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A Constructivist Approach to Understanding a Coach's Learning Through Mentoring

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Abstract

Research in coach education has considered various ways in which coaches learn to coach. Mentoring has received attention in recent years as a possible way for coaches to learn, yet most of the research has described only what is learned not how learning has occurred. Using constructivist theory, this thesis described how learning occurred through a coach mentoring program between swim coaches over an eight week period. The learning experiences in this study showed how constructivist theory can be used to understand learning and how future mentoring programs can be designed for the best learning opportunities for coaches and the best teaching opportunities for mentors.

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Introduction

Coaches work in a complex and constantly changing environment. The characteristics of a good coach can be difficult to define because there are many skills coaches teach, relationships to manage, goals to consider, and tasks to complete. This can make it challenging for coaches to figure out ways to become better coaches. Different models have been proposed to understand how coaches learn to coach, which are a starting point to understand coach learning and current coach education. Although there is debate about how to best describe different educational opportunities, there are some portions of coach education common to all coaches in a particular sport. For example, swim coaches in Alberta are required to complete a course with pool and classroom sessions in order to be on deck at practices and meets. While these types of educational opportunities can be beneficial, many coaches have reported dissatisfaction with this type of learning because it can be irrelevant to the context in which coaches work (Bowes & Jones, 2006).

The dissatisfaction reported by many coaches has led researchers to consider other ways coaches could learn. One possibility, reported by many expert and elite coaches, is mentoring. Mentoring provides the opportunity for coaches to learn in the context in which they currently coach and through an educational experience that could be tailored to their specific needs. While research has examined what can be learned through mentoring, little research has investigated how this learning occurs.

After coaching for a swimming season in which I felt I did not learn very much as a coach, I was considering how I could increase my learning in the next season. After reviewing the literature on mentoring, I felt this was an excellent opportunity for me to improve my coaching. There was a coach in the club in which I was currently coaching who was willing to take on the role as my mentor, and I was able to set up a study in which I worked with this mentor coach for an eight week period.

Since the literature already described what could be learned through mentoring, I decided to investigate how learning occurred through mentoring. To do this, I examined my learning experiences from this mentoring project from a constructivist perspective. The constructivist perspective asserts that learning is an active process, where the learner is constantly considering how new information fits into his or her current mental framework. This requires the learner to reflect on previous knowledge and experiences, and the teacher to take this into consideration when teaching new ideas and concepts. By considering learning in this way, I will demonstrate one way learning can be understood, and how coach educators can use mentoring in the future to provide contextual learning experiences for coaches.

Literature Review

The Complexity of the Coaching Environment

What does it mean to be a good coach? How does one become a better coach? Researchers have considered what constitutes a good coach, including characteristics such as patience, experience, good communication skills, knowledgeable about the sport, motivating to athletes, having a sense of humour, adventurous, punctual, and having a loud voice (Cassidy, Jones, & Potrac, 2004). Some characteristics, such as punctuality, are easily measured, but others, such as adventurous or having a sense of humour, are more subjective and difficult to measure. There are characteristics that may be more important in certain situations and not others, with particular athletes and not others, and with specific sports and not others (Cassidy et al., 2004).

Cote and Gilbert (2009) proposed a good coach to be an effective coach who demonstrates "the consistent application of integrated professional, interpersonal, and intrapersonal knowledge to improve athletes' competence, confidence, connection, and character in a specific coaching context" (p. 316), and defined an expert coach as someone who demonstrates this coaching effectiveness for many years. Cote and Gilbert provide a more concrete definition of a good coach, but it is still subjective and therefore alternatives measures need to be considered beyond simply the completion of a coaching course or a test. This definition also implies there is a certain amount of athlete improvement or success that leads to the recognition of a better coach. Given the ambiguity of defining a good coach, how then can coaches become better? How important is winning as compared to skill

development in showing coach improvement? Can a good coach be someone who has athletes that show significant skill improvement without winning? Or is the coach only a good coach once that improvement translates to winning? Coaches may ask themselves these questions, but there is no simple and straightforward answer. Additionally, many of the characteristics used to describe a good coach are further complicated by the complex and constantly changing environment in which coaching takes place (Jones & Wallace, 2005).

The coaching environment is complex for many reasons. For one, coaches are expected to teach athletes sport-specific and general athletic skills, including skills used during practice and competition, as well as other skills such as "healthy lifestyles, enhanced self-esteem … and leadership" (Penney, 2006, p. 33). There is debate in the coaching community about how this wide array of skills should be taught, which also contributes to the complexity of coaching. Some coaches and researchers have advocated the use of educational techniques (e.g. Jones, 2006), whereas others have placed more emphasis on models and formulas that are less individualized (e.g. Swim/Natation Canada, 1993). Coaches must figure out which methods are most appropriate for their current group of athletes, and evaluate when it is necessary to change methods or to try new ideas. This can become very complicated, as coaches may not even realize that a method is not working, or may blame the athlete and fail to change their coaching practices.

Beyond the playing field, coaches are often expected to administrate and manage teams. This includes tasks such as booking facilities for practices and competitions, organizing schedules, navigating the structure of the sport and league,

and working with parents and officials. These tasks are essential to running a team, can be very time consuming, and often fall to the coach to take care of (Hedstrom & Gould, 2004). Many coaches found it was difficult to manage all these tasks because they often worked alone (Lemyre, Trudel, & Durand-Bush, 2007), were not sufficiently educated to carry out all the tasks (Houseworth, Davis, & Dobbs, 1990), and did not have time to complete everything they were expected to complete (Hedstrom & Gould, 2004).

In addition to the tasks to complete, there are many people directly and indirectly involved in sport, such as athletes, parents, other coaches, managers, sponsors, administrators, and media. The coach has a relationship with each of these people that must be effectively managed for the coach to be successful (Jones, Armour, & Potrac, 2002). Given that each of these people comes to sport with some vested interest, it may become very complex for coaches to manage all the relationships. For example, a parent may want his or her child to have lots of playing time to ensure the child is seen by scouts from a college, whereas the league administrators may mandate equal playing time. Issues such as these can make the coach's job very difficult.

Another complicating factor is that each person involved in the sport environment, including the coach, athletes, administrators and parents, has goals that stem from the personal interests they bring to the sport. The goals a coach has may be their own, or may be prescribed by the organization, managers, parents, or athletes. Goals may be performance-oriented, such as qualifying for certain competitions, achieving time standards, or winning a competition. Goals can also be

process-oriented and focused on athlete learning, such as learning a new technical, tactical, or personal skill. Goals can also be personal or professional goals for the coach, such as learning a new tactic or completing a higher level of training. Since there are many goals from many people, inevitably some of these goals will be conflicting (Jones & Wallace, 2005). Some goals will end up abandoned, while others will become less important. This creates tension for coaches, as it is another area that must be managed (Jones & Wallace, 2005).

Evidently, there are many factors that could be a part of being a good coach and therefore becoming a better coach. In addition to the characteristics listed at the beginning of this section, there are many tasks to complete, relationships and people to manage, and goals to consider, all of which can change throughout a season or from year to year. How does a coach know what these characteristics are and how to manage the complexities of the coaching environment?

How Coaches Learn To Coach

Recent research has examined how coaches learn to coach. Many studies have focused on the learning experiences of high performance or expert coaches (e.g. Erickson, Cote, & Fraser-Thomas, 2007; Hedstrom & Gould, 2004; Lemyre et al., 2007), and some have studied coaches of developmental athletes (e.g. Wright, Trudel, & Culver, 2007). These studies have cited a variety of experiences as important to develop as a coach, which can be categorized into different types of learning. Extensive debate has taken place over what these types are, definitions for each type, and how different learning models should be organized (e.g. Mallet, Trudel, Lyle, & Rynne, 2009; Nelson, Cushion, & Potrac, 2006; Reade & Rodgers,

2009; Werthner & Trudel, 2006). Using models to organize types of learning can help coach educators to better understand how to provide education for coaches. This can be problematic though, since learning experiences may not fit exactly into a given category and by adopting one model, coaches are forced to adopt fixed terms. By using more than one model and combining the models, educational experiences can be more properly described and understood, and the power of fixed terms and the models is reduced.

Nelson, Cushion, and Potrac (2006) identified three types of learning: formal, nonformal, and informal. According to this classification system, formal learning refers to learning that is done systematically, with specific objectives that must be achieved for completion. This includes coach certification courses, such as those offered through the National Coaching Certification Program (NCCP) in Canada. Nonformal learning also includes organized, systematic learning opportunities, but differs from formal learning in that there are generally no prerequisites or assessments (Mallet et al., 2009). This can include seminars or workshops on specific topics presented to particular groups of coaches (Nelson et al., 2006). For example, a workshop on nutrition for elite swimmers would be considered a nonformal learning opportunity. Informal education is the process by which coaches learn through their environment or experiences. This type of learning can be accidental, where a coach comes to a realization about something, or sought out by looking for a specific piece of information (Nelson et al., 2006).

Werthner and Trudel (2006) also identified three types of learning: mediated, unmediated, and internal. Mediated learning refers to learning that

occurs under the direction of another person, such as the instructor of a coaching course. Unmediated learning occurs when coaches seek out specific information based on what they want to learn. Finally, internal learning involves a "reconsideration of previous ideas in the coach's cognitive structure" (Werthner & Trudel, 2006, p. 201), such as reflection on a practice session and how it could be changed or modified in the future.

While both systems allow for the organization of learning experiences into categories, some experiences may have characteristics of more than one category. For example, attending a conference (a nonformal opportunity) may also include informal learning through discussions with peers between conference sessions (Mallet et al., 2009). Similarly, in Werthner and Trudel's (2006) system, a conference would include mediated learning because someone is providing information to the coach. If the coach were reflecting on his or her own coaching situation while at the conference and drawing conclusions on their own, internal learning would also be taking place (Werthner & Trudel, 2006).

Regardless of the classification system used, there will be debate about how to best name and organize learning experiences within it. For this study, both the Nelson, Cushion, and Potrac (2006) and Werthner and Trudel (2006) terminology will be used. This was chosen because these terms accurately describe current coach education for swimming in Canada, which is the focus of this study.

Research has shown nonformal experiences to be somewhat useful in coach learning. Houseworth, Davis, and Dobbs (1990) found that high school coaches were most willing to attend nonformal learning opportunities, such as clinics and

inservices, over other traditional education experiences. Other researchers echoed the value of nonformal education as well (Salmela, 1995; Wright et al., 2007), possibly because of the ability for clinics to offer more up to date information than formal courses (Bloom, Salmela, & Schinke, 1995). Some research was less supportive, however, with coaches ranking clinics and other non-NCCP courses as less important on the list of preferred sources of coaching knowledge (Erickson, Bruner, MacDonald, & Cote, 2008).

Informal education experiences have also been found to be important and useful in coach learning. Many researchers have examined common experiences of expert and elite coaches in their development as a coach. Active learning through experience, as both a coach and an athlete, was a common theme (Rodgers, Reade, & Hall, 2007), as well as passive learning through the observation of more experienced coaches (Bloom et al., 1995; Erickson et al., 2007; Gould, Giannini, Krane, & Hodge, 1990; Irwin, Hanton, & Kerwin, 2004; Nash & Collins, 2006; Salmela, 1995). Learning through books, videos, and websites was cited by several studies (Gould et al., 1990; Irwin et al., 2004; Salmela, 1995) as was discussing coaching with peers, family, and friends (Salmela, 1995). Mentoring was often discussed as an important source of coach learning, especially in the first few years of coaching (Bloom et al., 1995; Bloom, Durand-Bush, Schinke, & Salmela, 1998; Erickson et al., 2007; Gould et al., 1990; Irwin et al., 2004; Salmela, 1995). Similar experiences were found for coaches of developmental level athletes, including learning through experience, books, videos, websites, interactions with other coaches, and mentoring (Erickson et al., 2008; Lemyre et al., 2007; Wright et al., 2007).

Overall, learning through informal experience has been found to be very effective (Erickson et al., 2007) since coaching is a "learned trade," according to Knowles, Borrie, and Telfer (2005, p. 1713), and therefore learning must take place in context. Informal experiences are also important because more time is spent in informal learning situations as compared to formal learning experiences (Werthner & Trudel, 2006), and coaches are able to learn about the culture of the sport (Lemyre et al., 2007). Finally, informal learning is useful because it allows coaches to create their own learning opportunities in areas they feel they need to know more about. For example, coaches can find books or websites on certain subjects, or talk to peers or friends about issues they are facing (Werthner & Trudel, 2006). Using Werthner and Trudel's (2006) terminology, informal learning can contain a wide range of experiences from mediated to unmediated. Describing experiences with both classification systems can clarify how learning experiences can be very different but still categorized as informal.

Formal coach education has become increasingly popular in some sports, such as swimming, as evidenced by requirements for coaches to have some level of certification through formal courses. In Canada, certification is typically through the National Coaching Certification Program (NCCP). In Alberta, swimming coaches have an educational requirement to be on deck for practice or competition. In this case, completion of the NCCP Skills Coach course is mandatory (formerly NCCP Theory 1 and Technical 1) (Swim Alberta, 2009) and is classified as mediated, formal education.

Houseworth, Davis, and Dobbs (1990) argued that coach education and certification is important to "ensure competent, qualified coaches" (p. 26). As previously mentioned, it is expected that coaches have knowledge about general sport principles and coaching techniques as well as sport specific knowledge. By requiring completion of courses that cover certain topics and an evaluation upon completion, this knowledge base can be expected by sport organizations (Robertson & Hubball, 2005).

There are issues, however, with formal education, such as time and the context of delivery. Many coaches, especially volunteer coaches, do not feel they have time to take a formal course (Hedstrom & Gould, 2004), which can be a full weekend or more and may include additional assignments. Many coaches agree that formal education is a good idea, but feel that current coaching courses are not relevant for many of their day-to-day situations (Bowes & Jones, 2006; Hedstrom & Gould, 2004). Further, while there may be an assessment or evaluation at the end of a course, many feel assessments are performed in a way that encourages memorizing content rather than understanding and applying concepts (Nash & Collins, 2006).

