach education programs are not mandatory in some countries (Campbell), meaning that many people are put into coaching situations without any formal training (Mackay, 1991).

Although some formal coach education programs seem to be appreciated by coaches (Gould, Giannini, Krane, & Hodge, 1990), their programs have often been criticized (Abraham & Collins, 1998; Cushion et al., 2003; Freeman, 1995). These programs usually take place in a classroom where a large amount of information is delivered in a short amount of time (Gilbert & Trudel, 1999). Furthermore, once a coach is certified, they are usually deemed ready to coach with no requirement to further their knowledge through ongoing development. This traditional approach assumes that learning is associated with acquiring something where the human mind is similar to a container that can be filled with materials (Sfard, 1998). Given this view of learning, coach education programs have concentrated on

what Sfard calls the acquisition learning metaphor, where expert (course conductor) delivers information to their students (coaches) who acquire knowledge. Beard and Wilson (2002) in a critique of the traditional approach to teaching provides a nice description of this process:

> It is the area of traditional education in which the delivery of abstract theoretical knowledge is delivered through a teacher, lecturer, trainer, or developer standing at the front and speaking or reading from a book that causes us most concern with some restricted forms of computer-mediated learning. What we are advocating here is the case that most aspects of learning will benefit from being linked to some form of experience. (p. 27)

Based on Cushion et al. (2003), now is the time to bring changes in our coach education programs: "if we are to develop imaginative, dynamic, and thoughtful coaches, we must widen the search beyond the 'usual suspects' of content knowledge that has traditionally informed coach education programs" (p. 216). This brings us to an important question: Besides formal coach education programs, are there other learning contexts that can provide coaches with opportunities to learn how to coach? In a few studies in which coaches were asked questions regarding where they have learned to coach, many of them indicated that learning through experience was more beneficial than taking formal coach education programs (Fleurance & Cotteaux, 1999; Salmela, 1995). Although experiential learning is vague and can mean different things to different people (Moon, 1999), it clearly shows that part of learning how to coach can happen outside of the classroom, through coaches' day-to-day activities. Gilbert and colleagues (Gilbert, Gilbert, & Trudel, 2001a, b; Gilbert & Trudel, 2001; 2004) conducted an extensive study on how model youth sport coaches learn to coach through experience. The results of their study indicated, among other things, that coaches have six options to help them generate strategies to solve coaching issues. Three of them were independent of coaching peers (coaching materials, creative thought, and coaching repertoire) and the other three were dependent on coaching peers (advice seeking, joint construction, and

reflective transformation). The importance that interacting with others seems to play in coaches' daily activities brings us to Sfard's (1998) second metaphor of learning; participation:

> The set of new key words that, along with the noun 'practice', prominently features the terms 'discourse' and 'communication' suggests that the learner should be viewed as a person interested in participation in certain kinds of activities rather than in accumulating private possessions. (p. 6)

Among the other contexts where coaches can learn to coach, we have to consider the Internet, which is changing the way people access information and communicate (Oostendorp, 2003). With a computer device and access to the Internet, users can navigate through the World Wide Web (Web), which enables easy access to a large amount of information on millions of Web sites. The Internet also provides users access to Computer-Mediated Communication (CMC) tools, which offer asynchronous (e.g., E-mail, Threaded discussion) and synchronous (e.g., Internet relay chat) interactions.

The increasing popularity of the Internet may only be the beginning of what the future of education will look like. Education programs are rapidly expanding to the delivery of online courses, and virtual universities (existing only on the Internet) are beginning to develop (Brown & Duguid, 1996; Owston, 1997). Formal coaching education programs will likely follow this trend (Davis, 1998), as indicated by the recent online coach education courses offered by the American Sport Education Program (ASEP).

According to Eklundh, et al. (2003), there is a growing amount of literature on the Internet, yet most of it is regarding technical issues and very little on how people actually use it. Although a few authors have recently written about what E-mail (Moss, 2003) and the Web (Davis, 1998; Hamilton, 1997; Wright & Trudel, 2003) can offer coaches, we have almost no information on how coaches actually use it. Regarding the methodology being used

in studies about the Internet, Eklundh et al. note that, "qualitative studies involving interviews or observations related to a specific work context are hard to find" (p. 99).

Maintaining the conclusions of Sfard (1998), both metaphors of learning (acquisition and participation) have their individual purpose and role. In her attempt to elicit between the two metaphors, Sfard concludes that it is important to try and live with both, since each has something to offer that the other one does not provide. This notion will be respected throughout this document, in regards to the learning contexts of coaches.

Considering that (a) formal coach education programs have been the main source of training for coaches, (b) these programs have been criticized (Abraham & Collins, 1998; Cushion et al., 2003), (c) coaches are saying that they learn through experience in day-to-day activities (Gilbert & Trudel, 1999), and (d) the Internet is changing the way people access information and communicate (Oostendorp, 2003), coaches may learn through different contexts, which corresponds with Sfards (1998) recommendation of considering both metaphors (acquisition and participation) when studying learning. Therefore, the purpose of this study is to present the specific learning contexts in which youth ice hockey coaches learn to coach. To do this, we have interviewed youth competitive ice hockey coaches. We asked them questions about learning through formal large-scale coach education programs, as well as their learning experiences outside of these programs starting when they were young athletes until their actual head coaching position. Finally, we asked coaches more specific questions concerning their use of the Internet for coaching purposes. From our perspective, this study is timely because people are talking about the professionalization of coaching (Lyle, 2002), which addresses the notion of developing a curriculum for their training. It is hoped that this

descriptive study on the different learning contexts and how coaches actually use the Internet will help designers of coach education programs in the future.

Review of Literature

A study on learning can be performed under different perspectives such as psychology, sociology, pedagogy, and so forth. Our study on 'learning how to coach' has been conducted while keeping in mind the actual debates, priorities, and trends within the field of sport pedagogy. Siedentop (1990) defines this field as a "practice which encompasses the scientific study of teaching and coaching, the preparation of teachers and coaches, and the content of what is taught by those teachers and coaches" (p. 274). Throughout this document, we will make reference as much as possible to the literature on sport pedagogy, but we will also make reference to literature from other fields when facing a shortage of research.

Our review of literature has been divided into three parts. First, we will present the literature on formal coach education programs with a special interest on the National Coaching Certification Program (NCCP) in Canada. In the second part, we will address the topic of 'learning from and with others', which usually occurs through the participation in daily activities. The work of different authors that promote this type of learning are presented and linked with related studies in sport pedagogy and in education. Finally, we will present the literature on various learning opportunities that are possible via the Internet.

Formal Coach Education Programs

In the mid to late 1970's, a sequence of formal coach education programs around the world was witnessed. Many national sporting organizations began a process of developing a curriculum to train thousands of youth sport coaches in their country. For example, the National Coaching Certification Program (NCCP) in Canada was developed in 1974, the American Sport Education Program (ASEP) in the United States was developed in 1976, the National Coaching Accreditation Scheme (NCAS) in Australia was developed in 1978, and

the National Coaching Foundation (NCF) in the United Kingdom was developed in 1983. Since their inception, coaches have been certified through courses in a classroom setting delivered by instructors who are considered to be experts.

Unfortunately, many coaches are not enforced by their national sporting organization to take these courses (Campbell, 1993). For example, the United States with one of the largest sporting programs in the world do not require all of their volunteer coaches to be certified under the ASEP. Although some individual sports in the United States have developed mandatory education for their coaches, such as USA Hockey, many other sports allow individuals to coach without any formal training. As a result, Freeman (1995) believes that the United States is behind many other countries in terms of coach education. While other countries are researching, developing, and testing their coach education programs, Freeman sarcastically addressed this issue in the United States: "we preferred to put on lab coats and test rats, rather than look at the vast opportunities for legitimate, valuable research in sport from children's sport through elite sport" (Freeman, p. 3).

In Canada, the NCCP was developed to provide quality training and certification to coaches (Coaching Association of Canada, n.d.). Until recently, the program has consisted of five levels (1-5), which range from coaching community, school, and club-based programs (level 1-3), to coaching high performance athletes (level 4-5). Since its inception, there have been a few assessments of the program (Haslam, 1990), and the NCCP is currently under a major re-development (Coaching Association of Canada). The traditional knowledge course based approach is undergoing a transition to a new competency based outcome approach, which certifies coaches based on the context that is appropriate for the athletes that they coach. The new approach has categorized these different coaching contexts into three streams

including (a) community sport, (b) competition, and (c) instruction. According to the Coaching Association of Canada, the changes to the NCCP should improve the program by (a) placing a greater emphasis on what coaches can "do", rather than "know", (b) certify coaches based on the environment that they work in, and (c) provide training to coaches based on their actual needs. Future research will be required to examine how this new approach is working with coaches across Canada.

The NCCP also has an agreement with many Canadian sporting associations, such as Hockey Canada, that allows them carry out their own sport specific training to certify coaches under the NCCP. Because of the re-development within the NCCP curriculum, the NCCP ice hockey program (under Hockey Canada) is also in transition to a new curriculum approach (Hockey Canada, n.d.). However, it is assumed that all coaches in this study will be trained through the existing program, which consists of five levels in a progressive order: (a) Coaching level, (b) Intermediate level, (c) Advanced I level, (d) Theory III, and (e) Advanced II level. Hockey Canada emphasizes that all coaches in organized minor hockey have their appropriate certification, which is monitored by regional minor hockey associations. The Coaching level course is designed for any coach (regardless of age or caliber) who is new to the NCCP, and consists of 14 hours (12 hours in the classroom, two hours on-ice). The Intermediate level is designed for coaches at the competitive level who have completed the coach level certificate, and is a total of 21 hours (17 hours in the classroom, four hours on ice). The Advanced I level is designed for coaches who have several years of competitive experience who wish to take a more structured and disciplined approach to hockey, and is a duration of 30 hours (26 in the classroom, four hours on ice). The Theory III course emphasizes the theoretical principles of coaching with specific attention to planning, sport

safety, skill analysis and development, mental preparation, and leadership. This course is usually taken with coaches from a variety of sports over a period of 28 hours all in the classroom. Upon completion of your Advanced I, Theory III, having at least seven years of coaching experience, and being currently a coach in a high performance program, candidates may be selected to complete their Advanced II level. This course extends on components from the Advanced I and Theory III, and takes place over the course of seven days.

Throughout the years, very few studies on the effectiveness of coach education programs have been conducted. According to Dickson (2001), the only one available was conducted by Gilbert and Trudel (1999). These authors performed a case study on a Peewee boy's hockey coach taking an NCCP level 2 theory coaching course, which today is equivalent to the Intermediate level course. Analysis of the data collected through interviews, videotapes, and stimulated recall interviews showed that the coach changed neither his decision-making approach nor his coaching behaviors after the course was completed. The authors provide two reasons to explain these results. First, the course was conducted in 14 hours and 40 minutes, which was seven hours short of the recommended course design. Therefore, the course conductor may not have provided all the information prescribed. Second, the coach revealed that he already possessed basic knowledge of many of the concepts in the course, and he noted that the course only helped to reinforce his method of coaching. Although it would be inappropriate to generalize this case study to the experience of other coaches in the course and even more with other large-scale coach education programs, this study shows that there may be a discrepancy between what a coach wants from a course, and what is the actual course content delivered.

Other studies outside of Canada have questioned the content that should be provided in their coach education programs. Through systematic observations of 128 coaches representing ten competitive youth sports in Finland, Liukkonen, Laakso, and Telama (1996) found that coaches emphasize the teaching of only sport skills. Since coaches are in a role model position to teach a variety of life skills, the authors assumed that youth sport as an educational experience is based on a traditional myth of the true meaning of sport. In their interpretation of these results, Liukkonen et al. (1996) declared that the training offered by their local sport organization would not be sufficient to change coaches' behaviors. Interestingly, McCallister, Blinde, and Weiss (2000), performed interviews with 22 youth baseball and softball coaches in the United States to identify the values that coaches deem important, and how they implement these values with their athletes. Although all of the coaches seemed to recognize the importance of teaching values and life skills, they were not adequately trained to teach them. In their interpretations, the authors pointed out that 17 of the 22 coaches believed they were adequately prepared to coach, yet none of them had any formal training. The authors suggest that more attention needs to be given to coach education programs, with an emphasis on proper selection, monitoring, and professional development of coaches throughout an entire season.

These studies bring up an often-debated issue regarding the purpose of youth sport. Should coaches be teaching only sport specific skills, or do they also have an obligation to teach various life skills important in a child's development? Hall, Slack, Smith, and Whitson (1991) attributed this controversial issue to a lack of one consistent youth sport system in Canada. The authors explain that there are actually a few systems including (a) school sport, (b) community sport, (c) provincial or national sport, and (d) private clubs. Throughout these

sport systems, there may be coaches and teachers who emphasize the teaching of sport skills to develop talent, and conversely others who see their role as developing athletes on an emotional level, and enjoy watching them grow and develop. According to some authors (McCallister et al., 2000; Smoll, 1998) it may be dangerous to teach only sport skills to young athletes, which promotes an environment similar to professional sports. Smoll explains, "most of the negative consequences of youth sports occur when adults erroneously impose a professional model on what should be a recreational and educational experience for children" (p. 64).

Interestingly, the training of physical education teachers has received similar criticism (Fernandez-Balboa, 1997; MacDonald & Tinning, 1995). Studies have shown that physical education teacher education programs are emphasizing the teaching of technical skills, which is contributing to physical education as a sport specific program. Similar to the research in coach education, teachers must be trained to provide more than just technical skills, as they are in a position to contribute to the development of a variety of life skills that young children require.

