RUNNING HEAD: LIFELONG LEARNING IN PARASPORT COACHING

Case Studies in Learning to Coach Athletes with Disabilities:

Lifelong Learning in Four Canadian Parasport Coaches

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Dissertation submitted to the
Faculty of Graduate and Postdoctoral Studies
in partial fulfillment of the requirements
for the degree of Doctor of Philosophy in Human Kinetics

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Acknowledgements

I have many people to thank who were a source of support and inspiration during my doctoral journey. The four coaches who were the key participants in this research were generous with their time and trust. I will forever be grateful for their collaboration. They taught me so many important lessons in life and in coaching in parasport. Thanks also goes to the entire parasport community that welcomed me with such open arms into your stories, your sports, and your families. I will cherish all the fascinating lives I have been fortunate enough to have been a small part of.

A huge thanks also to my committee members: Dr. Pierre Trudel, Dr. Diane Culver, and Dr. Natalie Durand-Bush. Your critical eyes and collaborative spirit made this a positive experience for me. Special thanks goes to Dr. Penny Werthner for being a professional and academic mentor to me, on this project and beyond. Thank you for giving me the latitude to use my own ideas, to do something I believed in, and also for reining me in when I went off track. Your belief in me in one of the most hectic and challenging times in my life was so greatly appreciated. I could not have done this without your support.

To my colleagues and friends who were also a part of my support network to keep me from giving up, including Bettina, Lauren, Isabelle, Anna, and Neale. Thank you for continually reminding me (sometimes weekly) that this project was worth it.

To my entire extended family, parents, step-parents, grandparents, aunts, uncles, cousins and brothers: thank you for believing I could follow through as a mature student at a time when a busy life, family and career could have easily thrown any research off the rails. You are all a part of the reason why I felt capable of finishing what I started. To my parents, and especially my mother, Judy: you have always believed in me and are part of the reason I have confidence and love for myself and others today. To Colin: probably no one has seen me at my lowest - or highest - other than you in this life. It will always be important to me to make you proud, and your own success in career and family fills me with pride. To Robin and Jamie: seeing you grow up and being a big sister you can look up to is a joy. I hope we will continue to grow and learn to lean on one another as we all grow old together. To Shiah: My little cousin and soul sister who gave me support in my life whenever I have needed it the most. Thank you all from the bottom of my heart.

To my daughters: Skylar, Zoe and Taylor. This dissertation is really for you. To show you that you can do anything, at any time in your life, if you really set your mind to it. You are by far my finest work, and nothing really holds a candle to the love and pride of being your mother.

Finally, to Daniel: I know you didn't really know what you were getting into at the start of this journey with me. I hope that you know how important you were in making it happen and that your love, and patience (which doesn't always come naturally to you:), were so appreciated all these years. I'm sure I couldn't have done it without you, and I hope you somehow feel proud that a piece of this dissertation is thanks to you. No matter where life leads us, please know that I will always be grateful for all you have given me.

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Abstract

The complex human process of sport coaching is a dynamic and evolving practice that develops over a long period of time. Coaches learn from a number of different situations and their past experiences influence what they choose to pay attention to and learn from (Werthner & Trudel, 2009). This dissertation explores the lifelong learning process through a collective case study involving four coaches for athletes with a physical disability. The theoretical framework that guides this study is Jarvis' (2006, 2007, 2009) comprehensive view on human learning, including his concept of lifelong learning, and key concepts such as biography, experience and disjuncture, and types of learning. Jarvis' psychosocial perspective on human learning is a useful lens for a closer examination of how coaches develop over a lifetime and how they change and continue the process of *becoming* through new experiences, which they gain, more often than not, within a social context. The work of Moon (1999, 2004) and her metaphor of a network view of learning is a complementary framework for examining learning through reflective practice. Moon's generic view of learning (1999) illustrates how a network of knowledge, feelings and emotions make up one's "cognitive structure" and suggests that this structure plays an important role in the learning process as it guides what we choose to pay attention to and what we choose to learn. A thematic analysis (Braun & Clarke, 2006) was used to extract themes and examples from three in-depth interviews with each coach, observation of the coach in their coaching contexts, as well as interviews with key collaborators in their coaching practice. The transcripts were member checked to increase trustworthiness. Three articles comprise the results section and the main points in this dissertation are as follows: (a) a case study of one exemplary parasport coach and how he learned through a wide variety of life experiences, such as pragmatic problem solving, education, and building relationships; (b) the four coaches who engaged in social learning through meaningful interactions with a variety of key collaborators who contributed to their learning and coaching practice; and (c) the four coaches who used reflection to learn and to build their coaching practices within the unique context of the parasport world. These findings contribute to the emerging body of literature on coaches for athletes with disabilities by adding to our understanding of how coaches' life experiences and biographies determine what kinds of learning opportunities they each found meaningful; the importance of the social context in learning to coach athletes with disabilities; and the role and importance of reflection in understanding the interconnections of learning from life experiences, particularly in the unique and developing parasport setting. The study will also aid coach educators in understanding the role and importance of past learning experiences and the social context in coach learning.