Overall, formal coach education courses have been criticized as low impact, despite widespread use (Erickson et al., 2007; Nelson et al., 2006). Courses of this nature give coaches knowledge and ideas, but often oversimplify coaching, resulting in coaches that are less prepared for the complex environment in which they are expected to operate (Bowes & Jones, 2006). This is problematic, according to Jones and Wallace (2005), because it provides a "cookie cutter" approach to problem

solving, such as models or formulas for coaching. Using models or formulas may work as a starting point, but the dynamic nature of the coaching environment makes it necessary to be adaptive and creative, as each situation will be somewhat novel (Jones & Wallace, 2005). The social nature of the coaching environment means that each situation will be different and will require creativity in finding a solution. In addition to creativity, coaches also need to be innovative which requires critical thinking about coaching situations and problems (Denison, 2007).

The gap between theory and reality is especially evident in novice coaches, due to the lack of context in the course content. Formal coach education often does not cover a broad enough range of topics for coaches to be educated on all the roles they are expected to fill, relationships they are expected to manage, goals they are to achieve and problems they need to solve (Hedstrom & Gould, 2004). As a remedy, researchers have promoted increasing knowledge through all types of learning in both classification systems, whether the coach is a novice or an expert (Salmela, 1995; Werthner & Trudel, 2006; Wright et al., 2007). Emphasis has been placed on the need for coaches to participate in informal learning experiences, either sought out by coaches or provided by coach educators, as opposed to allowing informal learning to occur only by chance. One experience, typically considered a mediated, informal learning opportunity and advocated by researchers, is mentoring.

What is Mentoring?

Mentoring has been used in various fields, including nursing, education, business, and coaching (Bloom et al., 1998; Jones, Harris, & Miles, 2009). With such widespread use comes different definitions offered for mentoring. Mentoring may

be a relationship that provides structural, personal, and professional support (Taylor & Stephenson, 1996). Nash (2003) defined mentoring as a relationship involving two people: an individual with more experience and expertise in a field and an individual that is less experienced. This relationship can provide learning opportunities for both the more and less experienced individuals and is based on mutual respect and trust. Along those same lines, Cushion (2006) described mentoring as someone supporting and guiding a protégé in a particular context. This type of relationship is frequently seen in the field of education, where student teachers are paired with a more experienced teacher to practice before they take on their own classroom (Jones et al., 2009).

Other definitions include mentoring as someone supporting another through transitions, assisting them in navigating complex processes that occur in a dynamic environment, or a person with more expertise and experience aiding in the development of another, both personally and professionally (Cushion, 2006). Mentoring traditionally occurs with an older person mentoring a younger person, but that is not always the case. In business, for example, peer mentoring is common, as well as younger employees mentoring older employees, especially in areas that involve technology (Jones et al., 2009). Another mentoring tradition is the one-on-one relationship. In some cases, however, such as in nursing, mentoring can occur one-on-one, in small groups, or even through e-mail or the internet (Jones et al., 2009).

Mentoring can take place in highly structured settings, with a mentor purposefully investing time to guide someone else (Bloom et al., 1998), as well as

informally, where chance encounters are a learning experience (e.g. Erickson et al., 2007). Informal encounters were more common in coaching, whereas formal mentoring occurred more often in education, nursing, and business (Bloom et al., 1998; Jones et al., 2009). Mentoring typically occurs within the same context, but can also occur across contexts. For example, an Australian lacrosse mentoring program paired coaches with a mentor in another similar sport in order to increase learning (Piltz, 1999).

As these definitions show, there is no single way to define mentoring. Depending on the context one is working in, mentoring relationships may look vastly different (Bloom et al., 1998). One common idea however, is that mentoring "involves doing something *with* as opposed *to* a trainee…and by its nature, is heavily contextualised" (Cushion, 2006, p.129). The emphasis on context is important because of the previous criticisms of coach education. One of the main issues coaches have noted about formal coach education is that it lacks context and therefore coaches found it difficult to transfer the knowledge acquired formally to real life situations. By providing intentional mentoring opportunities to coaches, perhaps that gap can be bridged.

Mentoring in Sport

Although the largest amount of mentoring research has been done in the field of education (Bloom et al., 1998), there are still many studies that highlight the use of mentoring in sports coaching. These studies show mentoring in various forms, and offer direction for the future. Many elite and expert coaches who were mentored at some point during their career found this to be a key event in becoming

an expert coach (Bloom et al., 1995; Bloom et al., 1998; Erickson et al., 2007; Salmela, 1995). Often, mentoring occurred simply due to chance or luck (e.g. Bloom et al., 1995; Erickson et al., 2007), but because it was such an important experience many studies advocated a structured mentoring program, as a mediated informal learning experience (Bloom et al., 1995; Bloom et al., 1998; Gould et al., 1990; Salmela, 1995; Wright et al., 2007). This again supports the notion of purposeful contextual learning for coaches, as opposed to simply hoping it will occur.

Research has shown mentor coaches to be a valuable resource for increasing knowledge, whether it be when learning to coach (Irwin et al., 2004; Lemyre et al., 2007) or when working toward being an elite coach (Gould et al., 1990). In addition to being a valuable source of knowledge, Erickson, Bruner, MacDonald, and Cote (2008) found coaches preferred mentoring over other ways of learning such as reading print and electronic materials, going to non-NCCP courses or clinics, and observing others. Interestingly, gaining knowledge through NCCP courses was the only form of learning ranked higher than mentoring, which indicates that coaches may still be interested in formal education, but perhaps would like to have mentoring as a part of formal education or to have it structured and deliberate like formal education (Erickson et al., 2008).

Wright, Trudel, and Culver (2007) examined mentoring in a different capacity. In their study, 35 volunteer minor hockey coaches were interviewed. Some of the coaches had a Coach Development Director (CDD) who acted as a formal mentor and facilitated coach development for all the coaches in their league. The CDD helped coaches to work together to share ideas, solve problems, build a

sense of community, and motivate and encourage the coaches throughout the season. The coaches involved in this project appeared to appreciate this type of mentoring, which indicates it is valuable to consider mentoring in formats other than a traditional one-on-one relationship. Mentoring relationships in these studies mainly took place when the mentored coach was a novice, in the first year or so of coaching (e.g. Erickson et al., 2007; Lemyre et al., 2007; Salmela, 1995). This is not to say, however, this is the only time mentoring could take place. In education research, it has been suggested that mentoring may be useful at other points during a teacher's career, such as when the teacher hits a plateau (Furlong & Maynard, 1995). This could be a valuable tool for coaches as well.

What Can Be Learned From Mentoring?

As previously discussed, many coaches cited mentoring as a valuable source of knowledge. But what exactly are coaches learning from mentoring? Research found general and sport specific skills, as well as personal skills can be learned through mentoring. Robertson and Hubball (2005) described a mentoring program that involved novice, intermediate, and advanced youth soccer coaches. While this study was not an empirical research study, it does have some a useful description of a mentoring program and provides good ideas for future mentoring programs. Depending on the level of the coach, different priorities were identified. For example, novice coaches focused on goal setting, encouraging the use of a coaching logbook, practice session learning, and game specific game situations. Intermediate coaches focused more on identifying strengths and weaknesses, developing a coaching philosophy, creating learning-centered practices and games, and

developing a more in-depth coaching book. Advanced coaches focused on similar priorities as intermediate coaches, but put more emphasis on professional development opportunities to create a coaching portfolio (Robertson & Hubball, 2005).

Other research found that when coaches were mentored, they learned technical and tactical skills, as well as beliefs and values about the sport (Bloom et al., 1998). Nash (2003) found mentoring was useful in building confidence, developing knowledge and skills, and providing opportunities to apply theoretical concepts to practical coaching situations. Mentoring also helped coaches to learn the culture of a sport (Lemyre et al., 2007) and develop a coaching style (Gould et al., 1990). The diverse learning that can take place during mentoring is highlighted by the common theme of context. The importance of learning in context again demonstrates the importance of providing learning opportunities such as mentoring for coaches.

The majority of the mentoring research in coaching has come retrospectively. Many studies interviewed coaches who are now at an elite or expert level, and found mentoring was a useful part of their education and therefore encouraged mentoring for future coach education (e.g. Bloom et al., 1995; Bloom et al., 1998; Erickson et al., 2007). Very few studies examined the learning that took place while mentoring was ongoing. This may be because mentoring is frequently unplanned and "was often the case of being in the right place at the right time" (Bloom et al., 1998, p. 274) rather than the result of participating in an organized mentoring program. By using mentoring as an intentional informal learning opportunity, research could then

examine how mentoring should be set up, how structured it should be, what characteristics a mentor should have, how mentors should be trained, how mentoring programs can be made more widely available, and how the mentoring process is contributing to coach learning (Bloom et al., 1998).

Nash (2003), Robertson and Hubball (2005), and Piltz (1999) examined ongoing mentoring programs, and some of these questions were answered through their research. Nash (2003) studied a mentoring program in a university coaching degree. The program was set up with students in their third year of a university coaching program who worked with a mentor for a 36-hour placement. In the first year of the program, students chose their own mentors, whereas in the second year, the university chose the mentors. In the first year of the program, 58 students participated, in the second year, 57 participated.

In terms of characteristics of mentors, the top five qualities reported by coaches and mentors that mentors should possess were: effective communication skills, knowledge of their sport, experience, approachability, and enthusiasm. Mentors had a minimum five years experience and level 3 certification (Nash, 2003). The specific way the mentoring relationship was structured was not considered in this study. There was also little consideration as to how mentors should be trained, other than having a minimum amount of experience and certification. Lastly, and perhaps most importantly, there was no consideration for making mentoring programs more widely available. This program could be considered formal education because the students were required to participate for credit and there was an evaluation process since it took place in a university program. Without that

sort of incentive, would it be possible to get coaches to participate in a mentoring program this structured? It is important to consider how a mentoring program can be widely used yet still applicable to each coach's individual context.

Robertson and Hubball's (2005) twelve week soccer coach mentoring program revealed a potential set-up for a mentoring program, possible characteristics of a mentor, and issues that could hinder a mentoring relationship. This mentoring program had four distinct stages. First, a more formal introductory phase, where the mentor and coach built rapport and determined the goals of the program based on their specific circumstances. The second phase involved the mentor observing the coach and offering resources as needed, as well as ensuring coaches had a chance to have as many experiences as possible. Third, the developmental phase involved identifying more specific goals and the mentor encouraging different types of feedback such as video analysis and self-reflection. The final stage was the decentralizing and self-regulatory phase where the mentor's role slowly decreased as the coach focused on creating his or her own goals and using self-reflection (Robertson & Hubball, 2005). This illustrates one way a mentoring relationship could operate. To assist coaches and coach educators, it would be useful to know if there were stages or parts of stages that seemed more or less important for learning, which was not included in this study.

Characteristics of mentors included the ability to offer professional guidance, such as codes of conduct with other coaches, athletes, and parents, as well as to teach customs and cultures of the sport world. Mentors modeled strategies such as teaching effectiveness and practice planning, as well as facilitated the development

of a coaching philosophy, helped to create personal and developmental goals, and encouraged critical thinking and reflection. Mentors acted as an agent to introduce coaches to people in the sport community who could help them to expand their knowledge and grow their programs (Robertson & Hubball, 2005). These characteristics and roles of a mentor demonstrate some aspects of being a mentor, but it is unclear as to how mentors were given the responsibility of mentoring. Was it simply experience and certification, as in Nash's (2003) study? Are those sufficient criteria for assigning the mentor such responsibility? Does having such requirements limit the potential for mentoring relationships?

In Robertson and Hubball's (2005) study, seven issues were addressed that could hinder a mentoring program. The authors felt that addressing these issues was vital to the success of the program. The suggestions that came as a result of this were: using mentoring for both personal and professional development, having the commitment and support of the clubs and league, having coaches and mentors matched voluntarily, using the title "coach" even for novice coaches, mentors having a plan for using resources and time, mentors not being obtrusive to the coach's team, and both the mentor and the coach having realistic goals and expectations from the program. Considering these suggestions may be important in the success of future mentoring programs.

Piltz (1999) highlighted the key features and structure of an established lacrosse mentoring program in Australia. In this program, novice coaches worked with a mentor in an environment that allowed for questioning and trying out ideas from coaching courses. The mentor did not act as an assessor, but rather as

someone who offered ideas and suggestions based on what the coach experienced. The program had two levels. In level one, the coach spent ten hours apprenticing with a more experienced coach and filled out a work booklet to ensure certain experiences were covered during the mentoring. In order to mentor, coaches had to either have done the apprenticeship themselves, or completed a workshop on mentoring. Level two involved the coach doing several self-directed projects with a lacrosse mentor and a mentor in another, similar sport (Piltz, 1999).

This study showed how a formal mentoring program could be set up, as well as how a mentor could be trained. By giving specific details on how a program can be set up, it is possible that a program like this could become more widespread. Unfortunately, learning outcomes were not given for the program, other than that it was found to be a positive experience for both the mentor and the coach because it allowed new relationships to be built, coaches to learn in a non-threatening, contextual environment, and mentors to contribute back to their sport (Piltz, 1999). This program seems to be effective for lacrosse coaches in Australia and may be a good starting point for other sports, or the same sport in another setting.

In addition to understanding how programs could or should be set up, the characteristics and training of mentors, and the applicability of programs on a larger scale, it is important to question the learning objectives of a mentoring program. What is an appropriate way to determine how coaches learn through mentoring? To answer this, I will examine one way learning might occur for individuals in the context in which they operate.

A Constructivist Approach to Learning

One perspective on learning that focuses on understanding individual meanings and "reject[s] the notion of the existence of an objective reality" (Light & Wallian, 2008) is constructivism. A constructivist perspective views learning as an active process, where the learner constructs new knowledge based on previous knowledge and experiences (Rovegno & Dolly, 2006). Constructivism developed out of the ideas from two key theorists, Jean Piaget and Lev Vygotsky.