Learning From and With Others

As indicated earlier, coaches have said that they learn a great deal about how to coach through experience, even if the value of experiential learning "is frequently not recognized or is even disregarded" (Beard & Wilson, 2002, p. 2). Part of this lack of recognition is that it is unclear what learning through experience really means (Beard & Wilson; Moon, 1999). Brown and Duguid (2002) make a distinction between *learning about* versus *learning to be*, and *know that* versus *know how*, which may help us to understand this process:

> Learning about involves the accumulation of 'know that': principally data, facts, or information. Learning about does not, however, produce the ability to put 'know that'

> into use. This Ryle argues, calls for 'know how'. And 'know how' does not come through accumulating information...We learn how, Ryle argues, by practice. And, similarly, through practice, we learn to be. (p. 128)

Facing critiques about the usefulness of their coach education programs, those in charge have looked at ways to complement the information provided in courses (know that) with practical hands-on-experience (know how). One strategy has been to implement formal mentoring programs.

Formal mentoring. The term mentor was apparently derived from Greek mythology, specifically the novel *Odyssey*. According to the tale, Odysseus (Ulysses) trusted his old friend Mentor to counsel and guide his son Telemachus to become successful (Enerson, 2001). Today, the term mentor is often used in this sense and serves a purpose of providing a trusted relationship, where the inexperienced (beginner) learns from the experienced (mentor). However, some studies (Hardy, 1997; Healy & Welcher, 1990; Hudson & Latham, 1996) have shown that the mentor process can benefit the development of both the beginner and the mentor. According to many authors (Bloom, Durand-Bush, Schinke, & Salmela, 1998; Mawer, 1998; Nicholls, 2002) there is not a clear definition of mentoring, which may be attributed to the number of different roles that mentors can have.

In the context of coaching, minimal research on mentoring has been preformed. In 1990, Gould et al. surveyed 130 elite team sport and individual sport coaches to investigate their educational backgrounds and their perceived educational needs to develop successful elite coaches. Related to the future educational needs of coaches, a significant 94% of them agreed that mentor programs would be useful to develop future elite coaches. Furthermore, 95% of them believed there are elite coaches in their sport who are willing to be mentors, and 84% of them mentioned that they would be willing to serve as a mentor. Similarly, Bloom et

al. (1998) performed a study on the development of 21 expert team sport coaches and found that coaches promote the development of formalized mentor programs. Coaches believed this was an opportunity for them to give something back to the profession by helping less experienced coaches.

There does not seem to be any research on mentor programs for youth hockey coaches. In 1999, Hockey Canada initiated a National Coaching Mentorship Program (NCMP) to provide more practical experience and support for coaches (Hockey Canada, n.d.). The mentor program was to be delivered by each provincial association, in hopes to provide coaches with the skills to become effective teachers, leaders, and organizers. Hockey Canada, with the support of their provincial branches, was to select individuals who would act as coach mentors. To date, there has been no evaluation of the NCMP and we have assumed that the program is non-existent. When analyzing the content of this program, it seems that the training of mentors was minimal if there was any training at all. This was certainly a weakness considering that studies (Hardy, 1997; Phillips, Latham, & Hudson, 1996) have indicated that mentors need training and support:

> Mentoring cannot be regarded as an activity that all expert teachers can successfully carry out. Mentoring is a role that requires a training that is grounded in both theory and practice and which involves groups of teachers rather than individuals. (Hardy, p. 16)

As every training program, mentor programs also have a few limitations. First, they consist of one-on-one interaction between the inexperienced individual and the so-called expert (Fury, 1979). This limits the inexperienced person to only one perspective and thus may fall under the acquisition metaphor. Second, mentoring may take up a lot of time and effort for both parties in a mentor relationship (Philips, Latham, & Hudson, 1996; Wright & Smith, 2000). This may be especially difficult for volunteer coaches who are likely to have

another profession. A third problem lies in the selection of the mentor (Campbell, 1993; Douge & Hastie, 1993). According to Campbell, "mentoring requires great skill, openness, and a willingness to share ideas" (p. 68). As outlined earlier, mentors may need training and support to help them with this process.

Interacting with other coaches. As stated earlier, one limitation of mentor programs is that learning is perceived as an acquisition of knowledge from only one person, who is usually considered an expert. However, people may enhance learning by interacting with more than one individual, not all of whom may be considered experts.

As mentioned previously, Gould et al. (1990) investigated the educational backgrounds of 130 elite team sport and individual sport coaches. Results of this study showed that coaches were highly influenced by other coaches. First, coaches mentioned that modeling other successful coaches was a very influential factor in the development of their own coaching style. Moreover, nearly half of the coaches said that talking to other coaches and attending competitions contributed to their coaching knowledge.

More recently, Fleurance and Cotteau (1999) attempted to determine how expert coaches of various team and individual sports developed their expertise. The results were divided into seven main categories (a) formal education, (b) playing experience, (c) professional experience, (d) mentors, (e) interactions with high level athletes, (f) ongoing education, and (g) personal commitment to coaching. Although coaches in this study believed formal coach education programs helped them in their development, it seemed that the more rich experiences occurred in their actual coaching and interaction with others.

Similar to this, Salmela (1995) performed a study with 21 expert team sport coaches in Canada, to determine how they evolved through sport from being young athletes to expert

coaches. The coaches in this study were all involved in a number of sports as young athletes, and were influenced by their own coaches. As they grew older, most of the coaches were able to spend time with a more experienced coach, in which they learned through observing and working with them. In the early coaching years, some coaches did not have personal experience in the sport they were coaching, causing them to struggle at times. However, they were able to collect information and learn through mistakes. Other coaches who did have a personal background in their sport were dedicated to furthering their knowledge of teaching and coaching their athletes. As coaches matured, they all talked about continuing to learn as a coach through their own experiences, or learning through the experience of other coaches. Coaches mentioned sharing their own knowledge with others, even aspiring rival coaches.

In youth ice hockey, it seems that the competitiveness influences those with whom coaches will share information. According to Gilbert and Trudel (2001), most coaches are open to sharing within their own coaching staff. They explain that ice hockey coaches often have time to discuss things before and after games. Lemyre (2003) extended the work of Gilbert and Trudel and found that youth sport coaches interact with many people (assistant coach, manager, acquaintance, parents, players, technical director) on their coaching issues. The nature of the interactions may range from working together to find a solution to only listening politely to what the other has to say. However, this study pointed out that although coaches will interact with many people, they might be reluctant to share certain information with some coaches.

Trudel and Gilbert (2004) expanded on the issue of sharing information with rival coaches. In a position paper on how to train coaches if we want to provide kids with a safe and fair play hockey environment, they argued that most coaches do not wish to share their

knowledge with their competitors because they see each other as enemies. Although coaches may be reluctant to share ideas with coaches they compete against, they see the benefits of observing them and refer to this as borrowing ideas. These results contrast with those of Salmela's (1995) study of expert coaches discussed earlier. Expert coaches were not concerned with sharing knowledge because they said the secret is not in the information that they provide, but in how you teach it.

Many competitive hockey teams are a part of a club or association, whose coaches often get together during the year or see each other at the arena. This may be a realistic opportunity for coaches to learn from and with others (Gilbert & Trudel, 2001). In an attempt to implement this learning environment, Trudel and Gilbert (2004) suggest that facilitators should be in place to cultivate what would be called a coaches' community of practice. This opportunity would fall under learning through participation and correspond to Sfard's (1998) second metaphor.

Learning Through the Internet

As outlined by the American Psychological Association (2001), "The Internet is a worldwide network of interconnected computers" (p. 268). Individuals with a computer device and an Internet Service Provider have access to the Internet. In an effort to help the reader understand the different components of the Internet, we have displayed a figure using the information provided by a few authors (Driscoll, 1998; Stodel & Farres, 2002). As displayed in *Figure 1*, the main component of the Internet is the Web. The Web provides users the possibility to access and post information on Web sites, and also to use Computer-Mediated Communication (CMC) tools.

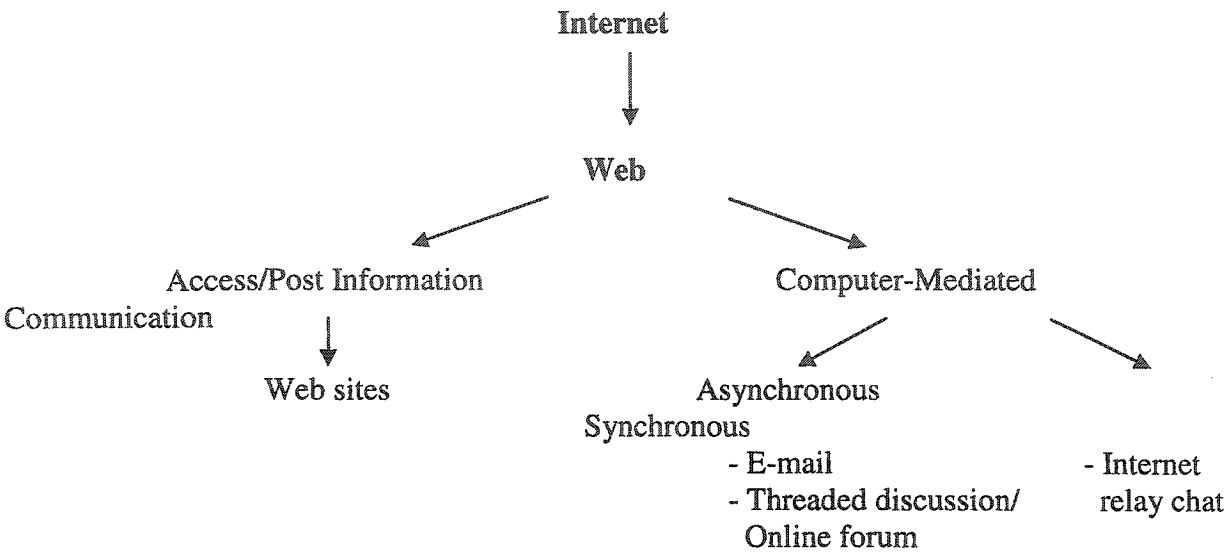

Figure 1. Components of the Internet

Access/Post information. Although there are a few ways to navigate through information on the Internet, the Web is the easiest and most popular method (American Psychological Association, 2001). With a supported Web Browser (e.g., Internet explorer, Netscape) individuals can access the Web, which provides access to millions of Web sites. Research in coach education (Davis 1998; Hamilton, 1997; Wright & Trudel, 2003) and teacher education (Elliott & Manross, 1996b; Mills, 1998; Silverman, 1997) have outlined valuable resources available on educational Web sites, such as practice/lessons plans, drills, and reading resources that coaches and teachers can view or print off. For example, Davis mentions that there are Web sites that offer full text journal articles for coaches to read about topics such as nutrition, teamwork, and injuries. Authors (Davis; Elliott & Manross; Mills) have suggested the use of search engines (e.g., google, yahoo) to navigate through the Web and find specific Web sites.

The Web also allows individuals to post or publish information of their own onto Web sites. According to Elliot and Manross (1996b), teachers are able to publish their ideas (e.g., lesson plans, activities) that enable other teachers to view them. Although it has not been found in the literature, coaches could use the Web in the same fashion to post drills or other coaching information.

With convenient access 24 hours a day, it would be difficult to find weaknesses associated with the Web as an information provider. However, Eklundh et al. (2003) raised a few convincing arguments. First, there may actually be too much information on the Web that can cause an information overflow when using search engines to find specific information. This can make it difficult to find what you are looking for. This brings us to the second limit, which is getting lost on the web, or "lost in hyperspace" (Eklundh et al.). Many Web users may get frustrated when they feel lost, but Davis (1998) points out that navigating through the Web takes practice. Finally, reading a document on a computer screen is not an optimal reading environment for some (Eklundh et al.) and it is unclear to what extent people will read through a computer screen. Many people may simply browse through this information. Therefore, a printer may be beneficial for those who prefer reading hard copy instead of on a computer screen.

Computer-Mediated Communication (CMC). Besides accessing and posting information, Internet users can use the Web to use interact with others using CMC tools. As shown in *Figure 1*, CMC tools are offered in asynchronous form (E-mail, Threaded discussion/Online forum) and also in synchronous form (e.g., Internet relay chat). Asynchronous communication takes place at the users convenience, and does not require participants to be online at the same time. Alternatively, synchronous communication takes

place in real-time, and requires participants to be online at the same time to allow direct contact (Driscoll, 1998).

E-mail is an asynchronous CMC tool that allows people with E-mail accounts to view and write each other digital messages. In many knowledge-based professions, E-mail is the primary communication tool (Eklundh et al., 2003). Teachers and coaches who use E-mail have many benefits of communicating through this increasingly popular tool. Elliott and Manross (1996a) document a few advantages of E-mail for physical education teachers including: (a) quick communication to save valuable time, (b) inexpensive, (c) share ideas easily, and (d) stay in touch with people. In coaching, E-mail can be used for coaches to communicate with each other (Hamilton, 1997), and also to communicate with parents of team members (Moss, 2003). Moss suggests that coaches use only E-mail with parents, to avoid time consuming telephone calls and the invasion of privacy. He argues that coaches are able to answer E-mail when it is convenient for them, which is especially important to coaches who are often volunteers and deserve their private time.

Besides E-mail, communicating in Threaded discussions/Online forums and/or Internet relay chat is often applied in settings where people are not personally familiar with their communication partner(s). Some authors in coaching (Davis, 1998; Hamilton, 1997) and teaching (Mills, 1998; Pappas, 2002; Silverman, 1997) have outlined the benefits of CMC interaction for profession development. For example, Davis believes that the Internet opens the door to the collaboration of coaches around the world, "chat sites, bulletin boards and discussion groups allow coaches, athletes and experts to share information, experience and expertise in a up to date 'live' forum" (p. 20). Similarly, Pappas encourages teachers to participate in discussion forums to promote collaboration among literacy teachers. She

emphasizes that teachers who do not have a large amount of free time can benefit from Online forum collaboration. This lack of time is well understood by youth coaches, making this perhaps the most realistic possibility for coaches to interact with others.