Keywords: lifelong learning, coaching, disability sport, experience, social learning, networks, reflection.

CHAPTER 1: INTRODUCTION TO THE DISSERTATION

Introduction

Sport coaching has been described as both a science and a craft that is honed over a long period of time and involves many variables and contexts (Bowes & Jones, 2006; Côté & Gilbert 2009; Lyle, 2002; Lyle & Cushion, 2010). Coaches develop their *coaching practice* over a lifetime, and one area of the coaching literature that has received little attention is how coaches learn in the parasport context or the world of sport for athletes with a disability. This dissertation explores the lifelong learning process through in-depth case studies with four parasport coaches. The term *parasport* will be used consistently throughout the chapters ahead to encompass all sport for athletes with a disability and, where applicable, the term *Paralympic sport* will be used to describe the multisport international competition that is governed by the International Paralympic Committee (IPC), and is the "parallel Olympics" to the Olympic Games.

The theoretical framework that guides this study is Jarvis' (2006, 2007, 2009) comprehensive view on human learning, including his concepts of lifelong learning, biography, disjuncture, and experience. Jarvis' psychosocial perspective on human learning is a useful lens for a closer examination of how coaches develop over a lifetime and how they change and continue the process of *becoming* through new experiences, which they gain, more often than not, within a social context. Trudel, Gilbert, and Werthner (2010) used Jarvis' (2006) lifelong learning perspective when examining coaches' development and the ways coaches appear to learn through a variety of settings and methods. Coaches' past experiences influence their learning and each coach may have a highly individual or idiosyncratic path to learning. This

uniqueness guides what each coach chooses to "pay attention to" as they perpetually develop and learn (Trudel, Gilbert, & Werthner, 2010; Werthner & Trudel, 2009).

A further complement to Jarvis' holistic psychosocial view of learning is Moon's (1999, 2004) generic view of learning from the perspective of experiential and reflective learning. Werthner and Trudel (2006) used Moon's model as a framework for defining and illustrating how coaches learn in a variety of settings: mediated, unmediated, and internal. The purpose of this dissertation was to (a) examine the various ways that coaches of athletes with a disability have learned throughout their lives and to draw deeper links to the meaningful experiences that influenced and shaped this learning and (b) examine the social learning and coaching networks in which the coaches work and live within the parasport context.

Research Approach: Case Study Methodology

A constructivist paradigm is the backdrop for the exploration of social experiences in this dissertation (Light, 2008; Merriam, 2002) and is used to help better understand how coaches learn to coach athletes with disabilities based on their personal experiences. Learning has been identified as being a highly individual and unique process and a constructivist approach - where the construction of reality and meaning is highly personal and unique to each learner – an appropriate fit (Merriam, Caffarella, & Baumgartner, 2007). Purposive sampling was used (Creswell, 2007; Patton, 2002) to select the participants, arriving at four full-time parasport coaches, with experience ranging from 10 to 25 years. Three semi-structured interviews were conducted with each coach (approximately two hours per interview) over three study phases, in accordance with a recommendation by Polkinghorne (2005) that multiple

interviews provide an opportunity for rich data collection. Jarvis' holistic view of lifelong learning was used as a guide for an initial pilot interview with a full-time national parasport coach. The interview was transcribed, sent back to the coach for member-checking, and analyzed by the primary researcher and her supervisor, an experienced researcher in the area of coach learning. Based on the pilot questions and resulting interview data analysis, a semi-structured research guide was developed to capture a wide variety of biographical detail pertaining to each coach's life and his or her coaching and learning experiences (Maxwell, 2005; Rubin & Rubin, 2005).