Beginning in the 1960s, Jean Piaget theorized that children learned best through experiences and by actively problem solving when presented with new information (Rovegno & Dolly, 2006). He also proposed that as new information is presented that is in conflict with what is already known, children must test the new idea against the old to come to a new, possibly changed, understanding (Follari, 2007). In the 1980s, these ideas were extended by Lev Vygotsky to include the social and cultural environment learners operate in, creating a more complete picture of learning. Key points in Vygotsky's theory included the importance of constructing knowledge through social interactions and working in an environment that learners are challenged to think, through interactions with others, slightly beyond what they currently know (Follari, 2007; Schunk, 2004).

By combining the ideas of Piaget and Vygotsky, constructivism asserts that learning occurs through interactions, exploring and testing new ideas, inner reasoning, reflecting on what is already known, and challenging current thinking, with consideration of the learner's experiences, background, and developmental level (Follari, 2007; Rovegno & Dolly, 2006). Given that coaches come from a

variety of backgrounds, bring with them many experiences, and have a wide array of prior knowledge, constructivism is an appropriate lens to view coach learning. Coaching knowledge may be acquired from several sources, but appears to be most often from encounters with other coaches, and to a lesser extent, coaching courses, experience as an athlete, and reading new research (Reade, Rodgers, & Spriggs, 2008). Although many of these experiences have been identified as useful for increasing coach knowledge, the extent to which each experience is valued will vary depending on the individual coach's circumstances (Werthner & Trudel, 2006). Moreover, simply having these experiences does not necessarily equate to competency as a coach (Gilbert & Trudel, 2001). To learn, according to constructivism, coaches must be active learners, taking these experiences and reflecting on how this new knowledge fits into their current mental framework for coaching (Schunk, 2004). Although learning through mentoring has not been studied as a constructivist process, the four core ideas of constructivism provide a way to understand how learning may occur for a coach that is mentored.

First, learning requires deep understanding to allow generalization of concepts and transferability of knowledge to new situations (Rovegno & Dolly, 2006). Since each situation a coach encounters is going to be slightly different from previous situations, it is necessary to have a deep understanding of coaching concepts to know when or where to apply principles that are already known, or to seek out new ideas. Coaches will already have some ideas and principles to work from (for example, what is learned in a coaching course or learned as an athlete),

and mentoring can be one way to seek out new ideas, or even to help understand whether previous knowledge is suitable in a given situation.

The second core idea is that previous experiences, knowledge, beliefs, and values will influence new learning and therefore it is necessary to consider what the learner brings to the learning situation and how he or she can best be taught (Rovegno & Dolly, 2006). The mentoring relationship has the potential to provide a good setting for this because the mentor can adapt his or her teaching based on the previous knowledge and experience of the coach being mentored.

Third, learning is an active process, requiring the teacher to facilitate the construction of knowledge and the learner to be a willing participant. In the case of mentoring, the relationship should be voluntary (Bloom et al., 1998), meaning the mentor should be willing to facilitate the process and the coach willing to learn and be actively engaged in the learning process. Most coaches have a desire to improve their athletes' performances and since coach learning is one way this can occur (Reade et al., 2008), coaches who choose to participate in mentoring are likely to be motivated and willing participants.

The final core idea is that learning occurs through social interactions and in a social and cultural context (Rovegno & Dolly, 2006). Coaches have emphasized the importance of learning in the context they work in and have found that learning that takes place outside the context is not as valuable (e.g. Knowles et al., 2005; Lemyre et al., 2007). Mentoring makes context a core component and therefore aligns with the principles of constructivism.

Given that coaching takes place in a complex environment, it follows that learning will be complex as well. Constructivism views learning as "complex and fundamentally nonlinear in nature" (Fosnot & Perry, 2005), and therefore it is fitting to use these core ideas to understand how learning occurs through mentoring (Nelson et al., 2006). Currently, research in coach education supports the use of mentoring, describes characteristics mentors possess, illustrates ways mentoring programs could be set up, and explains potential learning outcomes. Less consideration has been paid, though, to how this learning has occurred. This has prompted me to consider how using constructivism as a framework could help to understand one way learning may occur. Although widely used, many coaches are not satisfied with formal education (Erickson et al., 2007; Nelson et al., 2006) and given the potential for learning through informal experiences such as mentoring, it would be a valuable contribution to the current research on coach education to understand how learning is occurring through mentoring.

Understanding Learning Through Mentoring

By focusing on the coach as the learner, I would like to examine whether the experiences of a coach during a mentoring program can explain, from a constructivist perspective, how learning occurs through mentoring. Coach knowledge comes from a variety of sources and each coach brings with them a unique set of beliefs, values, and skills when they coach. When coaches are presented with a new idea, it may conflict with knowledge they already have. The coach can integrate the new idea with current ideas through assimilation, or change current beliefs by creating new knowledge through accommodation (Follari, 2007).

By looking at a coach's experiences in this way, it may be possible to gain an understanding about how coaches learn through mentoring.

The purpose of inquiry, the role of values, and the voice of the researcher are other issues in constructivism that help to understand how learning can occur through mentoring. The purpose of inquiry in constructivism, according to Guba and Lincoln (1994), is to understand how an individual's ideas are constructed and reconstructed. The researcher is considered a participant in this process because the constructions of the researcher are also examined. Looking at the way coaches have constructed knowledge and how that changes through interactions with a mentor will aid in understanding how learning occurs through mentoring. In constructivism, values are important in shaping the questions asked in a study and understanding the meaning of the facts found through research. The voice of the researcher is a "passionate participant" (Guba & Lincoln, 1994, p. 112) because he or she is involved in constructing and reconstructing knowledge throughout the study. Sparkes (1992) explained that data collected through constructivist research is not free of interpretation and that as researchers, "we cannot hope to see the world outside our place in it – all that we can ever have are various points of view that reflect the interests, values and purposes of various groups of people" (p. 27). Given that I am a coach and am interested in understanding coach learning, it is impossible for me to objectively study this area. It is inevitable that I would interpret and understand the results of any data through my past experiences, current knowledge, beliefs, and values.

To take this one step further, I propose the role of the researcher to be so important in constructivist research that he or she can be the subject of study. Using the researcher as the subject of study, while not common in constructivism, is well accepted in other areas of qualitative research. Autoethnography, for example, allows the researcher to study "one's own culture and oneself as part of that culture" (Patton, 2002, p. 85), using personal experiences to provide insights. Although I will not be examining culture, I will be using personal experiences to provide insights on coach learning. According to the principles of constructivism, using the researcher as subject is a reasonable way to conduct research and gather data to understand coach learning. For learning to occur, learners must be "actively engaging various cognitive processes to understand, reason about, reflect on, evaluate, and analyze information" (Rovegno & Dolly, 2006, p. 246). If the researcher is the subject, he or she can ensure these processes are occurring through active engagement and reflection on experiences. Also, the importance of prior learning and experience can be better understood through the researcher as subject. Since the researcher is already interpreting the data through previous knowledge and experiences, acknowledging and making this part of the research will provide a better understanding of how learning occurred for the coach. As a coach who is interested in furthering my knowledge, I intend to use my own experiences to understand coach learning. Therefore, my study will focus on the following research question: How does learning occur through mentoring when my experiences as a coach in a mentoring program are examined from a constructivist perspective? To answer this question, it is necessary to use a research method appropriate for constructivist

theory. The following chapter will examine the constructivist perspective in further detail, explain the interpretive paradigm, and outline the method used to answer this research question.

Methods

Before explaining the research method used in this study, it is important to understand the constructivist perspective further. In constructivism, learning is an active process where new knowledge is constructed based on previous knowledge and experience (Rovegno & Dolly, 2006). This means that knowledge is subjective and what one views as reality may be different from what others view as reality. Guba and Lincoln (1989) listed some foundational assumptions of constructivism, including that facts are subjective because they are interpreted within a value framework, truth is subjective because it comes about through consensus between various constructors, and the facts observed must be interpreted within the context they occur. Since I am examining mentoring from a constructivist perspective, it is important to consider the methodological implications that come from using this perspective. These methodological implications come from the ontology and epistemology of the paradigm used, and carry with them certain ways of conducting and interpreting research (Sparkes, 1992).

The Interpretive Paradigm

Broadly, constructivism is part of the interpretive paradigm. A paradigm is a way of viewing the world and outlines fundamental assumptions made when making sense of what is viewed (Henderson, 1991; Sparkes, 1992). Since all facts are subjective, in the interpretive paradigm the fundamental assumptions are that knowledge is constructed through individual processes of attaching meaning to these facts (Markula, Grant, & Denison, 2001). Henderson (1991) added that facts

are best understood in the context they occur and that because individuals construct meanings, reality is subjective and not the same for each person.

The interpretive paradigm, through its fundamental assumptions, points to a research approach that "allows us to look at ourselves and how our ideas reflect the social reality of the world" (Henderson, 1991, p. 10). Working under this paradigm, certain ontological assumptions exist. Ontology asks questions around the nature of existence and, in this paradigm, questions about the nature of the social world. The social world is viewed as internal-idealist and relativist (Sparkes, 1992). This means there are many interpretations of reality, therefore reality is something that occurs in the mind (i.e. internal). Since many interpretations are possible, reality becomes relative (Sparkes, 1992). A relative reality does not mean the social world does not advance, but rather that by considering new ideas and searching for constructions that are more sophisticated and better informed, researchers can understand the context of the participants in greater depth (Sparkes, 1992).

These ontological assumptions lead to an epistemology that makes assumptions regarding the nature of knowledge. In the interpretive paradigm, knowledge is considered subjective and interactive. Subjective means that knowledge can be experienced, and interactive refers to knowledge occurring through interaction with others and the environment (Sparkes, 1992). Both of these descriptions of knowledge describe the nature of knowledge in constructivist theory and therefore point to the importance of understanding learning in context.

Finally, the epistemological assumptions of the interpretive paradigm point to a methodological approach that should be taken when conducting research in this

paradigm. First, the methodology is ideographic, that is, "based on the view that to understand the social world we need to gain first-hand knowledge of the subject under investigation" (Sparkes, 1992, p. 14). Further, since in the interpretive paradigm "the focus is only to understand subjective experiences" (Henderson, 1991, p. 25), it is valuable to use small or single samples to gain a deeper understanding of a particular area (Patton, 2002). Based on the assumptions and foundations of constructivism, the following section will outline the specific details on the data collection procedures and how this analysis will occur to explain learning through mentoring from a constructivist perspective.

Data Collection

To answer the research question in this study, I participated in a mentoring program with a more experienced coach. I set up the mentoring program, not my mentor coach. I sought out the mentor coach after realizing there was an opportunity for me to learn through this type of program. It is common for coaches to seek out mentors or take advantage of working with other coaches who are available (e.g. Bloom et al., 1998). In my case, there was an experienced coach within my swim club willing to take on the role of my mentor. Mentoring, while not specifically suggested as a technique for learning through constructivism, is similar to apprenticeships in constructivism. Apprenticeships are described as a novice and an expert working together in context, allowing learning to occur through social interactions (Schunk, 2004). I have chosen to use the term mentoring, rather than apprenticeship, because it is the term used throughout current coaching research.

This mentoring program took place over eight weeks of the competitive swimming season. Eight weeks was chosen based on the time of year the mentoring took place, as well as on previous mentoring studies. This study occurred during the swimming long course season. Long course season was sixteen weeks this year, culminating in July with Age Group Nationals. At the end of the eighth week there was an important meet for our club because it was at this point swimmers were to be qualifying for provincial meets or, if that had already been accomplished, Age Group Nationals. By working with my mentor for these eight weeks, I was able to experience a full training cycle, or macrocycle. The long course season had two macrocycles, each ending with a swim meet that was the focus of training for the macrocycle (Swimming/Natation Canada, 1993). Additionally, my study was similar in length to previous studies that examined mentoring. In Nash's (2003) study, coaches worked with a mentor for 36 hours. Piltz's (1999) study only required 10 hours of work with a mentor, and Robertson and Hubball's (2005) study took place over 12 weeks. I worked with my mentor approximately 3.5 to 5.5 hours a week, totaling about 36 hours, with additional hours at swim meets. Although this is not as many weeks as Robertson and Hubball's study, the total hours and time of the season I worked with my mentor provided a sufficient amount of time to collect data.

I attended one of my mentor's practices each week and my mentor attended one of my practices every other week. The swimmers we coached are described in the following section. Additionally, we met once a week for her to provide feedback on my coaching and to discuss issues and problems, and attended two swim meets

together during the eight week period. I also attended coaches meetings and other educational opportunities that occurred during the data collection period. These experiences were chosen, in consultation with my mentor, because of the time of year during which the program took place and because of the importance of context in constructivism. All of these experiences are typical coaching experiences, part of the regular context in which swim coaches work. This provided the greatest number of learning experiences, and showed how my previous experiences, current knowledge, beliefs, and values influenced how I learned and how I changed as a coach.

Based on previous constructivist research, Rovegno (1992) suggested several methods of data collection, including interviews, observation of teaching sessions, personal journals, and field notes. In this study, I examined how learning occurs through mentoring, and therefore chose to use a personal journal to collect my data. Using a journal was appropriate for this situation, because it allowed me to keep notes about what I did as a coach in the context in which my experiences occurred. I then reviewed the notes to analyze what changes occurred in my coaching and therefore what I learned through the mentoring program, with consideration to my previous knowledge and experiences. By taking notes about what was happening, I focused on experiences in their context, which is an important part of learning in constructivist theory. Also, by writing my experiences, I was able to analyze my experiences after they occurred and consider how my previous knowledge and experiences influenced my learning in given situations.

Although journal writing has not been used in previous mentoring research, constructivism supports the use of a journal. Sparkes (1992) explained that "no method of data collection is inherently linked to any one world view" (p. 16), therefore, as long as a method will allow the researcher to answer the research question within a given paradigm, it can be used. Constructivist theory and the interpretive paradigm focus on understanding subjective experiences and how knowledge is constructed, while acknowledging the biases of the researcher. By using a journal to track my experiences, I acknowledged these biases both when initially recording experiences and when I looked back on my experiences to analyze the data.