Recently, many researchers have underlined some limits associated with interactions using CMC tools, particularly the lack of face-to-face interaction. According to Elliot and Manross (1996a), the lack of face-to-face over computers can often lead to the misunderstanding of meanings, and for that reason E-mail will not entirely replace telephone calls or face-to-face discussions. Without a face-to-face environment, there is a lack of verbal and visual cues that can influence how participants perceive the dialogue (Chen & Hung, 2002; Jarvela & Hakkinen, 2003). Furthermore, many asynchronous CMC tools lack immediate social interaction, which may lead to an absence of mutual knowledge. As mentioned earlier, many CMC tools involve interactions with people who may not know each other personally. Not knowing what your communication partner does or does not know will affect how people share knowledge and may reduce the effectiveness of the communication (Jarvela & Hakkinen).

Online courses. A combination of easily accessing information from the Web and interacting through CMC tools has allowed education programs to use the Internet as their method of teaching. A few years ago, Brown and Duguid (1996) warned us that learning in the *information age* would be much different than what we are used to. They stated that virtual universities existing only online, would soon become the norm. Although this may be hard to believe for some, it is presently occurring and changing the traditional delivery of teaching. Brown and Duguid argue that Universities are changing primarily because their environment is changing. Many students are taking their degrees later and over longer periods of time, and

no longer have the time or money to invest in the conventional forms of teaching on campus. Furthermore, institutions are attracted to the economic value of online courses, which can cater to large amounts of students from basically any geographical location (Jarvela & Hakkinen, 2003; Spitzer, 1998).

Online courses, usually with the aid of Web-based software, allow instructors to post resources and information, lecture through video and audio tools, and also give students links to resources through the Web (Driscoll, 1998). To make up for the lack of social interaction, online courses may also provide synchronous or asynchronous CMC tools, which may facilitate student-to-student and student-to-teacher interaction (Berge & Collins, 1995).

In coach education, most courses available are delivered in the traditional face-to-face environment. However, with the popularity of online courses in higher education, it may be assumed that coach education courses will expand online, "sporting associations cannot expect to retain their current closed shop approach to coaching courses. Prospective coaches will be able to complete courses and exams from the comfort and privacy of their own home" (Hamilton, 1997, p. 26). Currently, the ASEP offers online courses for coaches in a variety of sports (ASEP, n.d.). However, these courses rely only on the acquisition metaphor of learning, by giving the learner (coach) resources and materials that are aimed at helping them pass a test to be certified. According to a telephone phone call with the general inquiry line at the ASEP (personal communication, April 30, 2004), there are no CMC tools for coaches to ask questions or interact with others if they are having problems. Coaches are expected to have all the information in manuals or Web resources that are needed to pass a test that will provide a certification to coach. This is a major limitation of online courses delivered in this capacity.

In higher education (i.e., university, college), online courses have received a mixture of support and criticism. Research by Barab and colleagues (Barab, Hay, Barnett, & Keating, 2000; Barab, Squire & Dueber, 2000; Barab, Thomas, & Merrill, 2001) have argued that with the aid of synchronous and asynchronous CMC tools, online courses support a 'participatory' model of education, "where students are not receivers of someone else's information and imposed meanings, but instead are actively involved in the creation of their own understandings and meanings" (Barab, Thomas, & Merrill, p. 109). Based on this participatory model of education, other authors (Aragon, Johnson, & Shaik, 2002; Jarvela, Bonk, Lehtinen, & Lehti, 1999; Neuhauser, 2002) have supported the notion that online courses provide a participatory environment that resembles learning in traditional face-to-face classrooms.

On the other hand, a few studies have outlined the two major limits associated with online courses. First, a big concern with online courses is the lack of personal interactions, both those between students, and those between students and teachers that are very prominent in traditional classrooms (Nissenbaum & Walker, 1998). As discussed earlier, this lack of interactions has been replaced with CMC tools, which do not seem to provide the same interactive environment as face-to-face classrooms (Thomas, 2002). Furthermore, although the objectives of CMC tools in online courses are to provide a place for students to interact, it is often a misconception that every student will be actively involved and participate frequently (Eklundh et al., 2003). For example, many users of threaded discussions and online forums are referred to as *lurkers*, and are those who read messages by others but do not post anything themselves (Lazar & Preece, 2003). It has been considered that the role that a *lurker* assumes may not be sufficient for participatory learning to take place (Thomas). Secondly, a major limitation of the Web is the potential of technical difficulties with the Internet Service

Provider or problems with your computer (Elliott & Manross, 1996a; Owston, 1997). Owston found that technical difficulties can be a major barrier for online education and can result in a lack of contribution to online class discussions.

Virtual mentoring. The mentoring process can also be applied over the Internet, which has been termed virtual mentoring (Knouse, 2001). In virtual mentoring, the interactions between the beginner and mentor usually take place through CMC tools. Virtual mentoring has been applied in settings with university students (Russell & Daugherty, 2001), and teachers (Heath & Yost, 2001). Although we know of one online mentoring program, which is available for women coaches in Canada (Coaching Association of Canada, n.d.) it is assumed that there is no current research regarding virtual mentoring in coaching.

According to Knouse (2001) virtual mentoring provides many benefits over face-to-face mentoring including the greater chance for beginners to discuss sensitive issues. They may be more likely to do this over the computer than in front of someone. As with face-to-face mentoring, virtual mentoring has also been found to benefit the beginner (mentoree) as well as the mentor (Seabrooks, Kenney, & LaMontagne, 2000).

A recent study by Russell and Daugherty (2001) investigated virtual mentoring discussions between graduate and undergraduate education students, through a Web-based software called Web Crossing that uses both asynchronous and synchronous communication tools. Using Sfard's (1998) metaphors of learning, the authors found examples of students acquiring knowledge through getting advice from mentors and also examples of students learning through participation by negotiating with each other to gain a common understanding. The authors found that Web Crossing managed to create a social atmosphere

very similar to face-to-face conversations, and they concluded that this technology might actually compliment teaching and learning in higher education.

Virtual mentoring is also being applied for beginning teachers who often have a hard time within the first few years of teaching (Heath & Yost, 2001). In the United States, the MASTER teacher organization has recently developed an online teacher training academy where a "skilled facilitator works with a small group of teachers in a virtual community" (Heath & Yost, p. 26). The mentor program provides materials to the group that are used to facilitate group reflections using asynchronous tools. Beginning teachers enjoyed many components of the mentoring program including interesting material that promotes reflection, interacting with other teachers around the country, good contributions from other colleagues, and the convenience of the program.

Currently, it is unknown if virtual mentoring will benefit coaches. Through the arguments of Dreyfus (1998), it may be argued that coaches need to experience apprenticeships in real-life and not through the Internet. Future research is needed to examine the role of the mentoring process and how this process is adapted through the Web.

Research Questions

The current study will be an investigation into the educational experiences of youth competitive ice hockey coaches. Using a perspective of sport pedagogy, we will attempt to answer the following questions:

1) What are the formal learning contexts in which youth ice hockey coaches are trained to coach?

2) What other informal learning contexts do coaches participate in?

3) Do youth ice hockey coaches use the Internet for coaching purposes?
    a. If no, why?
    b. If yes, in what capacity?

Methodology

Participants

Competitive (A, AA and AAA) youth ice hockey head coaches (N=59) voluntarily took part in the study. The selection of the coaches was based on a few factors, including in-season (n=35) and off-season (n=24) hockey.

In-season hockey coaches are involved during September to March and their leagues are structured within Hockey Canada regulations, which among other things expect each association across Canada to carefully select, train, and monitor their coaches. A total of 57 head coaches of boy's hockey teams from five minor hockey associations in Ontario were contacted to represent in-season hockey coaches (see appendix A). The president of each minor hockey association was contacted first to discuss the study and gain access to the coaches' contact information. E-mails were then sent out to all of the potential participants. Follow-up phone calls were done within two weeks after the E-mailing. A total of 35 male coaches accepted to take part in the study, ranging in age from 33-65 (M=45). Coaches were from novice (n=2), atom (n=8), peewee (n=12), bantam (n=10), and midget (n=3), from two minor hockey associations in the Toronto area (n=11, n=10) and three associations in the Ottawa area (n=6, n=4, n=4).

Off-season hockey coaches are involved during March to August. Since Hockey Canada does not condone off-season hockey, coaches are not a part of an association, meaning anyone can coach if they can get a team together. Off-season hockey coaches usually get teams together in the off-season to participate in off-season tournaments, as there are no organized leagues. To select the participants, the researcher conveniently approached a number of off-season hockey coaches at various off-season tournaments in the Toronto area.

Coaches (n=24) agreed to voluntarily participate in an interview, usually before of after games when the coaches had enough time. Coaches were all male ranging in age from 30-53 (M=41) and the majority of them were coaching boy's hockey, with the exception of two coaches who were coaching girls. They were from novice (n=2) atom (n=3), peewee (n=7), bantam (n=7), and midget (n=5), and were coaching predominantly around Southern Ontario and the Eastern United States.

Data Collection and Analysis

A pilot study with four participants was preformed before the official data collection to test the interview guide. From these interviews we learned that our questions regarding the use of the Internet were not specific enough, because of the variety of different resources available. Therefore, more specific questions were added to create a revised interview guide (see appendix B) to help clarify how coaches actually use the different resources (e.g., Web sites, E-mail, Threaded discussion).

The interviews (lasting generally between 15 to 45 minutes) were performed at convenient locations (e.g., work, arena, restaurant) and were audiotaped. To begin the interview, the participants were given a brief description of the purpose and the procedure of the interview. The purpose was also outlined on a consent from (see appendix C), which all participants signed. The first part of the interview consisted of specific questions regarding the number of years they have played or coached hockey and their level of certification. The answers to these questions were entered directly on a form (see appendix B) by the interviewer during the interview and entered later into Microsoft Excel to perform descriptive statistical tests. The second part of the interview involved more in-depth questions regarding what learning opportunities have contributed to their development as a coach. Finally,

questions were asked regarding how they use the Internet in their coaching. The content of the second part of the interview was transcribed verbatim into Microsoft Word rich text format for further data analysis using Nvivo (Qualitative Solution Research, 2002, version 2.0). The transcripts were read by the researcher and coded at a descriptive level. Descriptive coding refers to reading the transcripts and marking text segments with codes that "can denote a text passage containing specific information in order to allow its retrieval" (Seidel & Kelle, 1995, p. 52). The many codes were then regrouped into major categories we have labelled learning contexts. The coding process was discussed at different moments with a peer (research advisor) who is familiar and knowledgeable with qualitative research as well as youth ice hockey to increase the validity of the analysis.

Limitations

The participants in the study may be a limitation because only male coaches were represented. The majority of coaches were also coaching boy's hockey and only two off-season coaches were involved with girl's hockey. Furthermore, the coaches were chosen across three different competitive levels (A, AA, and AAA), and recreational coaches were not represented.

Ironically, the use of E-mail was a limitation in the study. As discussed in the methodology, I used E-mail to contact the in-season hockey coaches. On more than a few occasions, the E-mails did not reach the intended address and were sent back to me. It was assumed that either the coach no longer used that E-mail address, or their E-mail privacy settings did not allow me to send them the message. As a result, I relied on telephone calls to contact these coaches and tell them about the implications of their participation in the study.

Results

The results of this research will be presented in two articles. The first article, *Learning How to Coach: The Different Learning Contexts for Youth Ice Hockey Coaches* will be submitted to The Sport Psychologist (TSP). The second article, *The Use of the Internet by Youth Ice Hockey Coaches*, is an applied article that will be sent to The Physical and Health Education Journal (PHE Journal), which is a journal from the Canadian Association of Health, Physical Education, Recreation and Dance (CAHPERD).

Running head: LEARNING HOW TO COACH

Learning How to Coach: The Different Learning Contexts for Youth Ice Hockey Coaches

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Abstract

Considering coaching to be highly dynamic and complex (Cushion, Armour, & Jones, 2003), coaches need to develop a wide range of skills and knowledge to help them coach young athletes. In an attempt to foster this development, formal coach education programs have been organized in many countries around the world (Campbell, 1993). This way of learning corresponds with Sfard's (1998) acquisition learning metaphor. Alternatively, coaches have said that they learn to coach from informal opportunities such as individual experiences starting from when they were young until their current coaching position (Fleurance & Cotteaux, 1999; Salmela, 1995). In relation to Sfard, this type of learning relates to the participation learning metaphor. Internet resources are also being promoted as valuable tools for many professions including coaching (Davis, 1998; Hamilton, 1997). It is the objective of this article to investigate the different learning contexts of youth competitive ice hockey coaches. Based on interviews with 35 youth competitive hockey coaches, the results present seven different learning contexts including (a) the National Coaching Certification Program (NCCP), (b) coaching clinics/seminars, (c) formal mentoring, (d) books/videotapes, (e) individual experience, (f) face-to-face interactions with coaches, and (g) the Internet.

In youth sport, coaches have a strong influence on young athletes having either a positive or negative sporting experience (Roy, Trudel, & Lemyre, 2002). Through practices and competition (Côté, Salmela, Trudel, Baria, & Russell, 1995), coaches influence the development of specific sport skills and also the personal growth and development (McCallister, Blinde, & Weiss, 2000; Wilcox & Trudel, 1999) of their athletes. Thus, large-scale coach education programs have been developed in many countries around the world (Campbell, 1993) to help prepare coaches for this important role. Examples of these programs are the National Coaching Certification Program (NCCP) in Canada, the National Coaching Accreditation Scheme (NCAS) in Australia, the National Coaching Certificate (NCC) in the United Kingdom, and the American Sport Education Program (ASEP) in the United States of America. These programs share similar characteristics including (a) being taught in a classroom, (b) having different levels, and (c) having well defined content for each level.

It may be assumed that learning to coach in formal coach education programs is associated with acquiring a well-defined quantity of information that some *experts* have identified as what coaches should know in order to be certified. Given this view of learning, coach education programs have concentrated on what Sfard (1998) calls the acquisition learning metaphor, where experts (course conductors) deliver information to their students (coaches) who must acquire this information and then apply it into their own setting. Thus, the human mind can be compared to a container that can be filled with materials (Sfard).