Qualitative case study collection and analysis is on-going and dynamic, from the start of the initial interview process to the final interview and at all points in between. Data collection and analysis in the qualitative case study involve both a quest for patterns and for deep understanding. As the detailed description of each case emerged, an analysis was performed of the patterns and themes that arose in the material gathered. Braun and Clarke's (2006) thematic analysis was selected for its flexible and evolving nature of issue and theme selection and because of its cohesive fit with Merriam (1998, 2002) and Stake's (2005, 2006) case study methods.

The study was divided into three phases. In the first phase, there was an initial interview with each of the four parasport coaches, exploring their biographies and asking specific questions on learning experiences throughout their lives. The training environment of each coach was observed through a one time, non-participant observation to enable the researcher to better understand the parasport coaching context for each of the coaches. In the second phase, a second interview delved deeper into the learning experiences and situations for each coach. As well, the

coaches were asked about key individuals who were identified by the four coaches in the first interview phase as key collaborators. Each of the individuals who were identified as a key collaborator were subsequently interviewed. The final phase consisted of a third interview with each of the four coaches. The purpose of this third phase was to continue to discuss the learning situations and experiences of the coaches, to deeply understand the relationships with the key collaborators, and the parasport coaching context in which the four coaches built their coaching practice.

All interview transcripts were analyzed via coding and cross-checking for emergent patterns and topics such as experiential learning, primary and secondary experiences, internal and external learning situations, interactions between coaches and other individuals, and processes of reflection. Transcribed interviews were coded using NVivo QSR 2010 (Version 9.0) data management system and themes and emerging issues were extracted and presented in the form of three articles that form the results section of this dissertation.

The participants were made aware that the purpose of the study was to explore how they learn, and how their past and present experiences and life-world, as well as other individuals in their lives, may have influenced their learning. As each new topic or subject emerged from the broader research questions, probes were used to further uncover the particulars of each learning experience for each participant. As the study was conducted within a constructivist paradigm, the researcher was an integral and inextricable part of the research process. In the interests of transparency, my research supervisor conducted a bracketing interview (Ahern, 1999; Rolls & Relf, 2006), in order to create greater reflexivity. In qualitative research, this "ability to bracket is

more a question of how reflexive we are, rather than how objective" (Rolls & Relf, 2006, p. 290). As I am a coaching consultant and sport director in parasport myself, it was important to examine my own biases and beliefs about coaching and learning and bracket those assumptions and beliefs in order to listen effectively to the experiences of the four coaches. This is because ‘‘it is not possible for researchers to set aside things about which they are not aware’’ (Ahern, 1999, p. 408).

Results

The articles that serve as chapters in this dissertation have been submitted for review to be published in the form of three research articles. They comprise the results section of this thesis.

A Case Study of a Parasport Coach and a Life of Learning. The complex process of sport coaching is a dynamic and evolving practice that develops over a long period of time. As such, a useful constructivist perspective on lifelong learning is Jarvis' (2006, 2007, 2009) theory of human learning. According to Jarvis, how people learn is at the core of understanding how we can best support educational development. The purpose of the present study was to explore the lifelong learning of one parasport coach and how his coaching practice evolved and developed throughout his life. A thematic analysis (Braun & Clarke, 2006) was used to extract themes and examples from three two-hour interviews, as well as interviews with key collaborators in his coaching network. The findings reveal a coach whose coaching practice is founded on pragmatic problem solving in the face of a lack in resources; an investment in formal and nonformal adapted activity education at the start of his parasport career; and observation, communication, and relationship-building with his

athletes and the parasport community. Suggestions are provided for coach developers on how they might invest resources and create learning opportunities for coaches of athletes with a disability.