Journals are not typically used in constructivist research, because much of the research has focused on how students learn in a classroom that uses constructivist principles (Rovegno & Dolly, 2006). In these situations, observing teachers, interviewing teachers and students, or collecting field notes on what is happening in a classroom are appropriate methods of data collection. For my study, however, I examined my own experiences. By having an outside observer watch me coach or interview me about how I coach, I may have been confined to analyzing incidents that were not the best learning experiences I had while working with my mentor. Therefore, writing a journal about my experiences allowed me to have access to the greatest number of experiences to analyze, with consideration to my previous knowledge and experiences.

Journal writing or keeping a log book is a common practice in coaching. Schempp, McCullick, and Mason (2006) cited journal writing as a way for coaches to

develop toward an expert coach. For swim coaches, keeping a log book is an important part of coaching. To receive certification, the coach's log book is reviewed to ensure he or she is keeping track of attendance, workouts, and other pertinent details (K. Dennis, personal communication, October 3, 2009). My current season log book was used as the basis for my journal in this study. The following section will explain the setting of my study and the procedure I used to collect data in my journal.

Setting

The setting of this study was through a local club with whom I was already a coach. I started coaching with this club in the fall of 2008. Throughout this study, I have referred to this club as the Sharks. My data collection took place during Sharks practices, meetings, and swim meets, as well as meetings with my mentor, and other coach learning experiences that occurred during the data collection period. The coach involved in the study was given an information sheet describing the study and signed a consent form indicating willingness to participate in the study. Anyone referred to in this study has a pseudonym to protect their identity. Swimmers were not used in this study, as I focused on my learning as a coach and with my mentor coach, not on the swimmers' learning or development. The study was approved by the University of Alberta Research Ethics Board prior to the study beginning.

Since I was already a member of the coaching staff for this team, I was able to work with a more experienced coach to create the mentoring program used for this study. My mentor, Laura, was willing to mentor me by allowing me to observe and assist with one of her practices each week, by observing me coaching my regular

practices once every other week, and by meeting with me once a week to discuss issues or problems I was having or answer questions and brainstorm ideas with me. We also attended two swim meets together and regular coaches meetings during this time. These experiences were chosen as they reflect the typical context a swim coach works in, based on my experience as a coach for the past 10 years.

In addition to the experiences listed above, I also attended other opportunities that became available during the data collection period. Often in swim coaching other opportunities arise, such as covering a practice for another coach or combining practices when some swimmers are away at a meet. I covered several practices for other coaches and attended a coaching conference in California. Patton (2002) explained that research design can be naturalistic to a degree. While some parts of the study were set up in advance (e.g. practices, meetings, swim meets), other opportunities arose that were valuable learning experiences and therefore it was important to be open to these experiences.

The swim groups in the Sharks were structured for athletes to move through the club from the introduction to competitive swimming (Level 1) to national level swimming (Level 6), as shown in Figure 1. The groups to the side of the main column (Levels 7 and 8) were alternative paths some swimmers took in order to move through the club. I will briefly explain each group and my involvement with the groups to illustrate where my experiences occurred throughout this study.

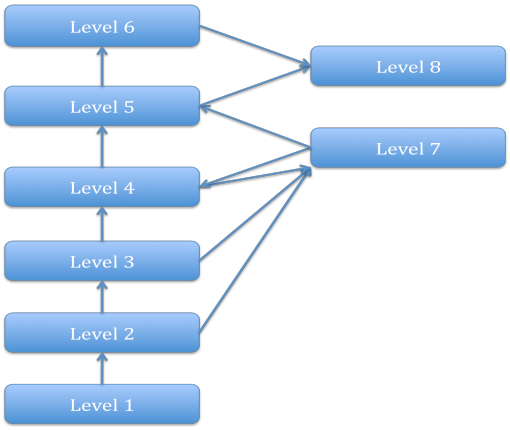

Figure 1. Sharks Group Structure

Each group had specific objectives, based on the Long Term Athlete Development (LTAD) model for swimming set out by Swimming/Natation Canada (2008). Although the groups in the Sharks were not an exact fit to each stage of the LTAD, using the model gives an approximation of the swimming ability of each group. After Level 1, all groups also had performance goals in the form of meeting specific time standards.

In Level 1, the focus was on technique and introducing swimmers to the sport. The majority of the time was spent learning the four strokes and the rules for swimming each stroke. Swimmers competed in local, introductory swim meets. The Level 1 program had 3 groups. I was responsible for coaching Level 1A and 1B. Level 1C was run out of a different pool and coached by Christine. Level 1 swam three times a week, twice at their own pools, and once together at a different pool. Laura observed one of these practices every other week to provide me with feedback on my coaching.

Level 2 also had 3 groups. Levels 2A and 2B were coached by Alan, and 2C by Christine. Level 2 swam four times a week, with a focus on swimming technique,

endurance, learning to race, and learning good training habits. Swimmers in this group were attempting to qualify for Alberta Age Group Trials, which was the first level of provincial competition. I helped out with Levels 2A and 2B twice a week, and my role was to assist Alan with anything he required help with, such as stroke corrections, recording times, or giving swimmers extra help.

In Level 3, swimmers were working towards qualifying for Alberta Age Group Trials if they had not already made the cut in Level 2, or to qualify for Alberta Age Group Provincials, which was the second level of provincial competition. Swimmers at this level were focusing on technique, endurance, flexibility, race strategy, how to prepare for swim meets, and good training habits. The Level 3 program had 2 groups, coached by Eric and Fred. I did not have much involvement with this group, other than making sure they were getting ready for swimming by stretching if their coach is not at the pool yet and occasionally covering practices as needed.

Swimmers in Level 4 were working toward qualifying for Age Group Nationals. Swimmers in this group were working on swimming technique, endurance, flexibility, introductory strength training, mental skills for racing, race preparation, and good training habits. There were two level 4 groups, one coached by Eric and the other by my mentor, Laura. One night a week, all Level 4 swimmers were together and I assisted with the group for that practice. My role was to observe Laura coaching and learn from her as she coached her swimmers. I also assisted with whatever Laura and Eric needed help with, such as stroke correction and taking times.

Levels 5 and 6 were senior groups with a focus on qualifying for Age Group and Senior Nationals. Swimming technique was still a focus, along with endurance, flexibility, muscular strength, power, advanced race preparation, and mental skills. Cameron coached Level 6 and was the Sharks Head Coach, and Don coached Level 5 and was the Assistant Head Coach for the club.

Levels 7 and 8 provided an alternative way of moving through the program. Level 7 was for swimmers 13-16 years old who were too old for Level 3 or 4, but not ready or able to move to the next group. Some swimmers were trying to improve technique or training skills in order to move up, others swam as a secondary activity, and therefore did not want the commitment of a senior group. Level 8 had a similar function for swimmers 15 years and older. Some swimmers in this group were former senior group swimmers who no longer wished to swim at that level because of the commitment required or because they had an injury and could not train at that level. Others swam in this group for fitness and were in the "Active for Life" stage of the LTAD (Swimming/Natation Canada, 2008). Katie coached Level 7, and Fred coached Level 8. I did not have much involvement with Levels 5-8, aside from occasionally covering practices as needed.

My regular coaching schedule was as follows:

Day	Time	Description
Monday	4-6:30pm	Assist with Level 2A and 2B
Tuesday	4-5pm and 6-7pm	Coach Level 1A and 1B
Wednesday	4-6:30pm	Assist with Level 4
Thursday	4-5pm and 6-7pm	Coach Level 1A and 1B
Friday	4-6:30pm	Assist with Level 2A and 2B
Saturday	9:30-11am	Coach Level 1A, 1B, and 1C

Recording Experiences

In order to record the experiences I had during the data collection period, I kept a journal of my experiences. As previously described, writing in a journal allowed me to focus on my experiences in the context they occurred, as well as look back and analyze the experiences during and after the data collection period. I used my coaching log book as the starting point for my journal. My log book had the practice for each day in it and gave me a place to make notes during and immediately after the workouts, as well as at swim meets. During practices when my mentor was not observing me, I recorded my practice on a voice recorder. This allowed me to review the practice when I wrote the journal entry for that day. When my mentor observed my practices, she used the Coaching Observation Form (see Appendix A), which allowed her to make observations and notes that were then discussed at our weekly meeting. When I attended a meeting, I took notes in my log book for reference during the meeting.

When I returned home after practice, a swim meet, or a meeting, I added to the notes from my log book by answering the questions in the journal question guide (see Appendix B) I developed based on Richardson's (1994) guide to writing notes. She advised dividing notes into four types:

1. Observational Notes: This section had the practice for each day as written by the coach of that group. I noted any changes made during the practice and why these changes were made. I recorded the attendance for my practices and any other observations I made about the practice, such as ideas that did or did not work and why, new ideas to try in the future, or specific areas to

work on with certain swimmers. At swim meets, my observational notes included times and feedback for my swimmers' races, as well as general observations on what the group was doing well at or needed to work on. If I did not have any swimmers at the meet (for example, at the meets I attended with my mentor), I included observations and noted anything to discuss with my mentor at our weekly meeting. At meetings, whether with the whole coaching staff or just with my mentor, I recorded what was discussed and any ideas or feedback I received. This section also included any relevant email correspondence that occurred during the data collection period.

2. Methodological Notes: This section included my coaching schedule for each week, including practices, meetings, and swim meets. If there were any changes to the schedule, they were noted here. Any questions or concerns I wanted to discuss with my mentor that were not already noted in the Observation section were recorded in this section in preparation for our meetings.
3. Theoretical Notes: In this section, I critiqued my experiences and attempted to link constructivist theory to these experiences. Also, if there were alternative interpretations for my experiences, I recorded them here.
4. Personal Notes: In this section, I recorded any thoughts or feelings I had about the research process. Richardson (1994) described this section as a place to record all feelings, as these feelings affected the research process and should be recognized.

My journal was typed to ensure all applicable questions were answered and to provide more organized data for analysis. The journal was printed periodically so the whole journal was available, along with my log book, in a hard copy for data analysis. To protect the privacy of my mentor, my written log book was stored in a locked filing cabinet and any typed notes were in a password protected file on my personal computer. Files were backed up on an external hard drive, and all entries (written or typed) were dated.

Since constructivism asserts the importance of learning in context, by keeping a record of my experiences I documented several learning situations throughout the data collection period. I then analyzed my experiences using the core ideas of constructivism to demonstrate how learning has occurred. As the data was recorded and after data collection was complete analysis took place, which is now described.

Data Analysis

In qualitative research, analysis of the data begins as data is collected, rather than waiting until the data collection is complete (Patton, 2002). This allows the researcher to ensure the data collected is pointing towards an answer to the research question, and that unneeded data is not collected. It is important, however, to make sure that data that could be useful in the final analysis is not filtered out, so the researcher must be careful in the initial analysis (Patton, 2002). In this study, I reviewed the data throughout the collection period to ensure I was collecting relevant data. At the end of each week I printed a hard copy and reviewed my

journal entries to ensure they were complete. I added more details if needed to the journal entries.

Using different types of notes helped to keep the content of my notes organized, and helped to get more detail out of my record keeping. Although this process was not specifically designed through constructivist theory or for mentoring, it allowed me to reflect on all the coaching related experiences I had without being constrained by having to answer specific questions in interviews or only reflect on what happened at practice as observed by an outsider. This allowed me to analyze the experiences in the context they occurred and through my previous experiences and knowledge, which are important components to understanding learning from a constructivist perspective.

Once the data collection was finished, I reviewed the completed journal to "get a sense of the whole" (Patton, 2002, p. 440). I highlighted sections that showed an incident where I learned something or made a change in my coaching. I had many learning experiences with and without my mentor. While it could be valuable to examine all learning experiences, the focus of this study was on the learning that occurred while working with a mentor not on the differences in learning with and without a mentor. In order to keep the results focused on the research question, learning experiences not involving my mentor were not used for data analysis.

According to previous mentoring research (e.g. Bloom et al., 1998; Nash, 2003), learning can be expected from mentoring in four general areas: technical skills, interactions with others, personal development, and the culture and structure of the club and sport. As I did my initial review of my journal, I noticed my learning

experiences could be classified in some of these areas. To classify my experiences, I took the passages involving my mentor, listed them on a separate sheet and coded the experiences based on what was learned. I found I learned in three of the areas: technical skills, interacting with others, and personal development. I selected experiences from each of these areas to provide a picture of the learning that took place during the study. I then used the four core ideas of constructivism to show how learning occurred in each experience and therefore how learning occurs through mentoring. The four core ideas of constructivism are: that learning requires a deep understanding to allow generalization and transferability of knowledge, that previous experiences, knowledge, beliefs, and values will influence new learning, that learning is an active process, and that learning occurs through social interactions (Rovegno & Dolly, 2006). I did not find learning experiences in the area of culture and structure of the club and sport during this study, and possible reasons for this are discussed in the following chapter.

Judging Quality

In qualitative research, measures such as validity and reliability cannot be used in the same way as in traditional quantitative research. The concepts of reliability and validity are still used but are measured in a different way. Patton (2002) outlined several criteria used to judge quality in qualitative research, including credibility, transferability, dependability, and confirmability, that can be used to establish trustworthiness, which is comparable to rigor in quantitative research. There are also several criteria for quality that are specifically based on the assumptions of constructivism.

Trustworthiness involves four criteria that qualitative researchers can use to demonstrate goodness or quality in a study. The first criterion, credibility, is similar to internal validity in the positivist paradigm (Guba & Lincoln, 1989). Credibility is looking to establish whether the results are "credible or believable from the perspective of the participant in the research" (Trochim, 2005, p. 126). Guba and Lincoln (1989) proposed several ways credibility can be established which can be used in this study, including significant time spent by the researcher in the context of the study, in-depth observation for a substantial period of time, searching for cases that challenge the researcher question. I spent a significant amount of time in the context of study, both before and during the data collection period. As I was already a coach with the Sharks, I was aware of the context in which I was operating, and spent a substantial amount of time gathering in-depth observations for my journal. Since I had a journal of experiences to analyze for this study, I was able to examine the journal for experiences that challenged my research question. This allowed me to refine the answer to the question to provide the most substantial answer as to how coaches learn through mentoring. Credibility can also be established by considering progressive subjectivity, which was described by Guba and Lincoln (1989) as "the process of monitoring the evaluator's…own developing construction" (p. 238). This takes into account what the researcher is bringing with him or her into a study (previous knowledge and experiences, beliefs, and values) and the constructions of the researcher throughout the study. As the subject of this study, I was able to focus on what I brought to the study and how this impacted my

learning through mentoring. Since this was a key component of my study, I was able to incorporate this criterion and support the credibility of my study.