Although large-scale coach education programs are now present in many countries, there are relatively few studies that have examined their effectiveness. This leaves an important question unanswered: will coaches improve their coaching by taking a coach education program? According to Dickson (2001), the only study available was conducted by

Gilbert and Trudel (1999). These authors performed a case study on a Peewee boy's hockey coach taking an NCCP level 2 theory coaching course, which is equivalent today to the Intermediate level course. Analysis of the data collected through interviews, videotapes, and stimulated recall interviews showed that the coach changed neither his decision-making approach nor his coaching behaviors after the course was completed. The authors provide two reasons that explain these results. First, the course was conducted in 14 hours and 40 minutes, which was seven hours short of the recommended course design, meaning that the course conductor may not have provided all the information prescribed. Second, the coach revealed that he already possessed basic knowledge of many of the concepts in the course, and he noted that the course only helped to reinforce his method of coaching. Although it would be inappropriate to generalize this case study to the experience of other coaches in the course and even more with other large-scale education programs, the results imply that coaches may learn through other contexts than coach education programs. According to Brown and Duguid (2002) we should look to distinction made by Jerome Bruner on *learning about* and *learning to be*. Learning about is very common and "Most of anyone's knowledge might best be described as knowledge 'about'. Many people learn *about* a lot of things", while "learning to be requires more than just information. It requires the ability to engage in the practice in question" (Brown & Duguid, p. 128). Therefore, coach education programs may be emphasizing the learning about coaching, rather than learning to be a coach.

Other studies have reinforced the notion of learning to be a coach. For example, Fleurance and Cotteau (1999) interviewed 10 expert coaches of various team and individual sports in a French culture, to determine how they developed their expertise in coaching. The results were divided into seven main categories that coaches determined important in their

development of expertise: (a) formal education, (b) playing experience, (c) professional experience, (d) mentors, (e) interactions with high level athletes, (f) ongoing education, and (g) personal commitment to coaching. Although coaches in this study believed formal coach education programs helped them in their development, it seemed that the more rich learning experiences occurred in their actual coaching.

Similar to this, Salmela (1995) performed a study with 21 expert team sport coaches in Canada, to determine how they evolved through sport from being young athletes to expert coaches. The coaches in this study were all involved in a number of sports as young athletes. As they grew older, mentors or teachers seemed to have a positive influence on every coach. Most of the coaches were able to spend time with a more experienced coach, in which they learned through observing and working with them. In the early coaching years, some coaches did not have personal experience in the sport they were coaching, causing them to struggle at times. However, they were able to collect information and learn through mistakes. Other coaches who did have a personal background in their sport were dedicated to deepening their knowledge of teaching and coaching their athletes. As coaches matured, they all talked about continuing to learn as a coach through their own experiences and also through sharing their knowledge with other coaches, even aspiring rivals who they may coach against. Most coaches in this study felt that the development of coaching expertise should include formal educational experiences and also various forms of mentorship.

The process of learning to be occurs through day-to-day activities and corresponds with Sfard's (1998) second metaphor of learning through participation. Sfard describes learning in the participation metaphor as a process of becoming, which occurs through participating in a number of activities. Although there has been a recent interest by researchers

to investigate the participation learning metaphor, the rich tradition of education brings many of us to think that acquisition is the only way to learn:

> Our institutions...are based on the assumption that learning is an individual process, that it has a beginning and an end, that it is best separated from the rest of our activities, and that it is the result of teaching. Hence, we arrange classrooms where students – free from the distractions of their participation in the outside world – can pay attention to a teacher or focus on exercises. (Wenger, 1998. p. 3)

Wenger (1998), in his book *Communities of Practice: Learning, Meaning and Identity*, presents a learning perspective based on a social theory of learning. Without going into detail, Wenger's perspective resembles learning to be (Brown & Duguid, 2002), and Sfard's participation metaphor. For example, Wenger, McDermott, and Snyder (2002) define communities of practice as "groups of people who share a concern, a set of problems, or a passion about a topic, and who deepen their knowledge and expertise in this area by interacting on an ongoing basis" (p. 4). Up to now, most educational programs have been reluctant to recognize this form of learning that is happening outside of their well-defined curriculum.

Our traditional way to conceive of learning is also challenged with the recent popularity of the Internet. The Internet is an expanding resource that is changing the lives of people at work, in school, and at home (Oostendorp, 2003). The World Wide Web (Web), also referred to as the information superhighway, provides the capabilities to access almost any amount of information. Relating back to the notion of learning about, Brown and Duguid (2002) note that, "in the age of the Web, this learning about is easier than ever before" (p. 128). For example, the Web may provide a coach all the information necessary to know about coaching and gain explicit knowledge, but it may not address learning to be which refers to tacit knowledge (Brown & Duguid).

An increase of Web use among educational institutions (Brown & Duguid, 1996) has lead to an increase in research to examine these environments. Some authors have documented the benefits that Web-based learning provides. For example, Spitzer (1998) argues that using the Web provides more opportunities for students over a large geographical area. In regards to learning, research by Barab and colleague (Barab, Hay, Barnett, & Keating, 2000; Barab, Squire & Dueber, 2000; Barab, Thomas, & Merrill, 2001) highly support Web-based learning environments that provide communication tools for students to interact with each other. They have argued that these environments provide a "participatory" model of education that provides more freedom to actively learn rather than acquire imposed meanings in a traditional classroom (Barab, Thomas, & Merrill, 2001). On the other hand, some researchers have outlined limits of Web-based learning. Although most Web-based learning environments include tools for communication, Thomas (2002) has argued that these tools are insufficient for learning to occur as in regular face-to-face interactions. Without visual and verbal cues that exist in traditional face-to-face interactions, communicating over the Internet can lead to misunderstandings in meanings (Chen & Hung, 2002) and an absence of mutual knowledge between the individuals communicating (Jarvela & Hakkinen, 2003). According to Eklundh et al. (2003), "Web technology can help people accomplish tasks together in new ways, across geographical boundaries, but the extent to which such cooperation actually takes place is dependent on a range of situational factors" (p. 122). These situational factors include (a) the motivation to share knowledge with others, (b) the cooperative climate in their everyday environment, and (c) the accessibility of the Web technology for people (Eklundh et al.)

Recently, a few studies have outlined many of the resources available on the Internet for coaches (Davis 1998; Hamilton, 1997; Wright & Trudel, 2003), however no studies have investigated if and how coaches actually use it and what are the factors that might influence its use. This information will become more important as we continue moving into what is being called the information age.

In the coaching area, it may be important to look at learning contexts outside of formal coach education programs. However, it is not known in what manner these alternative learning contexts might serve coaches. Do they extend existing coach education programs or are they completely separate learning opportunities? According to Cushion et al. (2003) it is about time to extend our conception of learning how to coach: "if we are to develop imaginative, dynamic, and thoughtful coaches, we must widen the search beyond the "usual suspects" of content knowledge that has traditionally informed coach education programs" (p.216). Therefore, the purpose of this article is to present the different learning contexts where youth ice hockey coaches learn to coach. To do this, we have interviewed coaches asking them questions about learning through formal large-scale coach education programs, on their learning experiences outside of these programs starting when they were young athletes until their actual head coaching position, and finally on their use of the Internet.

Methodology

Participants

Head coaches (N=57) from A, AA, and AAA competitive youth hockey teams from five minor hockey associations in the province of Ontario, Canada, were contacted to voluntarily participate in the study. The president of each minor hockey association was

contacted first to discuss the study and gain access to the coaches contact information. E-mails were then sent out to all of the potential participants. These were followed by a telephone call within two weeks. A total of 35 participants accepted to take part in the study.

The 35 participants were all male ranging in age from 33-65 (M=45). Coaches were from novice (n=2), atom (n=8), peewee (n=12), bantam (n=10), and midget (n=3), from two minor hockey associations in the Toronto area (n=11, n=10) and three associations in the Ottawa area (n=6, n=4, n=4).

Data Collection and Analysis

A pilot study with four participants was preformed before the official data collection to test the interview guide. From these interviews we learned that our questions regarding Internet use were not specific enough, because of the variety of different resources available (e.g., Web, E-mail, Software). Therefore, more specific questions were added to help clarify how coaches actually use the different resources.

The Interviews (lasting generally between 15 to 45 minutes) were performed at convenient locations (e.g., work, arena, restaurant) for both the researcher and participant, and were audiotaped. To begin the interview, the participants were given a brief description of the purpose, and the procedure of the interview. The purpose was also outlined on a consent from, which all participants signed. The first part of the interview consisted of specific questions regarding the number of years they had played and/or coached hockey and their level of coaching certification. The answers to these questions were entered directly on a form by the interviewer during the interview, and entered later into Microsoft Excel to perform descriptive statistical tests. The second part of the interview involved more in-depth questions regarding what learning opportunities have contributed to their development as a coach. Finally,

questions were asked regarding how they use the Internet in their coaching. The content of this second part of the interview was transcribed verbatim into Microsoft Word rich text format for further data analysis using Nvivo software (Qualitative Solution Research, 2002, version 2.0). The transcripts were read by the researcher and coded at a descriptive level. Descriptive coding refers to reading the transcripts and marking text segments with codes that "can denote a text passage containing specific information in order to allow its retrieval" (Seidel & Kelle, 1995, p. 52). The many codes were then regrouped into the major categories we have labeled *learning contexts.* To increase the validity of the analysis, the coding process was discussed at different moments with a peer (research advisor) familiar with and knowledgeable about youth ice hockey.

Results

The result section will be presented in terms of seven common learning contexts (See *Figure 1*) that were developed through the data analysis. The benefits and weaknesses addressed by the participants will be presented for each of the seven learning contexts.

National Coaching Certification Program (NCCP)

Although Hockey Canada are currently beginning to train coaches through a new curriculum approach (Hockey Canada, n.d.), all 35 coaches in this study were certified through Hockey Canada's existing NCCP program, with either the Coaching (Level 1), Intermediate (Level 2), or Advanced I (Level 3) certificate. More specifically, two coaches had their Level 1, the majority (n=30) of coaches had their Level 2, and three coaches progressed up to their Level 3. The coaches' comments collected during the interviews indicate that there is no unanimity regarding the benefits and weaknesses of the NCCP.

Coaching (Level 1). According to Hockey Canada (n.d), the Coaching level course "is designed for a coach who is new to the coaching program and encourages player development in hockey" (p. 4). Our results indicate that the Coaching level is indeed beneficial to those coaches without a background in hockey or in coaching:

> The good things they review are how we should deal with children versus embarrassing them. That to me is the most important information that should be passed on, it's not about how to move the pylons. We should be more focused on how to deal with kids and the rationale behind coaching. (C 15)

However, because the Coaching level is a pre-requisite for the Intermediate level, all coaches had to take the course even if they had a hockey or coaching background. These coaches did not find the Coaching level useful:

> The Coaching level wasn't even a course, they teach nothing about the game of hockey. (C 22)

> I didn't learn as much as I thought I would, just with my hockey background it didn't give me enough. (C 32)

> If you didn't have the experience I had, it may be worthwhile. Even the coach level would be worthwhile to someone that hasn't coached or played the game. But a lot of the things they were trying to show us were pretty obvious, like how to start and stop. Those things you should already know before you get into it. (C 35)

Intermediate (Level 2). The Intermediate level "is designed for a coach who is working with players at the competitive level" and emphasizes "improving basic skill acquisition and introduction of team play and individual tactics" (Hockey Canada, n.d., pp. 4-5). To reach this goal, the Intermediate level involves twice as much on-ice training than the Coaching level, which a lot of coaches seem to appreciate, "The on-ice component was necessary. For the Intermediate there were two on-ice sessions for about two hours each and we did drills where the coaches actively participated" (C 11). Apart from that, the opinions of coaches varied somewhat. For some coaches, the content of the course was what they were hoping for, "It

was useful, it gave me some concepts to think about. I think it was useful for practice preparation, also the parts on motivation and dealing with kids were good" (C 29). Other coaches mentioned that there is still a lack of hockey related material, and the content is repetitive of the Coaching level:

> A lot of it was just redundant in the sense that it was the same as the Coaching level course except it was one day longer. (C 12)
>
> There was too much repetition from the Coaching level course. (C 28)

For some coaches, the content was not enough to prepare them for their role as a coach:

> I think it lacks follow up. You get a diploma and that's it, then we are on our own, especially those who haven't really coached before, do you ask them to take a course before they coach or should they coach before they take a course? (C 30)

Finally, there are some coaches that take their Intermediate level not because they want to, but because they are required to if they want to coach at a competitive level:

> I went there because I had to take it. That was the only reason I went. (C 35)
>
> The thing with the NCCP course, there were more guys that were there because they had to and not because they wanted to be there. You hear comments like "I'm only here because I need my Intermediate or they won't let me coach", or "when are we getting out of here, when is this over"; that soured me a bit. (C 6)

Advanced I (Level 3). The Advanced I level "is designed for the coach who works with athletes who have several years of competitive experience and who is taking a more structured and disciplined approach to hockey" (Hockey Canada, n.d., p. 5). Therefore, coaches are not required to take their Advanced I to coach at the competitive youth level. Finding the time to take a week long course is difficult for some coaches, "I've been thinking about taking it but it's a matter of finding time" (C 12). Money is also an issue for some coaches, and many are not ready to invest any more money to take their Advanced I, "I don't think it would be worth

it for the cost of it, they charge too much and I will not do my advanced for that reason" (C 28).