Dynamic, Evolving and Social: Interactions That Influence the Learning of Parasport Coaches. Since the nineteenth century, researchers have investigated human orientations to learning (Merriam, Caffarella, & Baumgartner, 2006). Within the learning literature is the concept of social learning: learning in the world by interacting, observing, and taking part in the social world. A number of social learning theories have been applied and tested in the coaching context, resulting in a link to the concept of social learning systems and the role they play in coach learning. Coaching researchers have begun to explore the concept of social learning systems to understand how coaches engage in different types of interactions and relationships in order to learn how to coach. A collective case study of four parasport coaches was conducted to explore how different types of interactions play a role in parasport coaches' learning. Suggestions to guide coach developers and sport organizations on how to further nurture and grow these social learning systems in parasport are provided.

Reflection in parasport coaching: A collective case study. Moon (1999, 2004) has noted that reflection can be seen as a process of thinking anew about already existing knowledge and experiences. More recently, Boud (2010) has described reflection as “a means to engage in making sense of experience in situations that are rich and complex" (p. 29). Research in coach learning has suggested that one of the ways coaches learn is by reflecting on their coaching

practice. The purpose of the present study was to explore how four parasport coaches used reflection to help them learn and develop as coaches within the parasport context. The findings are discussed in light of the context of parasport and are illustrated by four themes: reflecting on past and current experiences, reflecting with a "lens of adaptability", reflecting with others, and the relevance of the timing and depth of reflection, as coaches reported using reflection "before, during and after" their coaching experiences. Recommendations are suggested for how reflective practice might be nurtured for parasport coaches.

Discussion

In the general discussion section of the dissertation, following the three research articles, a link is provided between the key themes from each article and core issues in the area of lifelong learning and social learning theory and the context of parasport coaching. The research findings revealed (a) how coaches' unique life experiences influence what and how they learn, (b) how social learning systems influenced how the parasport coaches learned, c) how the coaches' cognitive structures evolved throughout their lives, and d) how the reflective process played a role in the unique learning context of building a coaching practice in parasport. Recognizing the deeper social constructs involved in parasport, this dissertation used a psychosocial perspective to explore the experiences of four coaches in parasport.

The research contributions of this dissertation deepen our comprehension of coach learning within parasport by providing a better understanding of how parasport coaches learn over the course of their lifetime and by creating rich descriptions of the lived experiences of four parasport coaches and how they have learned - in what

contexts, learning situations, collaborations and social learning systems - to create a career in parasport coaching.

CHAPTER 2: THEORETICAL FRAMEWORK

Theoretical Framework

Human learning is a vast field and there is an extensive body of human learning theories in the educational and psychological literature (Illeris, 2009; Merriam, 2002). Peter Jarvis (1987, 2006, 2007, 2009) has focused extensively on learning for the past twenty years and his comprehensive human learning theory, including learning from a lifelong perspective, is extremely useful in exploring the learning processes of individuals and serves as the foundational theoretical framework for this dissertation. This chapter will introduce key concepts for Jarvis' theory on human learning, as well as a complementary learning theory (Moon, 1999, 2004) on reflective and experiential learning that adds depth to the exploration of the learning experiences of the four parasport coaches in this study.

Jarvis bases his view of learning on a humanistic approach that hinges on humankind's quest for knowledge and understanding. In Jarvis' view, this process of learning is life long, using a time-space continuum that begins at birth and continues throughout an individual's lifetime. According to Jarvis, there are four main approaches that have been developed in order to explain human learning: behavioural theories, cognitive theories, emotive theories, and experiential theories. He suggests his comprehensive theory of human learning takes an existentialist view that encompasses all four approaches. He sees learning as a process of *becoming* and argues that without taking life experiences and individual variables into consideration, any approach or learning theory is one-dimensional and depersonalized. A person's life experiences, social networks, and identity all have an

impact on how and what he or she learns. Core concepts in Jarvis' human learning theory are the concepts of lifelong learning, biography, and disjuncture.

This chapter begins by examining lifelong learning from a policy perspective. This perspective helps to situate lifelong learning within the educational and social structures surrounding adult learning. This will be followed by an examination of lifelong learning from a psychosocial perspective and an exploration of Jarvis' concepts of biography, disjuncture, and types of learning using a lifelong human learning theory that is sensitive to the influences of time and of one's life-world (Jarvis, 1987, 2006, 2007, 2009).