Transferability, the second criterion of trustworthiness, refers to how results from a study can be applied or generalized to other contexts and is comparable to external validity in the positivist paradigm (Trochim, 2005). A researcher can establish transferability by describing the context of their study as thoroughly as possible so future researchers can have the most information possible about the situation in which the study took place. Future researchers are then responsible for reviewing the study and determining the applicability of the results to his or her context (Guba & Lincoln, 1989; Trochim, 2005). For my study, I provided as many details as possible about the club and the coaches I worked with, as well as details specific to the experiences I had and the background information relevant to understanding these experiences from a constructivist perspective. These details will allow future researchers the best basis for evaluating the transferability of my results to other contexts. Other contexts may include other sport contexts or transferring the ideas to other constructivist studies.

The third criterion, dependability, is parallel to reliability in quantitative research, and seeks to "account for the ever-changing context within which research occurs" (Trochim, 2005, p. 126). Not only is it important to describe in detail the research procedure, but also to note any changes to the procedure or the context of the study throughout the data collection period (Guba & Lincoln, 1989). I described my data collection and analysis procedures, and included in the methodological section of my journal any changes that happened during the study.

Confirmability is the final criterion for establishing trustworthiness. This criterion examines whether the data collected and analysis of this data "are rooted in context" (Guba & Lincoln, 1989, p. 243) and is similar to objectivity in positivist research. Since the research will not be objective, confirmability instead tries to show that the conclusions drawn in the research are a true reflection of the data collected. Trochim (2005) suggested confirmability could be enhanced through conducting a data audit, which is "a systematic assessment of data and data collection procedures to establish and document the credibility of data collection process" (p. 126). I did this by going through my journal before analyzing it to make sure it was as complete as possible, by considering possible biases in my journal, and reporting any biases I discover.

The process used to analyze the data can help to establish good quality in qualitative research. In constructivist research, data can be initially analyzed as soon as it is collected (Guba & Lincoln, 1989). I did this by typing my complete notes each day when I returned from coaching to make sure my journal was as complete as possible. The process also required that I reveal any biases, which I did through explaining the setting and continued to do throughout my journal and analysis as I discussed my experiences with relevant background information.

Patton (2002) listed several other possible criteria to judge quality, which can be used for this study. Authenticity required me to be aware of my own perspective on the subject studied and portray my experiences as accurately as possible to show my learning. By focusing on a single subject, I allowed for an "enhanced and deepened understanding" (Patton, 2002, p. 544). I showed depth by

providing detail in my journal entries, which in turn allowed for detail in the discussion of my experiences. Finally, by looking at how learning was occurring, I was able to contribute to the dialogue on coach mentoring (Patton, 2002). I will now describe the results of this study, and how constructivist theory explains how learning occurred through working with a mentor coach.

Results and Discussion

Mentoring can help coaches learn and improve in several areas, including technical skills, interacting with athletes and parents, personal development, and culture and structure of the club and sport (Bloom et al., 1998; Gould et al., 1990; Lemyre et al., 2007; Nash, 2003; Piltz, 1999; Robertson & Hubball, 2005). After identifying the learning experiences in my journal, I found incidents in three of these areas. I found my experiences could be examined through the four core ideas of constructivist theory, which shows how learning occurred. The following sections will describe my experiences in different areas and the relevant constructivist theory to understand how learning occurred through these experiences. Before describing my experiences however, I will outline my swimming and coaching background, which in addition to the setting description in the previous chapter, provides context to the experiences.

Swimming and Coaching Background

I started swimming at 13 years old with a summer swim club, which I will refer to as the Dolphins. After four seasons with this club, I switched to swim with a winter swim club, which I will refer to as the Stingrays. After that season, I graduated from high school and swam for the college I was attending for one season. After taking two years off of competitive swimming, I returned to the college team for a season, followed by a university team for a season. During the five years after high school, until I finished swimming for the university, I swam off and on with the Stingrays when I had time. My swimming career was very short, and I did not swim beyond the provincial level.

When I started swimming with the Stingrays, I had the opportunity to start coaching with their non-competitive program, where I coached for two years. During that time, I also completed my NCCP Level 1 for swimming and started coaching in the summers with the Dolphins. I coached with the Dolphins for seven seasons, starting as a junior coach and working my way up to head coach. I coached various levels, from beginner swimmers to provincial medalists. During those seven years I also coached two seasons with the Stingrays' competitive program when I was swimming with the college. I was an assistant coach with the Stingrays during that time and coached beginner competitive swimmers who were 10 years old and younger, as well as swimmers who were 8-12 years old with some competitive swimming experience. During this time I completed my NCCP Level 2 for swimming.

After completing my undergraduate degree in Physical Education in 2007, I was the head coach for a summer club in another province. I coached the youngest swimmers in the program, who were 10 years old and younger, as well as the top group in the program, who were 13 to 18 years old and competitive within the region and provincially. Following this season, I coached a Masters team for one season. This team had swimmers who were 18 to 65 years old, some of whom were competitive swimmers or triathletes, as well as adults who wanted to learn to swim or swam for fitness.

I started coaching with the Sharks, the club used for this study, when I returned to university to start my Masters. This club and my role within the club were described in detail in the previous chapter. The idea for this project originated

at the end of my first season with the Sharks. My swimmers had improved over the year, bettering their times and technique, so the season was considered successful by the head coach. Reflecting on my coaching practices though, I felt I was not improving as a coach. I was limiting my coaching to mainly ideas I used in the past, not generating many new ideas. This was working to teach the swimmers what they needed to know, but I felt as though I lacked creativity and may have missed out on the opportunity to teach the swimmers even more and improve their experiences as athletes. I typically coached alone, with very little interaction with other coaches in the club, sometimes not seeing the head coach for a month or more at a time. Since I had little interaction with other coaches, I also did not know many swimmers in other groups throughout the club. My interaction with other swimmers at practices and meets was limited, and because many of the swimmers did not know me I did not feel respected as a coach.

These experiences led me to consider the idea of mentoring, and after reviewing previous research on coach education and mentoring, and discussing ideas with Laura, this study was created. While I already had a broad range of experience and education, I knew based on the previous season there was much more I could learn. The following sections describe some of the learning experiences I had throughout this study. To move beyond the current mentoring research however, I examine not simply what I learned but also how learning occurred from a constructivist perspective. As I describe the experiences, I will use the core ideas from constructivism to explain how learning occurred in each situation.

Technical Skills

In coaching, technical skills are very important. For swimming, this area includes knowledge about teaching and performing the strokes, turns, and starts used in races, as well as adapting training for different age groups and levels. My learning in this area was on several different specific skills, as well as general coaching principles. I had basic knowledge about the skills and coaching principles, but working with my mentor helped to deepen my understanding about what I knew and to think of alternative ways of coaching that could be effective in the context in which I was working.

Teaching flip turns.

I taught freestyle and backstroke flip turns early on in the season, prior to the start of this study. Some of the swimmers in the group learned flip turns in previous classes, but many of the swimmers had no experience before this season. I used a progression I had learned at a coaching course several years ago and used with many groups of swimmers over the years to initially teach flip turns.

Progressions are a common way of teaching skills in swimming, and at coaching courses there are usually progressions for each stroke, turn, and start included in the manual and worked through during the course. In my Level 1 coaching course, we were required to complete a take home exam to receive certification. Part of the exam involved explaining all my coaching progressions and evaluating the effectiveness of the progressions. While I had modified these progressions over the years for some skills, for flip turns I had hardly made any changes. My progression seemed to work very well, therefore I did not feel a need

to change it. After teaching the turns, I tried to incorporate them into practice as much as possible to give lots of opportunity for practice and correction. I felt my teaching was successful and my swimmers had a good mastery of the skill.

About halfway through my data collection period, we had a swim meet. As I was watching the freestyle and backstroke races, I noticed almost all my swimmers were making an error as they initiated the turn. I made a note in my log book to work on turns again in practice, as obviously they had forgotten one of the steps of the progression. When we returned to practice and worked on turns, I explained again how to properly initiate the turn and had them practice again. I thought my swimmers understood, but over the next few practices I noticed very little improvement in their turns.

At the weekly meeting with my mentor, I asked for her opinion on teaching flip turns. When I explained the error my swimmers were making, Laura immediately had an idea for me to try. It was a totally different way of teaching flip turns than what I had previously used, but as I thought about it, the idea made sense. At my next practice I tried out the new idea and it worked.

Constructivist learning requires a deep understanding of concepts to generalize and transfer knowledge and coaches may need new ideas to deepen their knowledge enough for generalization and transferability (Rovegno & Dolly, 2006). To initially teach the skill and provide corrections, I used knowledge gained from a coaching course and previous experience. When this did not work, I was able to discuss the situation with my mentor and learn a new idea to deepen my understanding on teaching a specific swimming skill. This allowed me to teach the

skill more effectively and I saw an improvement in the turns for many of my swimmers. By considering a specific skill in the context in which I was teaching it, I was able to learn an alternative way to teach it. Despite my mentor's idea not being a part of my mental framework for teaching flip turns, it made sense and it worked, therefore I had no problem adjusting my thinking and incorporating this idea into my coaching repertoire. There were other new ideas however, that were not as easy for me to incorporate into my mental framework.

Teaching butterfly.

In contrast to teaching flip turns, I had a very different experience when working on butterfly with my swimmers. One of the sessions Laura was observing focused on butterfly. She asked me during the practice if I had taught the swimmers to make a keyhole shape when their hands were moving under the water. I admitted that while I had showed them how to move their hands, I did not use that exact explanation for the motion because I thought it would be too confusing and there were other parts that were more important. Laura wanted to try it with them, so I allowed her to go ahead and teach it even though I had already made up my mind that it would not work. Even if they understood the idea and could do the motion out of the water, I did not think it would make any difference to their swimming.

Much to my surprise, not only did the swimmers understand the motion out of the water, when they tried it in the water I could see a difference in the stroke. Although I was impressed, I was not yet convinced this was a good idea. The group Laura tried the keyhole with was Level 1A, which in many areas was more advanced

than Level 1B. In my mind there was no way 1B would understand the keyhole, but I gave it a try anyways, if only to show myself that I was right -- the skill was too difficult for this level. To my complete amazement, not only did 1B understand, I saw a noticeable improvement in their butterfly. This forced me to reconsider my ideas about coaching butterfly, as the progression I had relied on for many years was not as good as I thought.

In constructivism, new ideas are tested against what is already known to form new or changed understandings. In the past I had taught the keyhole for butterfly, but it did not seem to help swimmers to perform the stroke much better, and for many beginner swimmers it led to confusion. I decided it was too advanced, and reserved it for older age groups and levels. Based on previous experience I decided not to bother teaching a skill that I thought was too advanced, yet my mentor had no problem improving the stroke of my swimmers by teaching this skill. My previous experience was limiting my coaching and therefore limiting my swimmers. I was forced to rethink the way I taught butterfly and form a different understanding about the stroke. Although this new understanding did not come as easily as with the flip turns, in both cases my mentor challenged the way I taught a skill and encouraged me to think in a different way which ultimately deepened my understanding and teaching of these skills. As with teaching flip turns, learning took place in a specific context and required me to actively participate by teaching the skill and observing the swimmers to see if they understood what was taught, then reflecting on different ways to teach this skill.

Using drills to teach skills.

Looking more broadly, I also learned about general coaching techniques from my mentor. Using drills to teach various swimming skills is common practice. In swimming, drills are modifications used to isolate a certain part of a stroke or skill. For example, an important part of freestyle is body roll. A common freestyle drill is to have a swimmer kick on his or her side for ten seconds, then take one freestyle pull to switch sides. This emphasizes the roll from side to side that occurs during the stroke. Drills are an important part of the progressions described in the previous section and a central component in formal coach education.

At one of the meetings with Laura, she was providing feedback on a practice she recently observed. One point of feedback was the importance of using drills throughout practices, and she encouraged me "to add more drill time, not necessarily a lot of different drills but more time focusing on specific aspects of the stroke" (April 9, 2010). Although I often went through progressions for each stroke, I did not always have drills in every practice. Lots of my practices included only full strokes, but with specific emphasis on one part of the stroke. While Laura agreed this was a good idea and definitely an option that should be used with young swimmers, she still thought there should be more drills in my practices.

I thought about this after our meeting and considered why I did not use drills every day, even though the main focus of my group was skill development. In my experience as an athlete, we used drills in every practice. In most cases, we were allowed to choose our own drills and I always chose the same couple of drills for each stroke. I started swimming as an adolescent, so I was quite a bit slower than

the rest of my group when I started. Since keeping up to the group was often an issue for me, I would choose drills that were fast enough to stay with the group and ones that would make me the least tired so I could keep up as long as possible. After a couple of years doing the same drills, it started to get quite boring. I often still associate drills with boring swimming, even though I know it is a useful part of practice. As I thought about my perspective on drills as a swimmer, I realized I was still in that mindset as a coach. The problem was all of my swimmers were new to the sport and under ten years old. They may not necessarily have thought that drills were boring, since they had a totally different experience than I did learning and practicing them.

When considering previous coaching experience I realized I almost always associated drills with progressions. While they do go together, drills can also be used separately. It seems like an obvious statement, but after this conversation with my mentor, I realized I often only used drills if I was going through a full progression of a stroke or skill. Why not use only one or two drills in a practice, followed by swimming full stroke and thinking about whatever skill the drill was focused on? This would eliminate potential boredom because the swimmers do a drill and then switch to swim, plus they would only have to focus on one part of the stroke at a time, which may help to lessen confusion on what to do.