Although time and money seemed to be barrier for coaches taking their Advanced I level, a few coaches decided to take it and mentioned several benefits, "All of the information is pertinent, there is nothing that is not, anyone who is there is paying to go, they want to learn" (C 23). Coaches also commented on the benefits of the structure compared to previous levels, "You just didn't take it and walk away, it was constant things throughout the year so you had to apply things throughout the complete season" (C 5). Finally, they also mentioned having more opportunities to interact with other coaches across different associations:

> The Advanced I level gave me the opportunity to learn from a lot of the other people that
> were in the program. (C 5)

> We would break off into tutorial type sessions and then try to apply some of that stuff we just talked about. Together with other coaches we shared our experiences, and I felt that to be the most productive. It's not just listening and reading, but breaking off into smaller groups and then you would learn from talking to other coaches. (C 5)

Coaching Clinics/Seminars

Besides learning through the NCCP courses, many coaches attended other coaching clinics that were available around their community. An expert or a professional coach usually instructed these clinics in a traditional format of information delivery. Our data showed that coaches seem to enjoy going to these clinics. For example, some coaches mentioned the benefits of listening to professional coaches, who address specific topics not taught in the NCCP, "[name of the coach] and [name of the coach] were there, one guy came in and explained the trap, and another explained the umbrella powerplay. The NCCP didn't do any of that" (C 22). Similar to this, many coaches have gone to seminars put on by professional

teams in the National Hockey League. Other than a free ticket to a hockey game, one coach mentioned the benefits of watching a professional coach run a practice:

> With this clinic, it was mostly them lecturing and then we got to witness their practice. The good thing about that was that a lot of the stuff I do as a coach, even with young kids, the [name of a team] even does. (C 33)

Formal Mentoring

Formal mentoring programs were available for most coaches in the current study, although these programs were very different across each association. More specifically, of the five associations in the current study, one association had a coach mentor in place, three had a Coach Development Director (CDD) who resembled more of a facilitator, and one did not have anyone in place.

Coach mentor. One association had an individual in place that had been involved as a coach mentor for the past three years. In his role, he was responsible for monitoring each coach in the association, giving help if coaches needed it, and to evaluate coaches based on observations through practices and games. His role involved one-on-one guidance with each coach, as well as monthly meetings for all of the coaches to get together over breakfast. All four coaches interviewed in this association seemed to have a positive experience with the coach mentor and mentioned the benefits of mentoring:

> I would ask him questions about systems and stuff. He would come out to my practices and give me constructive feedback after. (C 28)

> I think there is a real need for mentoring...the odd thing was pointed out to me that was useful but more having a resource there to talk to. Associations are run by volunteers who know very little about hockey, and so it's good to have someone who has a very high level of training and experience as a mentor. (C 30)

Although all four coaches mentioned positive aspects of their mentor coach, they believed that not every coach got as much out of the program as they did, "He was available if

you wanted him, but some coaches probably didn't use him like I did...Coaches who didn't use him were probably limiting themselves" (C 28). A discussion with the coach mentor in this association clarified the situation of a few coaches who did not respond well to him, "A couple of them were mule headed, coached for a few years and did not want me to tell them what to do". Some coaches reflected on the importance of the selection of mentors to increase the likelihood that coaches will accept them, "Selection of the mentor coach in the association is important. He does need to have a bridge long hockey background, so that the coaches will respect him" (C 11).

One limitation of this learning context, underlined by a coach, was that coaches might be relying on only one person, "He [coach mentor] has his different ideas, so is it the right way? I don't know, you run the risk of following one person's ideas, rather than a number of ideas" (C 34). Alternatively, CDD's can encourage learning from a number of coaches instead of only one person.

Coach Development Directors (CDD). A CDD is a term used in many associations that refers to person in charge of coach development. In three associations, CDD's were in place and were usually responsible to set up and organize monthly meetings. These directors usually used this time to go over administration and technical issues:

> The first portion is a bunch of structured seminars on how to conduct a tryout, how to evaluate players, how to release players, how to manage your finances, how to set up a budget. All those little things you may not have covered anywhere else. (C 3)

In some cases, the CDD allotted time for coaches to share ideas on certain coaching issues or problems, which provide the opportunity to learn from others, contribute to the development of other coaches, and develop a sense of coaches' community:

> I exchanged a lot, you give and receive. Then you get home and start thinking more, and then maybe a situation comes up in a game or practice, and then you learn. (C 10)

> We try to have regular meetings that our coach development director sets up, where we would get together as coaches and trade ideas, and talk about problem resolution. That's within our own association and that's to help get consistency and allow the younger coaches to learn from the more experienced coaches, younger in terms of experience not age". (C 29)

> It allows you develop relationships with your peers so if there's times where your looking for a specific aspect that you want to teach the children, then you'll know who some of the experts are that you can rely on. It helps you to build up your network of contacts and that you can use for augmenting your own teachings". (C 11)

Another coach who used to be the CDD in his association explained how he assumed the role of a facilitator to encourage the sharing of knowledge:

> The meetings were mandatory but just because coaches were present doesn't mean that they were really there. Because the new guys were eager to learn and always seemed to be actively engaged and some of the older guys say I don't need help because I've been coaching for 20 years. I tried to get the idea across that I am not standing up here telling you what to do, I'm just going to facilitate the fact that 20 guys around a table here have more knowledge together than if I sat here and talked. (C 5)

Coaches seem to be open to sharing ideas with coaches in their association, but not with coaches from another association:

> We have no reason to hold anything back in [name of association], we are trying to be as much like a club as we can. This would be different from other associations though, the Titans use a different system so they wouldn't necessarily give us information on how you defend them...but we have to share things in [name of the association]. It's like our own little coaching community. (C 29)

Two possible limits of CDD's were addressed: the scheduling of the meetings, and the role that the director assumes. The scheduling of the meetings is very important with volunteer coaches who have little free time, "There are too many...I like to get away in the summer, so these meetings in the summer I find have the same effect as the kids who play hockey too much, you need a break" (C 10). The role that the director assumes is also very important to keep coaches interested and motivated to come:

> We had a real good session once where [name of the CDD] turned it over to us and threw out a few problems which got everyone involved and everybody exchanged views and situations from the past...but we have a few where the coach development director will get up there and drown through everything in print and you don't need that. (C 10)

Books/Videotapes

Coaches acquired a variety of information through books and videotapes. Beginner coaches tended to search for books or videotapes that explained drills or technical hockey issues:

> I want to be as informed as possible so I pick up library books with drills and stuff in it. (C 8).

> I have read books and watched videotapes. I find them very good. I am always trying to come up with new drills and skills. (C 33)

More experienced coaches seemed to use books and videotapes for more advanced topics such as sport psychology, nutrition, and physical fitness, because they already have a large database of drills:

> Once you have certain basics of drills and stuff, that's pretty straight forward. There's only so many ways you can do it. I think the next level that if I was to go on even with this age now is how to deal with athletes on a mental level...I've seen some books out there but they are pretty basic books and I would like to see something more advanced. (C 12)

> I have a library of hockey books at home, so if you're not reading books, studying sport psychology and other things to upgrade yourself as a coach, you're not a coach, you're someone who opens the gate. (C 23)

Individual Experience

Playing and coaching hockey were mentioned by a number of coaches as helping them in their development as an ice hockey coach. Coaches also mentioned the benefits of life experiences (family, work) that have helped them with their coaching.

Playing hockey. Playing the game of hockey was deemed valuable to learn to coach because it helped coaches understand the game, "I question whether someone who knows

nothing about hockey, who doesn't have a hockey background like myself, if they are going to be qualified to coach at the highest competitive level [AA or AAA]" (C 34). By playing the game for many years, coaches have a great opportunity to see different coaches and learn from them:

> I played five years in Junior and my coach talked to me and got me involved and wanted feedback, so those days made me pay attention to what was going on. (C 14)
>
> I've had some bad experiences and I just don't want to be that kind of coach. (C 9)

Coaching hockey. For some coaches, you learn by actually being a coach. This hands-on experience is argued to even replace playing experience, "Coaching experience is number one. I think playing experience is overrated because the most important skills of a hockey coach are teaching and communication, just because you have played doesn't mean you can coach" (C 33). One coach with over 30 years of coaching experience expands his learning through experience, "Each year you approach it as you are going to learn something and that's what makes it fun, even tonight I learned something, there's always different ways to coach kids, every time I step on the bench I learn something" (C 26).

Family experience. A few coaches talked about learning through their family experience. Coaches mentioned learning as a child and also as a parent. One coach explained, "What I do have is that I learned a lot from my dad...he taught us that it's not a life and death thing but it's fun, enjoy the experiences you have" (C 4). Another coach added, "The biggest thing is life experience...I always said when I had kids I was going to dedicate my time to them...I think that's of greater value to me than any coaching clinic" (C 15).

Work experience. Interestingly, many coaches mentioned that their experiences at work have helped them to coach, particularly developing leadership skills:

> I'm a general manager of a trucking company, so there are some leadership skills that you develop there that you can bring in to coaching hockey. (C 6)
>
> Through my job I've taken a lot of leadership courses, which I believe really help not only in being able to get messages across but also to be more organized. (C 11)
>
> I've taken about six courses at work on leadership, coaching, mentoring, negotiation, and all of that stuff. (C 16)

Although none of the work related skills that the coaches mentioned involved working with kids, experience as a teacher may help, "I've never had any teaching training but if you are dealing with young people and you have a teaching background I think that would be useful but I don't have that" (C 24).

Face-to-Face Interaction with Other Coaches

Direct interactions with other coaches have been mentioned as a great context to learn to coach, "You learn more about coaching from other coaches than anybody else" (C 6). Coaches stated four different groups of coaches to learn from including: coaches on the same team, coaches in the association, coaches outside of the association, and coaches at an elite level.

Coaches on the same team. Coaches reported having a great opportunity to learn to coach as an assistant coach:

> The fact that I was an assistant coach with a number of coaches along the way, and they weren't necessarily good coaches, I learned a lot. (C 5)
>
> All of it has come from the experience of the people I have been with...I coached with [coaches' name] and he let me run some of the practices. I was the one who did the board drills and who put them in place. He utilizes people around him very well and I do that with my staff now. (C 8)

Conversely, one head coach in this study currently had two assistant coaches that were playing professional and noted the benefits of learning from them, "We talked all the time. You learn

by listening to people, asking them questions, and then by observing people. I wouldn't call them coaching mentors but they are similar to that" (C 33).

Coaches in the association. An opportunity to learn from a wide range of coaches may be within your own association. Coaches within associations do not compete against each other, but see each other often at the rink or at meetings. Some coaches who arrive at the rink early watch the game or practice ahead of them for ideas:

> Within our association there is a very good core of coaches, you go to your practice an hour early because there are six ice pads in the arena and you walk around and watch to see what they are doing. (C 19)

Coaches seem to enjoy interacting with the other coaches in their association:

> When the coaches in our association get together for a meeting that is really helpful, not so much having speakers, but when you can sit with your other coaches and say, I'm having a problem with this do you have any ideas? Then absolutely you'll get more information (C 15).

Coaches outside the association. Learning from coaches outside of your association seemed to be very rare, as the competition factor often gets in the way. In our pilot study, one coach said, "We just don't talk to each other, we hate each others guts. You don't want to give anything away, it is win at all costs". This view was further supported by a coach in this study, "A lot of coaches hold stuff pretty close to their chest, they don't want to give away any secrets" (C 29).

The exchange of information between coaches in different associations will only be possible if the competition factor does not get in the way. One coach mentioned that he was able to develop a friendship with a coach he competed against and since that time, they give suggestions to each other at the rink or over E-mail. One coach strongly believed that seminars should be in place to learn from other coaches, not only in your own association, but also from other associations, "It was interesting, useful, and fun to hear guys having the same

kinds of problems...I think it's about time to get coaches involved and have them cross over into different associations" (C 35). When asked if this was realistic in competitive hockey today his response was, "It should be, we are talking about kids here and coaches are taking it way too serious" (C 35).

Elite coaches. Learning from more advanced coaches was a popular way to increase knowledge. If you know these elite coaches well you can see them in action and talk with them. One coach who has good contacts with the junior coaches in his area said, "I'm always talking to them at ice level, finding out what they are working on. If I'm having troubles with my team I talk to them. I'm always trying to learn and improve" (C 32). If coaches do not know any elite coaches well enough to communicate with them, they can go and observe games and practices, "I spend a lot of time going to [name of the team] practices and you see the drills and the flow" (C 22). Finally, there is the possibility to watch professional games, "I watch professional hockey. I don't watch it for the entertainment. I watch it from a coaching perspective and see how they play in the defensive zone, neutral zone, just always dissecting the game" (C 14).

The Internet

Coaches were asked questions regarding the Internet and if they believe it can be used as a learning resource. After analyzing the results, the Internet was most commonly used to interact with people via Computer-Mediated Communication (CMC) tools, and to access information via the World Wide Web (Web).

Computer-Mediated Communication (CMC). Coaches in this study used two types of CMC tools; E-mail and Threaded discussions. First, the majority of coaches used E-mail in some capacity for coaching. However, they were predominantly using E-mail for personal

communication with parents and players, to give information like team schedules, standings, and tournament information. E-mail was also used by coaches on the same team to exchange information regarding the preparation of their practices or games, "I'll give them [assistant coaches] a photocopy package of about 50 drills at the start of the season and then I will send them the practice plan before each practice over E-mail" (C 11). As far as E-mail being an opportunity to learn about coaching, our data suggest that it is a possibility but probably unlikely because of the coaches' preferences to meet face-to-face with coaches' in their association:

> I prefer the face-to-face thing, it's hard to describe problems and get solutions like that. I would rather talk to coaches face-to-face. It might work but I'm not sure. (C 34)
>
> Usually with coaches we prefer face-to-face and not on the Internet. (C 13)

The coaches' reluctance to share information with coaches outside of their association, as indicated earlier in the section on face-to-face interactions, may also be a factor.

Coaches also used Threaded discussion (also known as Online forums) tools, via the Web, which allow asynchronous interactions between people who they may or may not know. Coaches with access to the Web can view these threaded discussions and post messages if they wish. A fair number of coaches (n=18) said they have visited coaching Web sites with Threaded discussions but decided not to post anything. Only five coaches had posted a message on a Threaded discussion dedicated to hockey. One coach discussed the benefits over E-mail, "With Threaded discussions you can get fairly instant feedback, the benefit over E-mail is you're always targeting to more people, anyone can reply to it who has access to the Threaded discussion" (C 11).