Within this discussion, the integration of a secondary and complementary view of learning, Jennifer Moon's reflective and experiential learning (1999, 2004), is included. While Jarvis provides a strong foundation for human learning across a lifelong time-space continuum, Moon contributes to the understanding of how a constructivist psychosocial approach may be used to appreciate learning in the adult setting, emphasizing the reflective process and the representation of "material of learning." The concepts of meaning, social context, and learning situations will be defined and explored, as they are integral to Jarvis and Moon's complementary views on human lifelong learning.

Lifelong Learning From a Policy Perspective

Jarvis views learning as a complex human phenomenon. The word *learning* itself can be difficult to define, as the word and concepts attached to it continue to be debated among scholars and philosophers. Jarvis writes "human learning is a complex set of human processes that are in some ways extremely difficult to understand …

learning is about experience, usually conscious experience" (Jarvis, 2006, p. 4). Jarvis proposes that *learning* is the process of being in the world and a process in which our inner self and the outer world meet in the middle. He suggests that learning can be a transformative process in that it enables us to adapt and apply new experiences to our present and future understanding of the world around us.

In Jarvis' (2006) holistic theory of learning, this process of learning takes place over an entire lifetime, hence the term "lifelong learning." In fact, lifelong learning can be seen as a new social movement, a reaction to, and result of, the political, social and economic globalization of the modern world (Jarvis, 2007). In reflecting on this social movement, Jarvis discusses the Organization for Economic Cooperation and Development (OECD) and how it has incorporated lifelong learning in its policies to encourage workers and employers to embrace continual training and upgrading of skills in the workplace (Jarvis, 2007). The OECD states that education beyond formal schooling should be accessible for all and occurs over the lifespan of an individual. In taking a critical look at the OECD, Jarvis (2007) suggests that, in many cases, this lifelong learning support by the State may in fact be a disadvantage to the already disadvantaged. This is in part because the concept of furthering one's education as an adult may ultimately fall to the responsibility of the individual and may not be accessible to the potential learner who does not have the resources to access further learning.

Nevertheless, the more an individual learns new skills and uses new experiences and training opportunities, the more companies will benefit in the competitive marketplace. In an ideal world, the same could be true of sport coaches:

throughout the lifetime of any individual coach, he or she might seek out opportunities to learn how to adapt to new situations, to integrate new thoughts, experiences, emotions, and to develop new skills in order to learn how to coach more effectively. This would ideally be a dynamic and ongoing process. The irony of this situation in coaching - unlike other professions in today's global marketplace - is that while a coach's skills and experience base may grow, coaching salaries and earnings often do not, since so many coaches are volunteers or are paid very little for their services (Coaching Association of Canada, 2009; Trudel, Gilbert, & Werthner, 2010). Perhaps more challenging is the situation faced by the coaches of athletes with a disability. Making a living in an already resource-impoverished marketplace as parasport is an even more daunting challenge than in the mainstream able-bodied sport system.

According to Jarvis (2009), this policy perspective on lifelong learning can be situated within a broader and multi-disciplinary view:

> Learning is always personal but some of the opportunities to learn are provided by social institutions, such as the State and employers. We are faced with not one term but two, of not totally different, but overlapping phenomena - one human and individual and the other both individual and social - or at least institutional; one more likely to be studied by the philosopher and the psychologist ... and the other to be studied by both of those and also by the economist, the policy theorist and the sociologist. Certainly the study of lifelong learning requires a multidisciplinary approach. (p. 99-100)

And yet, Jarvis notes that learning occurs all along the lifespan, including the period before an individual becomes part of the greater economic workforce. This dissertation takes a psychosocial approach, examining learning from an individual perspective within the social context in which we all live.

Lifelong Learning From a Psychosocial Perspective

In Jarvis' (2006, 2009) holistic view of human learning everything that an individual thinks, feels, and does is part of this comprehensive life-world and makes up his/her life history or biography. In his early writing on learning, Jarvis (1987) worked primarily in the adult learning setting. Over the past two decades, his theories on human learning have undergone a transformation. He critiqued his earlier work for not taking into account some critical underlying principles, such as the integral role that emotion plays in learning, the complexity of lifelong learning, planning as well as reflection, and the continuous nature of learning.