Also from previous coaching experience, I recalled many times in the past when I tried to use a drill to isolate a certain component of the stroke and the swimmers did not understand what to do. In some cases I did not explain it well, other times the drill was too advanced for the group. With some drills, I gave up

because I thought it was a waste of time for the swimmers to do a drill completely wrong. After discussing this with my mentor however, I reconsidered these ideas. Maybe not every drill I tried that did not work should be tossed aside. Perhaps it was just the wrong drill for that group on that day, not necessarily wrong for everyone on any day.

After that meeting with my mentor, I tried to incorporate more drills into my practices, and found it was successful. This incident shows two ways in which context is important for learning through mentoring. First, my mentor gave me feedback that was applicable to the swimmers I was coaching at that time and that I could use immediately. I was able to test out her ideas right away and learned a different way to coach that was successful. Second, my mentor provided me with feedback and ideas that took into account my previous knowledge and experience, which is an important core idea of constructivism. Since I had previous knowledge about drills, my mentor did not tell me I had to use certain drills or spend a certain number of minutes each practice focusing on drills. Instead, her feedback and my reflection allowed me to gain a different understanding about how drills can be an effective part of all practices.

Interactions With Others

The way a coach interacts with others and manages relationships with those involved in sport are important for a coach to be successful (Jones et al., 2002). This includes interactions with athletes and parents. While working with my mentor there were several incidents involving interactions with others that were learning experiences for me. My mentor's involvement in these experiences was different

than in the technical skills experiences, but still provided learning experiences as defined by constructivist theory.

Rewarding swimmers.

As previously described, my swimmers were almost all first year competitive swimmers. While they were very enthusiastic and generally responded to the feedback I gave them during practice, the feedback did not seem to stick. They could do the strokes properly, but were very inconsistent in doing things properly all the time. Before I started working with my mentor, I was trying to think of ways to encourage the swimmers to swim properly all the time. I thought they were just lazy, because I knew they knew how to do the strokes properly.

As I was thinking about this problem, I noticed how often swimmers would ask me if they had any "dots." Dots were stickers the swimmers received after a swim meet if they beat a certain time in a race. There were several times for each race, and as the swimmer beat more times he or she would get another coloured dot to place on their dot chart. As an extrinsic reward for swimming fast at swim meets, the dot charts seemed to motivate the younger swimmers and they were very excited to receive these rewards. I realized after much thought it was not that the swimmers were lazy, they just had no real reason to do their strokes properly all the time. Sure, I was telling them to swim a certain way, but why should they listen to me? After all, lots of them were still beating their times and receiving dots for good swims at meets.

I considered the idea of having some sort of extrinsic reward for properly doing each stroke, but was wary about whether or not I should try it. Eventually I

decided I was going to try some kind of reward, and settled on buttons the swimmers could pin on their swim bags. Shortly after this, I started this mentoring project with Laura. I noticed Laura gave out little rewards to her swimmers very often. At least once or twice a week, she would give out a piece of candy or something similar at the end of practice. At one point, she made an offhand comment about how giving the swimmers "a little something now and then goes a long way in keeping them motivated" (April 9, 2010). I thought more about that comment later and realized if her swimmers, who all had several years competitive swimming experience, needed some extrinsic motivation, my swimmers definitely needed it.

My button reward system did result in the swimmers consistently swimming proper strokes. By the time I had the buttons made and started handing them out, it was into the third week of this study. By the end of the study, I had given out almost all of the buttons. I noted in my journal:

> My kids often didn't have much incentive to practice the little things [i.e. parts of the strokes that could get them disqualified in a swim meet if not done properly] since they didn't have much connection between practices and [swim] meets, but I think the buttons are really starting to help with this. (May 7, 2010)

I was very pleased with the improvement in swimming I saw during this time, and knew the extrinsic motivation was not a bad idea at all for this group of swimmers. At our final meeting, my mentor told me the buttons were "absolutely brilliant" (June 1, 2010) and was considering using an idea like that for the Learn to Swim and Level 1 programs in the following season.

Previous knowledge was part of my initial hesitation for using extrinsic rewards. Despite having successfully used rewards in the past with my swimmers, courses I had taken throughout my university programs and coaching courses presented different ideas on motivation and using extrinsic motivation. For example, self-determination theory argues athletes who are intrinsically motivated tend to be more interested, confident, and show enhanced performance and persistence (Ryan & Deci, 2000). An important way to increase intrinsic motivation is to increase the autonomy of the athlete, which can come from interactions with significant others, including coaches. Autonomy can be undermined by external rewards (Vallerand & Losier, 1999), which is one of the reasons I became wary about using rewards. In the previous season I chose to use only small rewards on rare occasions, but after evaluating my swimmers in the season of this study, I decided to try using larger rewards.

Although the idea to use extrinsic rewards and the type of reward to use were not ideas from my mentor, her comment helped me reconcile conflicting ideas about using rewards. Intrinsic motivation may be more important for older swimmers, but young swimmers, especially those new to the sport are very encouraged by rewards. This learning experience demonstrated the importance of deep understanding to allow for the transferability of concepts from one context to another (Rovegno & Dolly, 2006). My mentor's comment and actions assisted my understanding of this concept and subsequent generalization and transferability. This debate prompted me to reconsider what rewards I used with swimmers, and given the success I had with this reward I have reconsidered my previous ideas

about using extrinsic rewards for young swimmers. In terms of generalization, I can see how important it is to consider what research and personal experience show about this topic, but also to consider the specific group of athletes I am currently coaching. In this context it was successful, but that does not mean it will work for everyone.

Interacting with parents.

During the first meet I attended with my mentor, an interaction with a parent provided a learning experience for me. Most of the interactions I have had with parents have been positive, although over the years there have been some negative experiences. For example, one incident occurred in the previous season where a parent felt my practice was not challenging enough for her child that day, and removed the child from practice ten minutes early. It would not have been unusual for this parent to remove the child from practice five to ten minutes early because they needed to get somewhere else, but for the parent to say the practice was not doing anything useful for the child and simply leave was very surprising. I was so shocked I did not say anything to the parent and just watched them leave. I was upset about the incident, as I thought the practice was just fine and felt it was a direct reflection on poor coaching from me.

The incident Laura had at the first meet I attended with her was a good learning experience for me for future interactions with parents, since as a coach I will inevitably have to deal with parents. Prior to this meet, Laura held a meeting for the parents and swimmers to discuss the meet, explaining that due to the time of year and the training leading up to the meet, the swimmers were not expected to go

best times. It was the first big long course meet, and the focus was on race tactics for long course swimming and technical skills worked on during practice. Everyone seemed to understand, yet during the meet when one swimmer had a slower race, the parent became very upset. The parent told the child if the next race was not better, the child would be moving to a different swim club. In front of the child's friends (other swimmers from our club), the parent almost had the child in tears.

At this point, Laura arrived and realized what was going on. She immediately told the child and other swimmers to go to the bleachers and get ready for their next race so they would be away from the parent. The parent proceeded to yell at Laura, accusing her of not properly preparing the swimmers and not doing an adequate job coaching in general. Although she was very upset with the parent, she responded by calmly telling the parent that this was not the appropriate time and place, and a meeting could be scheduled for the following week to continue the discussion with the head coach involved as well. She then walked away and returned to coaching.

As I observed this situation, I was thinking to myself what I would have done in that situation. While the situation I used as an example above was not nearly as severe as the one my mentor faced, I still could learn from her response to dealing with an angry parent. Instead of letting them walk away without saying a word, I could have given the option to discuss the situation outside of practice at a later date. Observing my mentor in an interaction with a parent provided a learning opportunity for me by giving me another tool in how to deal with parents who are rude or want to discuss something that is not appropriate to discuss at that time.

This learning experience did not reflect learning from a constructivist perspective in the same way many of the previous experiences described here did. While I did take in new knowledge, I was not an active participant in the situation. I observed the situation and my mentor's response, and discussed the situation with my mentor at one of our weekly meetings. During our meeting, she emphasized the importance of getting the swimmers away from the parent, and responding in a calm way to the parent that makes it clear the behaviour is not appropriate and will be dealt with later. In this situation, I was able to see a way to deal with a negative parent situation in the context in which it could occur for me. It is entirely possible I could have a parent upset over his or her child's performance, even if I know it was not a bad performance. By observing a situation that was in my coaching context and discussing it with my mentor, I was active in the learning process. Also, by considering previous experiences I had that were similar, how I responded in those situations, I learned a new way to respond in future situations.

Personal Development

While technical skills and dealing with athletes and parents are an important part of coaching, the personal development of the coach is another area where mentors can help coaches learn (Nash, 2003). As I reviewed my journal, I noticed my coaching philosophy changed throughout the study, and confidence in my coaching ability greatly increased.

Change in coaching philosophy.

Developing or changing a coaching philosophy has been recognized as a potential benefit of working with a mentor (Robertson & Hubball, 2005). Although I

did not entirely change my coaching philosophy, I noticed an important change in my coaching throughout this study that led to a change in my coaching philosophy. When I initially applied for a job with the Sharks, I submitted my resume with the following statement: "My philosophy for coaching is that swimming fast comes from a combination of hard work and a strong technical base. I believe that this can best be achieved in an environment where the swimmers are having fun while working hard." This statement stemmed from several years of coaching for different clubs with swimmers in a wide range of ages and abilities. I still believed this to be a good philosophy, but I also realized I was missing an important part describing myself as a coach.

When I attended the coaching conference during the data collection period, there were several different speakers on a range of topics. A recurring theme throughout the sessions was innovativeness. Although it was rarely discussed in that way, nearly every session involved the speaker explaining a different way of looking at a situation or problem they encountered. After listening to these speakers, I explained in my journal that I thought "a key to good coaching [was] to be innovative… [and] I would love to be an innovative coach like that" (April 17, 2010). Making changes was commonplace for all the speakers, and all seemed willing to give any reasonable idea a try, and then reflect on whether or not the idea was effective. I also saw my mentor working in this manner. For example, in the previous section, the example with the flip turn drill showed this. When I told Laura my problem, she thought about it for a minute, and came up with an idea to try. Often, when I was observing her practice, she would see a problem during a set and

would make a change to the set or have the swimmers try something in between sets to help them understand a concept.

Also, near the beginning of the data collection, one point of feedback Laura gave me was not to be afraid to change. She noticed I was fairly flexible and would sometimes try new ideas, but she encouraged me "not to be afraid to stop and change things in the middle of practice" and to "try to be as adaptive as possible when things aren't working" (April 9, 2010). Since then, there were days where I made many changes to the practice, even wrote an almost entirely new practice because the planned practice was not working on that day. Although I was already fairly innovative coach, my mentor encouraged me to use this even more.

Later in the data collection, I saw much more innovativeness in my coaching. For example, I tried new drills for breaststroke and butterfly during one practice. I added it in the middle of practice because I had heard about the drills recently and it was focused on an error I noticed at the time. The breaststroke drill did not work at all, but I was still glad I tried. Before this study I do not think I would have even tried this drill, and even though it did not work in this situation, it may work in a different one. The butterfly drill was more successful and although it was not perfect, did work for some of the swimmers.

Throughout this study, I noticed a change from using mainly ideas from previous experience to incorporating more new ones. About three weeks into the study, I was thinking about trying more new ideas, and made the following observation in my journal:

> I want to be open and try new ideas, but at the same time it feels like there's not enough time to do everything! I'm a bit concerned

> that if I try to do all these new ideas, that if they don't work I will have wasted time when I could have used a 'tried and true' method instead. (April 23, 2010)

Although I did also note that from my experience and through discussion with my mentor, I know there is not necessarily a 'tried and true' method for coaching. There are some progressions and ideas that tend to work well, but there will always be times when something unexpected works well or an old idea does not work at all. My concern at that point in the study was more that if I spent too much time trying new ideas that did not end up working, I may end up wasting time. Although the season is ten months long, I only coached these swimmers for three practices a week, which was not as much time as it seemed. What I found was that if I incorporated a couple of new ideas, even if they did not work it did not mean an entire practice was wasted. I had to carefully observe my swimmers trying the new ideas, and decide whether to continue or make changes.

As I saw this change in my coaching, I realized it was a very important change, so much so that I wanted my coaching philosophy to reflect this concept. I have now revised my coaching philosophy to the following: "My philosophy for coaching is that swimming fast comes from a combination of hard work and a strong technical base. I believe this can be achieved in an environment where I am innovative and adaptive for the swimmers and where they are having fun while working hard."

My mentor knew I had many good ideas and was an innovative coach, and therefore had the ability to generalize and transfer many concepts. Her encouragement helped me to understand this and led to increased creativity and

innovativeness in my coaching, as well as challenging my previous ideas about how many new ideas should be used in a practice. In the past, I would have limited trying new things to what others told me to try in a certain situation or ones I saw others using that appeared to work, but would not have been likely to think up new ideas on the spot or try "untested" ideas that I just heard or read about somewhere.

Increased confidence.

In this study, I noticed a change in my confidence as I worked with my mentor. As I reviewed my journal, I noted many times in different coaching situations about feeling intimidated or nervous. For example, when my mentor came to observe my practices, I was very intimidated, even though she had seen me coach many times before as my group swam next to her group once a week all season. I wrote the following entry in my journal:

> It was really intimidating having Laura watching me. I know she is at the pool often when I am there and I coach with her on other days, but for some reason I was nervous tonight with her observing me. (April 8, 2010)

Midway through the data collection period, the Level 6 group (coached by the head coach) changed pools for one afternoon practice a week. On Wednesday afternoons, they were practicing alongside Laura's group when I was observing and assisting her practice. I noted in my journal that

> It's a little intimidating having Cam there because I feel like he's watching me all the time and judging my coaching…I feel I don't coach the same way with this group as I do with my own group because they aren't my group…I just don't know if it's the most accurate representation of my coaching ability. (May 5, 2010)

When I covered practices for the senior groups, which happened occasionally throughout this study, I was very nervous. I wrote in my journal "I feel a bit

intimidated coaching older swimmers because I don't feel like my technical knowledge is high enough" (April 28, 2010). As an athlete, I did not swim at the level most of the senior athletes in this program were at. The top group in the club had swimmers who were national age group record holders and national level medalists. As a swimmer, I did not ever qualify for nationals, let alone win medals. I felt under qualified to be working with swimmers of that caliber. At the first meet I attended with my mentor, I was mainly observing my mentor working with her swimmers. Some swimmers had poor races, and I was unsure about what to say and how to act with them. Luckily I could observe Laura interacting with the swimmers and was able to gain insight from her, but I noted in my journal I did not know if I would be able to handle a situation like that. I was nervous when the swimmers returned from their races, even though I did not necessarily have to speak with them about the races.