Some coaches expressed their concern about the quality of information you can obtain on Threaded discussions, because of anonymous postings that may not be trusted:

> You don't know who is giving the information. It may be some twelve-year-old kid. (C 9)

> You never know who is submitting it. It could be a coach but you don't know. (C 29)

Some also made reference to a Threaded discussion that went out of control and became a venting place for people:

> A lot of people were saying a lot of bad things about people and the organization and I view it as being a coward because you don't have to put your name to it. (C 3)

> People were using it to throw stones from far and not have a name attached to it. It is like high school where everyone is talking behind your back and you hear about it through a 3rd party. (C 15)

The negativity that was associated with these Threaded discussions had many coaches viewing them but not posting anything:

> I never chat. I have seen them and read them, and I may agree or disagree, but I have not put my viewpoint on them (C 10)

> I've seen [name of the Threaded discussion] and it's horrible. It got to the point where you wanted to go right back and see what else was put in, you couldn't believe what was being written and it was embarrassing to our association. (C 6)

A limit of interacting through both E-mail and Threaded discussions seems to be coaches' preference of face-to-face interactions, than through a computer:

> I don't think it's a good way to communicate because it's very impersonal and a lot of the times things can get misinterpreted when they are typed. When you talk to someone face-to-face you get a greater understanding of the information that is being conveyed. (C 15)

> I don't think it's a way for coaches to learn. I wouldn't waste my time talking over the Internet or in a chat room with other coaches, I think I get enough from the meetings that we participate in. (C 31)

Web. The Web provides access to a large amount of coaching information via millions of Web sites. Coaches were predominantly searching the Web to find new drills. Some coaches indicated that they were able to exchange drills on association Web sites:

> I know a lot of associations have coaching textbooks on the Internet and everyone clicks and gets a drill or something. Like if I had a drill, I could put it on the Internet and others could pick it up and do something with it. (C 26)

Using search engines (e.g., Google, Yahoo), some coaches visited coaching Web sites that offer a variety of drills that coaches can access for free, "I got drills once in a while. I don't remember the Web sites but I would just get on and browse" (C 28). Some Web sites are offering animated drills, an opportunity that is not possible in a book. This new technology allows coaches to view how the drill is executed and gives them a visual that may help them when they have to execute the drill in their practice, "It does not only explain the drill, but the technology actually has players skating on the ice so you can see how it's actually done" (C 19). This new technology also allows coaches to create their own drills and view them using the animated feature.

The frequency in which these coaches access drills often depends on their experience. Coaches who are new (approximately 1-4 years) to coaching tend to search for drills more often than experienced coaches. One coach explains, "I've done a lot of searching for new practice drills in my early years, I don't use it as much now for that purpose because I now have enough" (C 33). It may be assumed from this statement that this coach has acquired enough knowledge and does not need to continue learning. However, the need to keep your program interesting by bringing in new ideas is a concern for other experienced coaches. For example, a coach with a high level of playing experience and 15 years coaching competitive hockey explains, "if I was not to have the Internet as a resource my program would be pretty old quickly" (C 5).

Fourteen coaches searched the Web for advanced information such as nutrition, sport psychology, and physical training. Similar to drill searching, coaches predominantly used search engines to find specific resources:

> Sometimes you need to throw out a subject on nutrition and coaching and see what comes up, and bang a whole bunch of Web sites come up. (C 3)

> It's easier to go through a computer than to go through all of the books, it just takes less time and you cover much more. (C 8)

The coaches underlined a few limits of using the Web. Reading information on a computer screen is perceived differently than reading on paper. One coach explains his preference:

> I'm a guy who prefers hard copy, because you get the whole thing in front of you at once. With the Internet, you have to click each page all of the time and you can only read one thing at a time and its hard to go back to things because you forget where it was. (C 33)

Finding information through the Web can also be difficult at times and becomes time consuming for coaches who do not have a lot of free time, "It becomes very cumbersome trying to find out what is good and what is bad because you have to read through so many sites" (C 14).

Discussion

The study has shown that youth ice hockey coaches learn to coach through different learning contexts. Three of them (NCCP, coaching clinics, formal mentoring) can be classified as *coach receiver learning contexts* because the content that is delivered is selected by instructors (experts), and coaches are assumed to acquire the content and/or accept the experts' recommendations (See *Table 1*). The other four contexts (books/videotapes, individual experience, face-to-face interactions with other coaches, Internet) can be classified

as *coach initiator learning contexts*. Contrary to the receiver learning contexts, there are no official instructors and coaches must take initiatives to profit from the learning activities that are available. It is only if we combine all of these seven coaches' learning contexts that most of the core adult learning principles (learner's need to know; self-concept of the learner, prior experience of the learner, readiness to learn, orientation to learning, motivation to learn) are respected (Knowles, Holton, & Swanson, 1998).

Another finding of the present study is that the opinion of the coaches regarding the importance of each learning context varies considerably. Factors that might explain the coaches' preferences can be found in the literature on coaching, and in the education field.

Regarding the NCCP, the main divergence among coaches was about the focus of the course content, particularly at the Coaching level. For some coaches, too much importance was given to general intervention principles when interacting with kids compared to the hockey specific aspects to develop hockey players. This disagreement on the content of coach education courses relates to an ongoing debate on the objectives of youth sport. According to Hall, Slack, Smith, and Whitson (1991), while some coaches see the role of a coach as developing sport skills to help athletes reach the professional levels, others are satisfied to watch young athletes grow and develop emotionally and physically. Lemyre (2003), in a study on youth ice hockey and soccer coaches, found that the individual experience of the coaches influenced their satisfaction regarding the content of the NCCP. Coaches without playing experience were more interested in receiving examples of drills that they can immediately use during their practices than being taught coaching theory. Conversely, coaches with a large amount of playing or coaching experience were more inclined to ask for sport specific

information (e.g., tactics, strategies) and more advanced topics to enhance athlete performance (e.g., nutrition, mental training, physical training).

The coaching clinics and formal mentoring are two learning contexts generally offered by the local minor hockey association, or in the case of some coaching clinics through a professional hockey teams' marketing program. In a sense, these two contexts can be perceived as extensions of the NCCP, which provide a sense of ongoing personal development. The formal mentoring process is of particular interest because it has often been suggested to improve coach education (Bloom, Durand-Bush, Schinke, & Salmela, 1998; Lyle, 2002; Saury & Durand, 1998). However, what mentor or mentoring means is far from being clear (Nicholls, 2002). In this study, coaches have made reference to two different types of mentors. First, the mentor can be in charge of assessing and monitoring coaches' work during practices and games. In this role, the mentor has to be recognized as being knowledgeable in the sport. The second type of mentor mentioned by coaches was called a CDD. One of the main tasks of these mentors was to schedule coaches' meetings (usually once a month) and their role was to make sure that coaches have all the necessary information (from finances to tryout procedures) to adequately coach and manage their team. Recently, Trudel and Gilbert (2004) have argued that although formal coach education courses and mentoring programs can be useful, they may have limits:

> By focusing too much on the personal development of coaches, we are providing a context where coaches tend to work exclusively for their own team while forgetting the importance of collaborating with people from other teams to create a safe and fair-play hockey environment. (p. 176)

If the mentors are particularly concerned with providing coaches opportunities to interact and exchange knowledge, than they should assume a role of a facilitator who:

> Should be someone who is respected in the association but at the same time will be able to inspire a new view of ice hockey. That person will have to become familiar with the concept of community of practice and how to nurture it. (p. 176)

Books and videotapes are resources that coaches consult and some of them even have quite an exhaustive library. Gilbert and Trudel (2001) also report that youth ice hockey and soccer coaches refer to books and videotapes to generate strategies to solve specific coaching issues.

Coaches in this study, similar to coaches in other studies (Bloom et al., 1998; Dunn & Dunn, 1992; Saury & Durand, 1998) indicated that by being exposed to different coaches as an athlete they were able to develop knowledge regarding how to coach. The possibility to act as an assistant coach is also valuable because it provides the chance to observe and work with a more experienced coach. However, in youth sport this preparation stage before assuming the role of a head coach is often neglected because coaches are often parents being asked to volunteer because of coaching shortages (Lemyre, 2003; McCallister, Blinde, & Kolenbrander, 2000). The transfer of knowledge and skills from personal experiences (family and work) is very interesting but has not been a topic of research to date.

Given that coaching is a social activity, it should not be a surprise that "learning clearly has a social dimension or context. We learn from and alongside other people, in all our social relationships" (Jarvis, Holford, & Griffin, 1998, p. 37). Coaches indicated that they interacted with others through face-to-face interactions and also through CMC tools via the Internet. Our data suggests that discussing coaching issues within the members of a coaching staff is essential. Coaches are also open to sharing information with other coaches in their own association, yet are reluctant to exchange knowledge with coaches of other associations. With access to the Internet, coaches can interact with others through CMC tools. However, other than personal communication through E-mail with their team (players, parents), only a few

coaches have seemed enthusiastic about interacting with other coaches potentially around the world. For many coaches, E-mail is a substitute of the telephone to deliver personal information. Based on our data, using E-mail or Threaded discussions to learn by interacting with other coaches is not prevalent because as indicated earlier, coaches' prefer to meet each other face-to-face and have this opportunity often at the arena or at meetings. It has been suggested, "some of the most important processes in human communication, like creation of mutual understanding or shared values and goals, are hard to reproduce in the Web environment" (Jarvela & Hakkinen, 2003, pp. 77-78).

Regarding the Web, Eklundh et al. (2003) said, "The dominating view of the Web has been as a medium for presenting and retrieving information" (p. 99). Based on our data, coaches seem to prefer to retrieve than present (post) information. First, the main use of the Web by our coaches was to locate Web sites where they can have access to a database of drills, or coaching software to create their own drills. When looking for other information on coaching, the Web was a useful tool but at some point most faced the usual problems regarding searching and navigating through the Web, which Eklundh et al. refer to as the information overflow, and being "lost in hyperspace" (p. 100). Regarding the opportunities to exchange coaching knowledge on the Web via CMC tools, we must say that very few coaches were active participants. In Threaded discussions dedicated to hockey, many coaches only assumed the role of lurkers, who are defined as "Users who do not post messages but read messages posted by others" (Lazar & Preece, 2003, p. 142). Although it had been suggested that being a lurker should not have a negative connotation because, "Lurkers might be new to the topic area, and might not have much to add to the conversation" (Lazar & Preece, p. 142) our data showed that even the more experienced coaches were lurkers. Their reasoning for this

was that they did not want to participate in Threaded discussions that were dominated by people posting negative comments. Such negative comments, called "cybergossip" (Findley & Corbet, 2003) were discussed by coaches in this study when there was (a) no moderator, (b) no community norms or appropriate posting guidelines, and (c) no registration process (Lazar & Preece). Coaches in this study said they would be willing to actively participate in Threaded discussion if they can have a sense of whom they are talking to, preferring to discuss with other coaches than with kids, parents, or outsiders.

We have to assume that in ice hockey, and likely in many other sports, coaches tend to exchange knowledge only with a few coaches (within their team or association) because the desire to win brings them to see coaches of other teams as opponents or even enemies, instead of partners in a youth hockey league. Reflecting on this issue, Trudel and Gilbert (2004) in a sense linked many of the coaches' learning contexts:

> In sum, if confrontation is the focus of organized youth hockey, it is impossible to find a community of practice of coaches because coaches will not share their secrets; they want to surprise and defeat their opponents. We also must realize that the existing training courses for coaches as well as the mentoring programs tend to reinforce this situation because the focus is to foster the individual coach development and not the sharing of information between coaches. This situation is unfortunate because coaches would benefit from discussions with their colleagues on coaching issues particularly those related to social issues. (p. 170)

Conclusion

In this exploratory study, we have attempted to identify the different contexts in which coaches learn to coach. Although we categorized these contexts into *coach receiver learning contexts* and *coach initiator learning contexts,* the objective was not to promote one over the other. Based on Sfard's (1998) article, it would be inappropriate to discriminate against any of these contexts, since each context seems to have a unique role in the development of a coach.

Therefore, it may be concluded that coach education should include on a combination of all seven learning contexts, instead of focusing on one. Future research should concentrate on investigating the complementary of these contexts and what can be done to make each of these contexts more appealing for coaches.

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Table 1. Learning contexts of youth ice hockey coaches

Learning Context	Description
1. NCCP	-Coach level -Intermediate level -Advanced I level
2. Clinics/Seminars	-Professional
3. Formal Mentoring	-Coach mentor -CDD
4. Books/Video	-Drills -Advanced
5. Individual Experience	-Playing -Coaching -Family -Work
6. Face-to-face Interactions with Other Coaches	-On the same team -Inside their association -Outside their association -Elite coaches
7. The Internet	-CMC -Web

Running head: COACHES USE OF THE INTERNET

The Use of the Internet by Youth Ice Hockey Coaches

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Abstract

The Internet, via Computer-Mediated Communication (CMC) tools and the World Wide Web (Web), is providing opportunities that allow instantaneous interactions, and access to a large amount of information. CMC tools, such as E-mail and Threaded discussions, allow coaches to communicate with team members, and collaborate with other coaches around the world (Davis, 1998; Hamilton, 1997; Moss, 2003). The Web provides access to coaching Web sites, which often supply databases of coaching information such as drills and articles (Davis, 1998; Hamilton, 1997; Wright & Trudel, 2003). Although these authors have outlined the valuable resources available on the Internet, we have no information on how coaches actually use them. The goal of this article is to investigate the use of CMC and the Web among coaches, and present the benefits and weaknesses of these resources. The results of this article show that (a) E-mail is an important CMC tool for coaches to interact with their association, (b) Threaded discussions are available for coaches to interact with others, but a lack of constructive discussions dedicated only for coaches has lead to various negative experiences, (c) some coaches are beginning to post team information on the Web, which allows team members to access team information easily, and (d) the majority of coaches are accessing drills on the Web.

The Internet is defined as "a worldwide network of interconnected computers" (American Psychological Association, 2001, p. 268). With a computer device and an Internet Service Provider, individuals can have access to the Internet. The Internet (See *Figure 1*) provides access to the World Wide Web (Web), which allows users with an Internet Browser (e.g., Internet Explorer, Netscape) to easily access and post information on Web sites, and also interact through Computer-Mediated Communication (CMC) tools. As shown in Figure 1, CMC tools provide both asynchronous (taking place at different times) and synchronous (occurring simultaneously) interactions.