By the end of the study however, I noticed my confidence as a coach was greatly improved. To understand this in constructivist terms, through experiences and interactions with my mentor, I was able to learn in many areas and improve my coaching skills. By reflecting on this improvement, I came to a better understanding of the abilities I had as a coach, which increased my confidence in what I could accomplish.

Near the end of the data collection period, I had three experiences that brought to my attention how nervous and intimidated I was at the start of the study and how much my confidence had grown throughout the study. The first experience

was on the last day Laura came to observe my practice. I ran my practice as planned and almost forgot Laura was there, which was significantly different from the first couple of times she observed my practice. I noted in my journal that I "didn't feel intimidated today compared to previous times Laura has observed practice" (May 27, 2010).

The second experience came just before I ran that practice, when I was preparing the workout. I was thinking about coaching a group like Level 4 and noted in my journal that "even though I [had not] coached at that high a level before, I think I could do it if I had a chance" (May 21, 2010). If someone had asked me to coach that group at the beginning of this season, or even to coach Level 3, I would have immediately said no. Even at the start of the data collection, more than halfway into the season, I would have said no to coaching Level 4 and maybe could have been convinced to coach Level 3. In less than two months however, my thinking about the age and level I had the ability to coach completely changed.

The third experience was when I was running Laura's practice on a Wednesday afternoon, in the last week of data collection. I wrote and ran the practice, with Laura and the head coach observing. I was somewhat nervous, but not nearly as nervous as I had been previously at Wednesday afternoon practices when I was just assisting. In my journal, I mentioned, "it was a bit weird to be running the whole practice" (May 26, 2010), but there was no reference to nervousness or intimidation.

After recognizing this change, I started to consider how this change occurred. At the coaching conference I attended during the data collection I learned many new

ideas, but I also found many of the ideas suggested by the speakers were things I was already doing in some form, or ideas I had used in the past when appropriate. This gave me confidence that I was doing something right in my coaching. My mentor played an important role in helping me to recognize this also. Each time she provided feedback on my coaching, there were many positive comments, along with suggestions for improvement. It was not that I was doing things wrong, the suggestions were ideas to do things potentially better rather than to totally change the way I coached. It was encouraging to hear that there were things I was doing well. For example, she noticed I kept the attention of the swimmers very well and was good at keeping the practice age and level appropriate.

Additionally, there were several times throughout this study where my mentor indicated she learned something from me. According to the previous research on mentoring (e.g. Nash, 2003), it is common for both the coach and the mentor to learn through a mentoring relationship. I had many ideas throughout the study that I discussed with my mentor, some for my own swimmers and others for the club in general. Laura was very open to listening to my ideas and trying to use them whenever possible. This increased my confidence because my mentor was a very experienced coach, and yet felt I had very good ideas for coaching at various levels and even ideas for the whole club.

In our meeting after I had run the practice for her group, one item of feedback was how well I kept the practice flowing. When some swimmers were not doing the set properly, I corrected them and they continued. There was very little stopping during and between sets. Laura commented that the group had not been

doing very well in practice, and she was often stopping them during sets or in between sets, trying to get them to work harder or do something properly. After watching my practice, however, she realized they were stopping far too often, and her swimmers had started using it as a way of getting extra rest because they knew she would stop the set if they made a mistake. She planned to change that in her next practice. It gave me confidence to know that I could teach my mentor.

Lastly, I gained confidence while working with my mentor through the open and honest relationship we had. My mentor had over twenty years experience coaching age group swimmers, and was very successful in her career. She coached many provincial champions and record holders, and many of her swimmers went on to national and international success, including world records. During this study, some of her swimmers were very challenging for her to coach. She was forced to try many different coaching strategies, some that worked well and others that did not work. For her to be honest about how difficult coaching was sometimes and to be willing to listen to suggestions from myself and other coaches was very eye opening for me. In my previous experience, many swim coaches were not open about problems they were having with athletes and with seeking advice from other coaches, especially less experienced coaches who worked with lower level athletes.

It may appear I should have been deterred from wanting to coach a higher level group from this experience. After all, if an experienced coach was having trouble with this group, how would I be able to manage? This experience was the opposite for me, however, because I realized a coach can have plenty of experience and education behind their coaching and still face challenging situations. A coach

cannot know everything, and does not need to because there are resources available to help learning if the coach is willing to look for them. Laura told me several times when we were discussing her participation in this study and during the study that a coach can learn from anyone, if they are willing to try. She certainly showed me that was true throughout this study, and in doing so helped to build my confidence that I would be able to coach a higher level group than I previously thought.

Culture and Structure of the Club and Sport

Mentoring can provide coaches with opportunities to learn about the culture of their club and sport, as well as the structure in which they must operate within (Bloom et al., 1998; Lemyre et al., 2007). This could include, for example, how a club operates, traditions and unwritten rules within a club or sport, how teams are selected, or how to book practice times. While this is an important area for a coach to have knowledge in, I found in this study I did not have any learning experiences in this area. One possible reason for this is the level of experience I had prior to starting this study. Although my mentor had much more experience coaching, I still had several years experience and was familiar with the structure and culture of swim coaching in Alberta. Also, I had coached with the Sharks during the entire previous season, so I was familiar with the structure and culture of the club. This area would likely be important for coaches new to the sport or club however, in this study I found this area not to be very important. The next chapter will consider in more detail how constructivist theory explains the learning that occurred through mentoring, and how this research can be used for future coach educators.

Conclusion

Based on previous coach mentoring research, I expected that learning would occur through working with a mentor. During this study, I had many learning experiences in a variety of areas, which was consistent with previous literature. In this study however, I wanted to extend the current mentoring research and examine how this learning was occurring.

According to constructivist theory, learning is an active process by which new knowledge is constructed based on previous knowledge and experiences. Learners "need to be personally engaged in the learning activity" (Rovegno & Dolly, 2006, p. 243) and for coaches, this could be through coaching experiences, working with a mentor, or reflecting on experiences in context. Through these experiences, coaches are presented with new ideas and must consider how this information fits with current knowledge and beliefs. The coach comes to an understanding about how new ideas fit into his or her current mental framework by testing the new ideas against what is in the coach's mental framework (Follari, 2007).

While new ideas are presented by others to the coach, learning does not occur until the coach goes through the process of "cognitive conflict" (Follari, 2007, p. 53) to understand how new and old ideas fit together. Ideas may be easily integrated into current knowledge structures through a process Piaget called assimilation. Other ideas may require a change in knowledge structures based on the testing of new ideas against previous knowledge and beliefs. Piaget labeled this process accommodation. He asserted that as new information was presented, learners would have a feeling of disequilibrium, and would therefore go through the

processes of accommodation and assimilation in order to "seek equilibrium, or balance, in their beliefs and understandings of experiences" (Follari, 2007, p. 37).

These processes show how the learner constructs knowledge. As new ideas are presented to a coach, he or she can reconsider previous ideas and beliefs. This allows for change in what a coach knows and how a coach operates. Coaches work in a changing and complex environment, and can become constrained by "unquestionable coaching techniques" (Denison, 2007, p. 378). By viewing learning from a constructivist perspective, coaches are not fixed in what they know and how they operate, but rather have freedom to change practices and consider new ideas. Through constructivism, new ideas are considered in light of previous knowledge and beliefs, within a particular context. This allows for critical thinking about coaching situations and problems.

Constructivist Theory and My Learning Experiences

Throughout this study I was actively involved in many learning experiences. I coached my own groups, assisted other coaches, covered practices for other coaches, was observed by my mentor, observed my mentor, met with my mentor, and attended swim meets, coaches meetings, and a conference. Some experiences were with my mentor, others were on my own and discussed with my mentor at a practice or meeting. Active involvement in learning is one of the core ideas of constructivism (Rovegno & Dolly, 2006). Not only was I actively involved in many coaching experiences, I was also reflecting on experiences throughout the data collection period. My mentor helped the active process by facilitating the construction of knowledge through her feedback and our discussions at practices

and meetings. This process takes into consideration the learner by making it learner-centered, rather than the mentor simply transmitting information (Follari, 2007). When considering teacher education, Behets and Vergauwen (2006) promoted the use of constructivism to understand active learning experiences, such as field experience, because it explained the role of previous knowledge and experiences, as well as context, in teachers' learning. They also considered the role of formal knowledge in teacher learning, and found that although it varied between teachers and situations, an "understanding of general principles provides the knowledge foundation that transfers to a variety of situations" (p. 411). With respect to coach education, this means that contextual experiences like mentoring can be understood through constructivist theory, and that formal learning, such as coaching courses, can be used to provide general principles to be tested in actual coaching situations.

Working with a mentor was an excellent way to increase my learning as a coach because I worked one on one with a more experienced coach and was able to be involved in many different experiences during this study. Since I was working one on one with my mentor, she was able to teach me based on the previous knowledge (including knowledge from formal education) and experiences I brought to my coaching. As many of my experiences demonstrated, when my mentor and I discussed a topic, she would often recommend new ideas to try rather than provide instruction on how to teach a skill. For example, when I was having problems with a specific skill such as flip turns, my mentor did not walk me through a step-by-step process on what a flip turn should look like and how to teach it. Instead she offered

a suggestion on how to solve a specific problem since I already knew the skill and how to teach it.

Additionally, having a mentor was a beneficial way to encourage me to be open to trying ideas. In my example about teaching butterfly, I do not think I would have tried that idea if I had heard it from another coach or read about it somewhere, since I had already dismissed the teaching method as not working for younger swimmers. When working with my mentor though, she mentioned the idea and wanted me try it immediately. By encouraging me to try the idea, I was able to find another way of teaching a stroke that was more useful than I had previously thought.

While working with my mentor, I gained a deeper understanding in many areas of my coaching, and was challenged to think differently about some of the ideas I previously thought of as absolute truths. I was also presented with many new ideas I was able to incorporate into my coaching. In constructivism, when new ideas are presented the learner has different options. If the new idea fits with current thinking, it can be assimilated into the learner's current mental framework (Follari, 2007). If the idea is in conflict with current knowledge, the learner will test the new idea and possibly come to a changed understanding through accommodation. My interactions with my mentor on swimming skills demonstrated both assimilation and accommodation. In the case of teaching flip turns, my mentor presented me with an idea and I was able to assimilate it into my coaching easily. When teaching butterfly however, my experience showed accommodation, where previous ideas and new ideas were in conflict. Through testing the new idea, I was

able to come to a changed understanding about how to teach butterfly (Follari, 2007).

Constructivist theory asserts learning occurs through social interactions and in context (Rovegno & Dolly, 2006). The term context, in general, refers to the environment in which a coach is working. This could include factors such as the sport, age and gender of athletes, experience level of the athletes and coach, club or organization the coach in which the coach is working, and the goals of the athletes, parents, coach, and club. Context also includes what a coach brings to the environment, such as previous knowledge, experiences, beliefs, and values. In current coach education research, context has been cited as an important factor because coaches want to learn information that is relevant to their day to day situations (Bowes & Jones, 2006). In the interpretive paradigm, knowledge exists within a person's mental framework and is constructed by attaching meaning to facts (Markula et al., 2001). This means that what a coach learns is specific to that individual coach. Depending on the previous experiences and knowledge a coach has and the environment the coach is currently working in, learning may be very different for each coach. Also, knowledge is interactive (Sparkes, 1992), meaning that gaining knowledge requires interactions with others in a certain environment.

The learning experiences I had during this study involved interactions with my mentor, either by coaching together or through our discussions and meetings. Throughout the study my mentor was able to observe me and provide feedback for the specific context in which I was working. When I met with my mentor, we discussed issues and ideas directly related to the Sharks and our swim groups. The

topics of conversation could change depending on what was relevant at that time. This is one strength of using mentoring for coach education. One of the primary issues coaches have with many educational opportunities is the lack of context they provide (e.g. Knowles et al., 2005; Lemyre et al., 2007). Mentoring allows for learning to take place in the coach's context through interactions between the mentor and the coach. For future mentoring relationships, it is important for the coach and mentor to understand the context in which they are working. The mentor and the coach may work in a very similar context, or there may be significant differences in their context. As long as the mentor understands the coach's context, and is providing information and feedback relevant to that context, it is possible for the coach and mentor to be operating in similar or different contexts.

Using Werthner and Trudel's (2006) terminology, my experiences ranged from mediated to internal. In some cases my mentor gave me feedback or ideas to teach me a specific skill, such as using drills or teaching butterfly. In other experiences, I learned through reflecting on comments or ideas from my mentor. An example of this was my understanding about using external rewards for swimmers. In all cases though, my learning was informal because there were no specific learning outcomes required for this mentoring program and no formal evaluations. Although the program was analyzed to determine how learning occurred, the evaluation was not looking at whether I achieved certain outcomes or objectives.

For future coach education using mentoring, it may be more beneficial for new coaches to have more mediated informal experiences in a structured mentoring program so the mentor can ensure the coach learns ideas and skills that are

necessary for a specific sport. For more experienced coaches allowing a more flexible mentoring program is an option, as I found in this study. There were not any specific skills or ideas I set out to learn at the start of the mentoring program, but rather asked my mentor for ideas and suggestions as issues came up throughout the study and worked with the feedback she offered after observing my coaching.