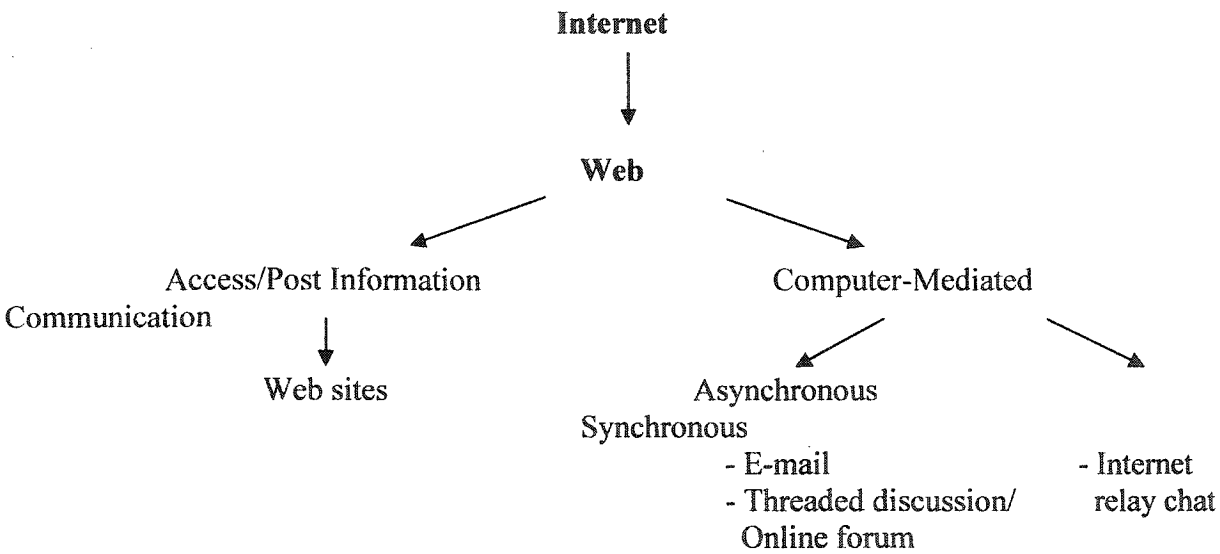

Figure 1. Components of the Internet (adapted from Driscoll, 1998; Stodel & Farres, 2002).

According to Oostendorp (2003), the Internet is changing the way people access information, and interact with each other. Although a few authors (Davis, 1998; Hamilton, 1997; Moss, 2003; Wright & Trudel, 2003) have recently talked about what the Internet can offer coaches, we have almost no information on how coaches actually use it. The current popularity of Internet connections in private residences (Coffman & Odlyzko, 1998) is an appropriate reason to investigate the use of the Internet by amateur coaches. Thus, this study

will aim to explore the use of the Internet by youth ice hockey coaches. In the early stages of this research, Wright and Trudel attempted to map what was available on the Web for hockey coaches. They found Web sites that allow coaches to access information such as drills, practice plans. They also found opportunities to interact through CMC tools with other coaches, and ask questions to a panel of experts. In their critique of what they found on the Web, the authors mentioned that (a) the most interesting Web sites usually come with a price tag that many volunteer coaches may not be willing to pay, (b) many of the drills offered are similar to those in books, and (c) there are very few Web sites that offer CMC tools that are dedicated for ice hockey coaches to communicate with each other. Knowing that specific resources are available through the Internet for hockey coaches, the next step was to investigate the use of the Internet by youth ice hockey coaches.

Methodology

Participants

Participants (N=59) in the current study were male youth competitive (A, AA & AAA) ice hockey coaches, ranging in age from 30-65 (M=43). Divided into two groups, in-season (September-March) head coaches (n=35) were from five minor hockey associations in Ontario, and off-season (March-August) coaches (n=24) were coaching predominantly in Southern Ontario and the Eastern United States. Considering their different structures, we felt in was important to differentiate between these two groups. In-season hockey is structured within Hockey Canada, which among other things expects each association across Canada to carefully select, train, and monitor their coaches. Off-season hockey is not structured within

an association since Hockey Canada does not condone it, meaning anyone can be an off-season coach as long as they get a team together.

Data Collection

Qualitative semi-structured interviews, lasting generally between 15 to 45 minutes, were performed with each participant. In the first part of the interview, participants were asked questions related to their coaching background and how they have learned to coach. In the second part of the interview, questions related to the use of the Internet for coaching purposes were asked. The off-season coaches were interviewed in arenas at various off-season hockey tournaments, while the in-season coaches were interviewed at locations convenient to both the researcher and coach (e.g., work, arena, restaurant).

Results

Coaching Background

There were minimal background differences between off-season coaches and in-season coaches. The age of in-season coaches (M=45 R=33-65) was a little older and arguably more experienced than off-season coaches (M=41 R=30-53). Differences in formal training through the NCCP were also minimal, despite the fact that off-season coaches are not required to be certified as in-season coaches are. This similarity is probably explained by the fact that most off-season coaches were also involved to some degree with in-season hockey, which resulted in their certification.

Of the 24 off-season coaches, 12 (50%) were head coaches with relatively the same team in the previous in-season. They mentioned that there were a few changes with players who were too busy with different summer sports, or on vacations. Six (25%) off-season

coaches were involved as head coaches from the previous in-season year with a totally different team. A common response to this was that they wanted to coach their son or daughter in the off-season, because there is pressure from the association not to coach them during the in-season. Since there are no residential restrictions concerning which club you have to play with in the off-season, many coaches recruited players from a wide area. Furthermore, two (8%) off-season coaches were assistant coaches, one was a trainer, and three did not coach at all during the in-season.

The Use of the Internet

Information regarding the use of the Internet by in-season and off-season coaches is presented in Table 1. The table is divided into two parts: (a) the use of the Internet to interact with others, and (b) the use of the Internet to access and post information on Web sites.

Internet to Interact with Others

As presented in Table 1, coaches used two forms of asynchronous CMC tools (E-mail and Threaded discussions) to interact with other people. It is worth noting that coaches did not mention using any type of synchronous CMC tools.

E-mail. The data indicated that E-mail is an important communication tool in minor hockey. Twenty-nine (83%) in-season coaches mentioned that their association communicates with them through E-mail sending them information on meetings, scheduling, ice rentals, and other relevant news. An in-season coach commented on his association using E-mail, "it has almost become the exclusive method of communication for them" (IS 33). Because off-season coaches are not part of an association, none of these coaches mentioned any communication of this type. The coaching staffs also use E-mail to communicate with each other. Thirty-seven (63%) coaches indicated communicating through E-mail with their assistants. A few coaches

not only use E-mail to talk with their assistants about coaching issues, but also take advantage of sending practice plans and drills to their assistants before practices. An in-season coach explained, "I give them a photocopy package of about 50 drills and I send them the practice plan before each practice over E-mail" (IS 11). Coaches who do not communicate with their assistant coaches over E-mail commented that they see enough of each other at the rink. Fifty (85%) coaches, often with the assistance of their managers, will use E-mail to communicate with their players and parents. This method is saving valuable time, "You have to use the Internet strictly for time management. I E-mail people instead of getting on the telephone with every parent, just E-mail them all, keep it quick and manage your time" (IS 25). Coaches, especially off-season, whose players and assistants live in a wide area, were more likely to use only E-mail, "On this summer team, I have kids from Oakville, Toronto, Ajax, and Peterborough, everyone is long distance to Kingston so everything is E-mail" (OS 6). Coaches (3 off-season, 6 in-season) who do not use E-mail to communicate with players and parents prefer the telephone to get their information across. E-mail was also used by coaches (42%) to share information or seek advice from coaching peers. Coaching peers were referred to as family members who are coaches, coaches in their association, or elite level coaches. One off-season coach explains, "It would be a variety of other coaches, it could be friends, it would be people that I know have experience" (OS 1).

A few coaches encountered limits to the use of E-mail. Their concern is that digital messages lack face-to-face interaction. One coach set guidelines for using E-mail with his parents, "I tell my parents not to use E-mail if they have a problem because I would rather do it face-to-face because you can hide behind your E-mail's" (IS 22). Another coach was very cautious of what he sends through E-mail, "you hit send and then you say, I shouldn't have

said that, and there is no take back because another person has it in writing and prints it out" (IS 3).

Threaded discussions. Threaded discussions can be used as an alternative to E-mail for communication. Many coaching Web sites mentioned by coaches (See Table 2) have Threaded discussions (also know as Online forums), which are asynchronous CMC tools for coaches to interact with others who they may or may not know. However, only three coaches (2 in-season, 1 off-season) actively interact through this method. These coaches believe that Threaded discussions are a great way to share ideas with other coaches and keep up to date with information around their league:

> You'll see some things on there like wanting to do dry land training over the summer and I can ask someone where I can get good information for dry land training techniques (IS 11).

Aside from sharing ideas, an off-season coach enjoyed using Threaded discussions as a scouting method, "Sometimes we will talk about a specific player. Coaches will get on and chat about what has been successful in shutting him down, that's one of the things you learn on those chat boards [threaded discussions]" (OS 6).

Twenty-five (42%) coaches (7 off-season, 18 in-season) mentioned that they have read a Threaded discussion dedicated to hockey but decided not to post anything. According to recent literature, these coaches can be referred to as *lurkers.* Many coaches feel that they are constantly monitored and must be careful of what they say, "You don't want to put your name there sometimes...we are so easily scrutinized as coaches, we are under a microscope all of the time and you just really have to keep your nose clean out there because there is so much liability" (IS 25). Therefore, the majority of coaches are refraining from posting anything to avoid potential conflicts. A large number (46%) of coaches have yet to see a Threaded

discussion dedicated to hockey on a website. While some coaches mentioned that they had never heard of them, others refused to visit them because they had heard only negative things about them.

The negativity towards Threaded discussion has contributed to a few limits regarding confidentiality. Many of the problems that coaches mentioned seem to occur because people can post messages without having to display their names. Coaches, players, or parents often use Threaded discussions to gossip about other coaches and players and as a result, coaches and young hockey players are being talked about in a public environment where they can view what other coaches are saying about them. Many in-season coaches referred to a specific Threaded discussion as "crap", "people bitch and complain", and "a venting place". Similarly, many in-season coaches referred to a different Threaded discussion as "a coward's way of airing dirty laundry", "disgusting", "embarrassing to our organization", and "people talking behind your back". The consistent negativity in these responses may suggest that Threaded discussions dedicated for coaches to share ideas constructively with other coaches are not being used. Interestingly, coaches said that they would consider participating in Threaded discussions "if there was a section just for coaches and you had to register only if you were a coach" (IS 29). It seems important that these Threaded discussions require a registration and have a moderator to ensure a positive environment.

Internet to Access and Post Information

As shown in Table 1, the Web was used to access and post coach information through Web sites. Of the 59 participants, only two said they did not use the Web at all for coaching purposes.

Post team information. Five (2 off-season, 3 in-season) of the 59 coaches mentioned posting information on the Web, such as schedules, team statistics, pictures, and upcoming events, on a team Website. This eliminates the need for coaches to send out E-mails or make telephone calls. An off-season coach described their Web site:

> The team Web site is where we communicate with the parents as far as practices and schedules. They also use the site because after each game I will write a brief dialogue of the game, so they will go on and read it. (OS 1)

Coaches mentioned two different methods to post this information onto Web sites. First, four coaches give information to the Webmaster in their association, who is in charge of posting this information onto their team Web site. Second, one coach was his own Webmaster and created his own Web site. Finally, since the data collection the authors have noticed that many of the coaches interviewed now have team Web sites through team management software (e.g., www.eteamz.com) that provide the capability for coaches to easily build their own Web site to post information for their team. Although not mentioned at the time of data collection, it seems team management software is becoming a popular resource for many coaches.

Finding drills. Until the recent growth of the Web, coaches relied on books or coaching manuals to find drills that they could use in their practices. Today, coaches can use the Web to find similar resources. The majority of coaches have at least attempted to find drills through the Web. Thirty-four (58%) coaches said they often (three or more times a month) look for drills on the Web, while ten (17%) coaches stated that they rarely (a few times a year) went to the Web to find drills. Only five (14%) in-season coaches had never used the Web for this purpose. Conversely, the larger number (42%) of off-season coaches not using the Web for drills is not surprising since they do not usually practice as often as in-season teams.

There are many specific Web sites that offer free drills, which coaches have told us they use (See Table 2). Coaches can save these Web sites into their Internet bookmarks, so that they can access them easily. Animated drills are becoming increasingly popular for coaches, and it allows coaches and players to see an example of how the drill will look on their computer screen. An off-season coach explained, "It's basically players floating around doing drills, so you turn the computer on and the kids can see how to do it...you can see the players as opposed to using X's and O's" (OS 1). Animated drills are less frequently found for free and usually require the purchase of coaching software.

To compliment drills available on the Web, four coaches (2 in-season, 2 off-season) said they use coaching software to help prepare practices and organize their season. This type of software can be easily found through the Web (See Table 2) and can be downloaded from a specific website, or alternatively through ordering a CD-ROM. Although an Internet connection is not always required to use the software, it enables coaches to share their drills with each other and in some cases access a database of drills that are posted on the Web. Three coaches have mentioned using the Coaches Planner Software, "it's actually for the price one of the best, it's got video with moving drills" (IS 32). As coaching software tools become more popular, the price of them will likely become more reasonable. For example, the authors searched the Web and found free coaching software that is available to download (www.jes-soft.com), which offers basically the same tools as those from companies charging money. We have also come across coaches who created their own drills using Microsoft Visual Basic software.

In comparison to E-mail, the limits of the Web were more complex and will be discussed in order of four commonalities: (a) time consumption, (b) lack of knowledge, (c)

cost, and (d) confidentiality. First, coaches commented that using search engines (e.g., www.google.com) on the Web to find drills has become time consuming, "it becomes very cumbersome trying to find out what is good and what is bad because you have to read so many sites" (IS 15). Another in-season coach added his preference for books:

> It's easier to grab a book and say here's one on shooting and scoring, just look at the picture and it's there. With the Internet, I've got to click on an icon, go to this icon, and I find it more time consuming. (IS 9).