Alternative Explanations

Questions may arise about whether or not learning truly occurred in some incidents described in this study. For example, in the incident involving the upset parent, I learned a new idea from observing my mentor. After that experience however, I did not have any situations where a parent was acting in that manner towards me. I did not ever test the idea to see if I would be able to apply it in a real situation. Does this mean learning has not yet occurred? This is similar to the problem many coaches reported regarding formal learning in general. Many good ideas are presented, but without being able to try them out the knowledge remains theoretical. In some cases I was able to test ideas, but there were many times I learned new information but was unable to directly apply it to my coaching. In other cases however, I learned new information from my mentor and was able to modify it to make it applicable for my group. This is a better example of constructivist theory because it shows a deep understanding and ability to transfer knowledge to new situations (Rovegno & Dolly, 2006). Having my mentor to discuss ideas with and learn how to modify them to work for my group was very beneficial.

There were many learning experiences I had during the data collection period that did not directly involve my mentor. I had the opportunity during this

study to coach almost every group in the club on at least one occasion, if not more. During this study, if I was not at the pool or meeting my mentor, I was planning practices, thinking about new ideas, reflecting on previous practices, or thinking about coaching in some way or another. I was completely immersed in coaching, and have considered this could be the reason I felt I learned so much during this study. Some of my new knowledge came from interactions with my mentor, but I also had many learning experiences that did not involve my mentor. Would significant learning have still occurred if I had spent this same amount of time absorbed in coaching without a mentor? This could be a question to consider in future research.

I noticed that my coaching was more focused during the data collection period because I was keeping more detailed notes and was meeting with my mentor regularly. The meetings with my mentor were to discuss any questions or problems I had and for her to provide me with feedback after she observed my practices. I would bring a list of topics to the meeting, which I compiled from my journal entries. By going through my journal entries as I prepared for our meetings, I was constantly reflecting and thinking about my coaching practices. I think I would have still had a number of good learning experiences if I had been involved with the club in the same capacity but without my mentor, but having a mentor allowed me to have deeper learning experiences.

Future Directions

I found through this study that learning did not occur from just receiving information about coaching, but rather required a process of working with the

information and making changes to my coaching practices. There were instances where I took in information from observing or discussing a situation with my mentor. After considering the situation or idea, I was able to relate it to my previous experiences and consider alternative ideas for future situations. Through active involvement in the learning process, I was able to change some of the ideas I had about coaching, and subsequently changed some of the ways I coached.

By considering learning from a constructivist perspective, previous experiences and beliefs were explained in the learning process. When old and new ideas were in conflict, constructivist theory, through the processes of assimilation and accommodation, provided an explanation as to how learning occurred (Follari, 2007). If learning is considered traditionally, that is passive transmission of information through listening or reading, the role of previous experiences and knowledge is ignored (Behets & Vergauwen, 2006). This traditional model places the emphasis on the teacher to pass on the required information. With constructivism however, the learner is actively involved in the learning process. By using mentoring, coaches have input in what is learned through asking questions and having discussions with the mentor.

By structuring mentoring programs around constructivist theory, mentors will be more aware of how the coach is learning and can use this to enhance the learning process. Through discussion and feedback that is relevant to the coach's context and by providing opportunities for the coach to be actively involved, a mentor can increase the chances of learning occurring through mentoring. Mentors should be trained in principles of constructivism before starting a mentoring project

with a coach. This would allow the mentor to understand how the learning process is occurring and provide them with specific ways to enhance feedback and discussion.

The constructivist principle of scaffolding provides an example of how a mentor could increase learning. Scaffolding involves the mentor providing ideas and support in such a way that the coach has to consider ideas slightly beyond what he or she currently knows (Follari, 2007). If a coach does not have much knowledge in a certain area, the mentor would be more involved in providing ideas and showing the coach ways to operate. As the coach learned more, the mentor would lessen his or her involvement and allow the coach to problem solve and work more independently (Schunk, 2004). Scaffolding not only takes into account the coach's current knowledge but also considers how knowledge changes throughout the mentoring process and how mentors can work with these changes.

Considering the four core ideas of constructivism also provides a framework for mentors to understand how learning is occurring and therefore how to best help the coach to learn. First, since learning requires a deep understanding of coaching concepts (Rovegno & Dolly, 2006), mentors can help coaches through providing new ideas as well as suggesting new ways to use previous knowledge. Since the mentor is familiar with the coach's context, he or she can provide ideas and suggestions that are relevant to the coach at that time, as my mentor did.

Second, the mentor should consider the previous knowledge and experiences of the coach. If the coach is a beginner or new to the club or team, the ideas and suggestions will be much different from the ideas given to a more experienced

coach. Before starting a mentoring program, the mentor and coach should be well acquainted. In this study, I had worked with my mentor for a year before the study started, so she was familiar with the context in which I was working and my background. This allowed for good learning opportunities in the context in which I was coaching at that time.

The third core idea, learning as an active process, is very important for developing future mentoring programs. The mentoring relationship should be agreed upon by both the coach and the mentor (Bloom et al., 1998), and I found this to be especially important in my study. I found it was a lot of work to organize meetings and attend all the practices. For me, it was a worthwhile project because I improved my coaching practices and was able to learn from a very experienced coach. It did require significant investment and organization though, and there were many times that meetings and practice observations had to be rescheduled due to my mentor's schedule or coaching schedules. Even though my mentor was very committed to assisting me with this project, it still took a considerable amount of work to make it happen. On one hand, if coaches are interested in improving their own practices, they should be willing to invest extra time to learn. On the other hand though, coaching can be a very busy job and many coaches do not have much extra time to spend working with other coaches. I was in a unique position this year in that I was able to make time though this study to do additional coaching and work with my mentor. Without that extra time, it would have been much more challenging to organize and carry out this project.

This brings discussion back to formal, nonformal, and informal coach education. With mentoring as an informal part of coach education, coaches are responsible for organizing and carrying out mentoring projects themselves. While some coaches may take the initiative for this and other coaches may be willing to take on the role of mentor, it is possible many coaches will be detracted from actually participating in such projects due to the amount of commitment required. If mentoring was formalized or made a required part of coach education, more coaches would be able to experience the potential benefits of participating in a mentoring program.

One problem however, is the very aspect of mentoring that is its' biggest strength. Mentoring is a useful way to learn because of the possibility of learning occurring in context, the fourth core idea of constructivism. Designing a program for all coaches may place restrictions on the coach and mentor to participate in a certain way that does not fit with their context. In this study, I was able to work with my mentor in a way that took into account our group schedules and the club in which we worked. In another club or even with other coaches in our club, the set up I used may not be practical or as useful as I found it. Also, if mentoring becomes formalized or mandatory, participation is no longer voluntary, which could decrease the learning opportunities.

In this study, my mentor was not specifically trained regarding constructivist principles before starting the project. I found however, that she generally provided information that was within my context and took into consideration my previous experiences and knowledge. It is possible she was able to take into consideration

my previous knowledge and experience because we had been working together for a year prior to the start of the study. We coached together on many occasions and discussed various coaching topics during practices and coaches meetings. Also, as the head age group coach, my mentor had informally observed my coaching throughout the season. Although she did not fill out any observation or evaluation forms, part of her job as head age group coach was to report to the head coach how I was performing on a regular basis. Through these experiences, my mentor became familiar with my coaches practices, as well as many of my previous experiences. This may have been the reason she was able to provide me with relevant information throughout the study.

Occasionally my mentor provided me with information I already knew and I did not learn anything new. In some cases though (such as teaching butterfly), providing me with information I already knew turned out to be a learning experience because I was forced to question my previous knowledge and experiences to come to a new understanding about teaching a skill. This is the process expected through constructivism, and I found it to hold true through this study.

There were times during this study I felt I could have been challenged more by my mentor. This is where explaining the principles of constructivism to my mentor may have helped. If Laura were more aware of the process of learning through constructivism, she may have been able to provide me with more opportunities to learn. While I did learn through assimilation of new ideas, the process of accommodating new ideas was a much more active process that stood

out more for me in this study. If the principles of accommodation and assimilation were explained in terms of the amount of active learning involved in each, perhaps Laura could have given me more ideas that challenged my current thinking on a topic. Even if I ended up not changing my mind, the process of conflict and consideration of the alternative explanation may have provided richer learning experiences.

This idea that accommodation provided a richer learning experience than assimilation aligns with the principle of scaffolding. If a mentor were trained in these principles and understood how scaffolding worked, along with accommodation and assimilation, perhaps the mentor could ask questions or suggest ideas in a way that forced the coach to challenge an old belief rather than just take in new ideas.

Another way I could have been challenged more would be through explaining the four core ideas of constructivism. For example, if I explained the core idea about active involvement as a necessary part of the learning process, perhaps I could have been involved in writing and running some of her practices earlier in the data collection period. By providing more specific information to mentors about how learning is occurring, mentors could make small changes in the delivery of information that may increase the learning taking place for the coach.

Throughout the data collection period, I found I had many learning opportunities independent from my mentor. Future studies could consider how learning occurs for coaches in various areas, including attending conferences, working with other coaches, and reflecting on coaching practices and how this can

be combined with mentoring. By considering education programs with many aspects, perhaps coach education could become more contextual and provide better learning opportunities for coaches.

Overall, this study showed that mentoring can provide a coach with many learning opportunities in different aspects of a sport. Through my work with a mentor, I was able to record many learning experiences. These experiences were then considered through the constructivist theory of learning to understand how this learning took place. By considering the process of learning, future coach mentoring programs can use the principles of constructivism to receive the maximum benefits from working with a mentor.

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Appendix A

Date: _____

Coaching Observation Form

Area	**Comments**
Knowledge/Organization	
Knowledge of the sport (rules, skills, etc)	
Teaching of skills appropriate to the level of the athletes	
Correcting errors appropriate to the level of the athletes	
Practice plan reflects the needs of the group	
Maximize participation of all athletes	
Effective use of space	
Identify weaknesses and establish strategies for improvement	
Management	
Organization of activities	
Ensure all athletes can see demonstrations and hear the coach	
Ensure participants are engaged throughout the practice	
Ensure participants are behaved and attentive	
Communication	
Provides clear and concise instructions	
Uses language appropriate to the athletes	
Have positive body language	
Ensure instructions are understood	
Provide appropriate and effective demonstrations	
Show an awareness of learning styles by using a combination of visual, auditory and kinesthetic coaching methods	
Motivation	
Motivates athletes appropriately	
Shows enthusiasm for coaching	
Makes the session fun	
Offer appropriate praise and feedback	
Vary activities to maintain athletes' interest	
Coaching Philosophy	
Appropriate perspective about winning and	

losing	
Professional approach with athletes and parents	
Listens to feedback from athletes	
Other Recommendations and Comments by Mentor Coach:	

(Based on Kinesiology 3471 Coaching Evaluation form, 2010. Courtesy of Dr. Carolyn Savoy, Dalhousie University)

Appendix B

Journal Question Guide

Observational Notes

1. Practice (Workout plan and attendance in log book)
    a. What changes were made? Why?
    b. Write at least one event that occurred today to discuss with my mentor at weekly meeting.
2. Meets
    a. Write a general description of the meet
    b. Write feedback for my swimmers on each race
    c. What needs to be worked on in practice?
    d. Write at least one event that occurred at the meet to discuss with my mentor at weekly meeting.
3. Coaches Meetings
    a. Where and when is the meeting?
    b. What is the purpose of the meeting?
    c. What is discussed?
    d. Is there anything I need to do with my swimmers?
    e. Write at least one event that occurred at the meet to discuss with my mentor at weekly meeting.
4. Weekly Meeting with Mentor
    a. Where and when is the meeting?
    b. What is discussed?
    c. Is there anything I need to do with my swimmers?
5. Other Experiences
    a. Write a general description of the other event, including what took place during this event?
    b. Are there any ideas I can use for my coaching?
    c. Write at least one event that occurred to discuss with my mentor at weekly meeting.

Methodological Notes

*Weekly schedule for data collection period is provided.

1. Are there any questions or ideas from today to discuss with my mentor, aside from those already noted in Observation section?
2. Are there any schedule changes?
3. Are there any changes to journal questions?

Theoretical Notes

1. Based on feedback from my mentor:
    a. What previous experiences, knowledge, beliefs or values are evident based on feedback from my mentor?
    b. What other ways could I consider?
2. Is there new knowledge that doesn't fit with constructivist theory? Why?

Personal Notes

1. How do I feel about today's practice/meeting/meet/etc?
2. Is there anything I would change for future coaching sessions?

Appendix C

Improving Mentoring Programs

Mentoring in Sport

- Research in coach education has found mentoring to be a useful way for coaches to learn
- Learning through mentoring can occur in several areas, including technical skills, interactions with others (such as other coaches, athletes, administrators, etc), personal skills for the coach, and the structure and culture of clubs and sports
- To make mentoring programs more effective, it is useful to consider how learning is occurring through constructivist theory

Constructivism and Mentoring

1. Learning is an active process
    - Coaches need to be engaged in many different coaching activities, such as observing their mentor, being observed by their mentor, and meeting with their mentor outside the coaching environment
    - Mentors can help facilitate learning through the feedback and new ideas based on the coach's current context
2. New knowledge is based on previous knowledge and experiences
    - As new ideas and feedback are presented to the coach, he or she needs to consider how these ideas fit into the current mental framework
    - New ideas may easily fit into the mental framework, or there may need to be a process of conflict between new and old ideas resulting in some change in mental framework
    - Mentors can consider the previous experiences and knowledge of the coach by using the principle of scaffolding: the new ideas and feedback given are slightly beyond what the coach currently knows and can modify feedback as the coach learns
3. Transferability of knowledge to new situations comes from a deep understanding of coaching concepts
    - Knowledge from previous experiences or formal coaching courses may be transferable to new situations
    - Mentors can suggest ways to incorporate this knowledge into current situations
4. Learning occurs through social interactions and in context
    - Mentors should be considering the context the coach is working in (sport, age and gender of the athletes, level of the athletes, goals of the coach and athletes, etc) when providing feedback and ideas
    - Mentoring should allow for different types of interactions between the coach and mentor including during practices and competitions, and also outside the coaching environment

Other Considerations for Mentoring

- Mentors should be familiar with the coach's previous experiences and current coaching context
- The coach and mentor must be willing participants and willing to set aside time to work together
- The coach and mentor should work together to determine how mentoring will work best for them: how often they will meet and under what circumstances that meeting will take place