Second, some coaches mentioned a lack of knowledge as the reason for refraining from using the Web, "I'm not a computer nut. I would have to get my son or daughter to do it. They would be better than me" (IS 8). Finally, coaches stated that they did not take full advantage of what is available on the Web because of cost, "You can get everything you want from the Internet, like drills, but my biggest compliant is that it's for sale, and too much money" (IS 34).

Conclusion

Although the majority of current hockey coaches use the Internet in some form, many of them are not taking full advantage of the resources available. As technology advances, more possibilities will likely be available for coaches that may become an integral resource for coaches. Assuming coaches become more acquainted with these resources, their popularity will most likely increase. Brown and Duguid (2002) contend that we live in the information age where "we all need to be able to deal with the hype that accompanies new technological designs" (p.4). Coaches can share updated coaching website with each other and seek help using coaching software that is available. As for Threaded discussions, Webmasters must carefully monitor discussions to ensure the content of what is being displayed is not offensive

to anyone. Future research of Threaded discussions is required to understand how coaches could learn to coach through new technology and online relationships. This information will be increasingly important in the future as our "technological world" continues to evolve and create new possibilities that may benefit coaches for years to come.

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Table 1. The use of the Internet by youth ice hockey coaches

	Off-season Coaches n= 24	In-season Coaches n= 35	Total n= 59
Internet to interact through:			
E-mail			
Association	N/A	29 (83%)	N/A
Assistant coaches	16 (67%)	21 (60%)	37 (63%)
Players/Parents	21 (88%)	29 (83%)	50 (85%)
Peers	10 (42%)	15 (43%)	25 (42%)
Threaded discussions			
Often	2 (8%)	1 (3%)	3 (5%)
Rarely	0	4 (11%)	4 (7%)
Read only	7 (29%)	18 (51%)	25 (42%)
Never	15 (63%)	12 (34%)	27 (46%)
Internet to post/access information:			
Post team information	2 (8%)	3 (9%)	5 (8%)
Access drills			
Often	12 (50%)	22 (63%)	34 (58%)
Rarely	2 (8%)	8 (23%)	10 (17%)
Never	10 (42%)	5 (14%)	15 (25%)

Table 2. Web sites for hockey coaches

Website Address	Threaded discussion	Drills	Software
www.hockeycoach.com	X	X	
www.passhockey.com	X	X	
www.ottawaminorhockey.com	X	X	
www.justforcoaches.com		X	
www.usahockey.com		X	
www.drillsetc.com		X ($)	
www.members.tripod.com/tom_molloy		X	
www.members.shaw.ca/brian.wiwchar		X	
www.prospectstourney.com	X		
www.omha.net	X		
www.coachesplanner.ca		X ($)	X ($)
www.playmanager.com		X ($)	X ($)
www.cancoach.com		X ($)	X ($)
www.digitalcoach.com		X ($)	X ($)
www.technicoach.com	X		X ($)
www.drilldraw.com			X ($)
www.jes-soft.com		X	X

Note. $- Requires payment

Concluding Reflections and Implications

To conclude this study, I would like to reflect on my experiences, which have helped me to picture how I see coach education today and in the future. First, I will present a brief section on the factors that influence coaches' participation in coaching learning contexts. Finally, I will discuss the implications for the future regarding learning to coach.

Factors that Influence Participation

As presented in this study, there are at least seven different learning contexts from which youth hockey coaches can learn to coach. These contexts all have their own uniqueness and contribute to the development of each individual coach differently. After the analysis, two major factors (prior experiences, time constraints) were observed that seem to influence the specific contexts that coaches participate in which coaches participate.

First, coaches in this study had a wide range of prior experiences, ranging from playing professionally to not even knowing the rules. Therefore, many of the coaches had extremely different knowledge bases. For example, the NCCP seemed to benefit coaches who were new to coaching more than experienced coaches. New coaches wanted the basics, and were always searching for drills to use in their practices. On the other hand, experienced coaches often felt that the NCCP was a waste of time. Instead, they usually had a memory of drills through their previous experience, and tended to seek different contexts (books/videotapes, Internet) that covered more advanced topics such as sport psychology and nutrition.

Secondly, another factor that influenced which context coaches participated in was time constraints. Youth coaches are unpaid volunteers who have very little time to invest in certain learning contexts. This was evident in only a few coaches taking their Advanced I

NCCP level, which is not mandatory to coach at the youth competitive level. Interestingly, it seemed that some coaches did not have time to spend time in structured meetings to interact with coaching peers and share knowledge. Although most coaches talked about the benefits of learning through interaction, it seemed like they preferred to do it on their own time and at their own convenience.

Implications for the Future

Although this study has concentrated on what opportunities have been available for coaches to learn, I would like to follow this up with a vision into the future of learning to coach. This section will provide future insights into a few of the learning contexts that were discussed throughout this document.

NCCP. Currently undergoing a major transition to a more competency-based approach, the NCCP is attempting to improve its delivery of coach education (Coaching Association of Canada, n.d.). This new curriculum may improve some of the weaknesses that were mentioned by coaches in this study. For example, coaches from the recreational level to the competitive level will no longer be trained with the same course content. Instead, coaches will be trained in relation to the environment that they are coaching (community sport, competition, instruction). Furthermore, the new curriculum will not certify coaches in a progressive order such as the traditional levels (1 to 5). The new NCCP is attempting to make a distinction between coaching training and coach certification, which provides coaches the opportunities to receive training in an area that they deem important to coach in their particular environment. To be certified, coaches are not only required to display their skills through theoretical testing, but they must also show their practical skills through evaluations in practices and competitions. Although it seems that the NCCP is making a good step

towards the training of coaches, future research will be necessary to investigate the new structure.

When discussing the future of the NCCP, it is necessary to consider the influence that the Internet may have. Although the NCCP has not currently shown any move towards online courses, this will most likely occur within a few years. The American Sport Education Program has already begun the delivery of courses online, however it is not providing an environment to communicate with others to make up for the lack of social interactions in traditional classrooms. This is a major barrier to the design of online courses. If the NCCP or other coach education programs decide to deliver education online, they should incorporate CMC tools and encourage coaches to interact with instructors and other coaches.

Clinics/Seminars. Beyond the NCCP, there are other formal coaching clinics and seminars for coaches to learn. These clinics seemed to compliment the NCCP course, because they often involved more hockey specific content, which seemed to be sought after by the coaches in this study. Moreover, professional coaches usually delivered these clinics, which many youth hockey coaches believe are a valuable source of information. However, the popularity of learning through professionals brings up the controversial issue of the role of youth sport. Clinics like these may project the professional model of sports onto youth hockey coaches. This model emphasizes the teaching of sport skills to develop elite athletes, which may not be the reason that many young hockey players participate. Coaches in this study who attended these clinics had two different views. Some coaches went to these clinics because they believed professional coaches would provide valuable information that could be applied directly into coaching youth hockey. Others were more critical of the clinics because of the age and skill level of their athletes. These coaches would take information from the clinics and

adapt it based on their athletes' level of development. Future research is necessary to determine what content these courses are delivering, what type of philosophy they preach, and what expectations youth coaches have from learning in this context.

Mentoring. With no clear definition, mentoring has occurred a few different ways in youth ice hockey. Although the NCMP was developed by Hockey Canada in 1999 to provide youth hockey coaches with certified mentors, the program is currently not in place. However, as it was found in this study, many associations have selected people (some volunteers, some paid) to act as Coach mentors or Coach Development Directors (CDD).

The future of mentoring in youth hockey may see a number of individuals acting as Coach mentors, CDD's, or possibly other roles. For example, we are currently performing a study on the experiences of a person in charge of mentoring in the Nepean Minor Hockey Association. This person calls himself the Technical Director of Coaching and he has assumed a role similar to a CDD conducting monthly meeting for all of the coaches to get together and talk about coaching issues, such as try-outs, finances, referees, and parents. In addition to this, he runs on-ice and off-ice clinics for coaches to come out and acquire skills to use in their coaching, and is also available to come out to coaches' practices and teach lessons on a variety of skills (e.g., power skating, shooting). To date, it seems that most of the coaches appreciate having a person with a wealth of hockey knowledge available to them. There seems to be a core group of coaches that often show up to the meetings and clinics, as others have not shown as much of an interest because of time constraints or a lack of interest. Since there are over 100 coaches in the association (both recreational and competitive), the technical director does not have time to work with every coach individually, and is the main reason he has structured the program in this fashion.

With potentially a large amount of coaches inside an association, it would seem logical for coaches to rely on each other for support, rather than only the coach mentor. To promote this environment, a person in charge of the mentoring process could act as a facilitator to encourage this learning context. This was mentioned a few times by coaches in this study, and also discussed by Trudel and Gilbert (2004). According to these authors, the facilitator is in charge of fostering "coaches' knowledge by finding ways to have coaches discuss their problems, using each other as a sounding board" (p. 175). This will be a challenge for both the facilitator and the coach. Future research needs to look at the role of the facilitator, and what type of knowledge this person should have. It should be noted that youth hockey coaches in this study have indicated that they need to respect this person in charge, and seem to prefer someone with a large knowledge base of hockey.

Although having someone inside an association to facilitate coaches' knowledge would be a great learning context, a bigger challenge would be creating a similar context to this across different associations. Trudel and Gilbert (2004) point out that the only way to provide a safe and fair play environment for youth hockey players is to find ways to bring coaches together that compete against each other, so that they can "share the same enterprise". The future of a mentor program within rival coaches is unknown, and currently many youth coaches do not interact with each other. Sport organizations need to develop events for rival coaches to get together and collaborate, instead of only working on their own or within their association. Without this, many youth hockey coaches will continue to see their coach opponents as enemies similar to the professional model of sport.

To sum up mentoring for the future, there are many possibilities and future research will be needed to discover the most effective role. However, a lack of clear guidelines has left

mentors on their own to develop what they believe to be a successful program. I believe there is a need for these people to collaborate with each other and create a support system. In the same way that coaches require support, mentors also need support.

Internet. Although the Internet was somewhat emphasized throughout this document, this was only due to a gap in the research, and not to promote it as a valuable learning context. Although I do believe that the Internet has the potential to serve as a valuable learning context, I will argue that it will take further time for coaches to get used to certain components. For example, the Web has been shown to be a great resource for coaches seeking information, and it seems that it is starting to replace books and manuals, especially for drills. Although some coaches have become frustrated because of a lack of knowledge with how to use the Web, I believe they will become more comfortable with practice. At the same time, the Web is expanding, which has caused many to believe that it contains too much information. It will be interesting to monitor the amount of information on the Web as we progress into the future, and how to navigate easily through this information.

As for interacting over the Internet, E-mail has almost replaced the telephone for communicating with team members about upcoming games and statistics. However, using CMC tools to collaborate with other coaches is far from being a positive learning environment. I strongly encourage Webmasters to be very careful when deciding to put a CMC tool on a Web site for people to interact. As discussed earlier, without proper monitoring there can be very negative consequences. At the same time, it may cost a lot of money carefully monitor a Web site. Finding ways to monitor these Web sites at a low cost will be a challenge in the future.

In conclusion, I have learned that there are many learning contexts available for coaches to learn beyond formal programs. Because volunteer youth coaches are usually have families and full-time jobs, it is extremely important for coaches to have access to learning contexts that are convenient based on their busy lifestyles. Future research is necessary to further explore these contexts and improve the education of youth coaches for the future.

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Appendixes

Appendix A

Participants Contacted

Organizations	Novice/ Atom (N)	Peewee (N)	Bantam (N)	Midget (N)	Total (N)
Clarington Toros A & AAA	4	4	4	3	15
Whitby Wildcats AA & AAA	6	4	4	3	17
Ottawa Sting AA	1	2	2	2	7
Ottawa Valley AA	1	2	2	2	7
Gloucester Rangers A & AA	2	3	3	3	11
Total	14	15	15	13	57

Appendix B

Interview Guide

1. What organization are you from?

2. What division and level did you coach last year?

3. How old are you?

4. Do you have any experience playing hockey?

5. How many years have you been coaching youth hockey?

6. What level of NCCP certification do you currently have?
    a. When did you receive this certificate?
    b. Do you find this training useful to your coaching?

7. Do you have any other coaching training other than your certification?
    a. Do you find this training useful to your coaching?

8. Did you use the Internet for coaching last year?

    If Yes:
    a. Do you use it to contact people in your organization?
    b. Do you use it to contact your assistant coaches?
    c. Do you use it to contact players?
    d. Do you use it to contact friends regarding coaching issues?
    e. What Web sites do you use to help with your coaching?
        i. Web sites with information?
        ii. Web sites to communicate with others?

    If No:
    a. Why?
    b. Do you have access to the Internet?
    c. Do you know other coaches who use the Internet?

9. Do you recommend the Internet to other hockey coaches?

    Why or Why not?

Interview Data Form

Question 1: Clarington____ Ajax____ Ajax/Pickering____ Ottawa Sting____ Ottawa Valley____ Gloucester____ Other_____

Question 2: Atom_____ Peewee_____ Bantam_____ Midget_____

Question 3: _____

Question 4: Recreational_____ A_____ AA_____ AAA_____ High School_____ University_____ Junior_____ Major Junior_____ Professional_____ Other _____

Question 5: 1 year____ 2 years____ 3 years____ 4 years____ 5 years____ 6+ years____

Question 6: Level 1____ Level 2____ Level 3____ Other_____

a): _____

b): Yes____ No____

Question 7: Yes____ No____ What kind? _____

a): Yes____ No____

Question 8: Yes____ No____

YES a) Yes____ No____
b) Yes____ No____
c) Yes____ No____
d) Yes____ No____
e)

NO

a)
b) Yes____ No____
c) Yes____ No____

Question 9: Yes____ No____

Appendix C