Jarvis (2006) defines his theory on lifelong learning as the following:

> *The combination of processes throughout a lifetime whereby the whole person – body (genetic, physical and biological) and mind (knowledge, skills, attitudes, values, emotions, beliefs and senses) – experiences social situations, the perceived content of which is then transformed cognitively, emotively or practically (or through any combination) and integrated into the individual person's biography resulting in a continually changing (or more experienced) person.* (p. 134; italics in original)

Jarvis' approach may therefore be linked with a psychosocial and individual approach to learning. In his more recent explorations of learning, Jarvis (2006, 2007,

2009) proposes a holistic view of human learning where the body and mind are inextricably linked and cannot be studied separately. He presents the ideas of primary and secondary experiences through which humans learn. Primary experiences include our daily first-hand living experiences, norms, and expectations that occur in everyday life. We often take them for granted, and because of this, they are often non-learning or pre-conscious learning situations. Secondary experience is much of what we learn about the world that comes from others or our own narratives and interactions that we share and reflect upon later. A further explanation linking primary and secondary experiences draws attention to the relationship between lived "first-hand" experience and reflection: “The relationship between theory and practice may also be seen as a relationship between primary and secondary experience” (Jarvis, 2006, p. 85).

In Jarvis' lifelong learning theory, an individual will perceive a *learning experience* when there is a sense of tension or a heightened awareness of differences between one’s past lived experiences and what one is currently experiencing. The result may be new meaning or learning which would then form a part of one’s new life history. The real outcome of learning is the idea of becoming. “Human beings are always in the process of becoming – we are always incorporating into our own biographies the outcomes of our new learning and thus creating a changed, but also paradoxically re-creating the same, person” (Jarvis, 2006, p. 119).

Several core concepts will now be explored that are central to the psychosocial perspective on lifelong learning: a person's biography, experience, disjuncture, types of learning, the process of becoming and meaning, and learning in the social context.

In addition, Moon's (1999, 2004) generic view of learning will be introduced as an important complementary learning theory for understanding lifelong coach learning and the process of reflection. This section will also conclude with a summary of some of the limitations in using this approach.

Biography. For Jarvis, the concept of *biography* is a core concept in any discussion of the human learning experience: "Experience is seamless and relates fundamentally to our conscious awareness of the external world throughout our lifetime" (Jarvis, 2006, p. 73). He argues that our biography and experiences are complex and are made up of bodily, emotional, and cognitive dimensions. Biography is therefore a pivotal concept as it encompasses all our experiences at a particular time. Jarvis writes that there is a sense "in which learning occurs whenever harmony between our biography (past experiences) and our experience of the 'now' needs to be established or re-established" (Jarvis, 2007, p. 4).

Disjuncture and human experience. The human experience occurs at "the intersection of the inner self and the outer world and so learning occurs at this point of interaction, usually when the two are in some tension, even dissonance, which I have always called 'disjuncture'" (Jarvis, 2006, p. 7). Disjuncture is a second key concept to understanding Jarvis' theoretical framework of human learning. According to Jarvis, this tension, and the sensation that causes an individual to make meaning of the feeling, is in effect where and when we learn. We may go along for many days, weeks, or months taking our life-world for granted, and then something occurs that creates a tension, or a 'disjuncture' for us, and we have the opportunity to learn something new. If and when we choose to learn from that situation, we may then go

back to taking what is a new life-world for granted again. This cycle continues, over and over, throughout a person's lifetime. These moments of change, or disjuncture, can involve thoughts, actions, emotions, and reflections on the broader experience: the person is changed in some way each time.

As Moon's (2004) reflective practice and generic view of learning is a complimentary theory in this dissertation, it is important to note that her term of "cognitive dissonance" closely resembles the concept of disjuncture. Cognitive dissonance is described as "the - often uncomfortable situations - in which new material of learning is in conflict with the learner's cognitive structure" (Moon, 2004, p.19).

Types of learning. Jarvis introduces a variety of types of learning, namely non-learning, non-reflective learning, and reflective learning. Jarvis (2006) proposes that, in some instances, persons do not learn. Sometimes there is a presumption from a person that they already know the answer or they feel they do not need to reflect any further on a situation or make any changes. Sometimes the learning that is occurring is *non-reflective learning*, as it is occurring unintentionally or through a situation of non-reflection. This non-reflective learning includes such concepts as *pre-conscious learning* and *memorization*. In pre-conscious learning, people have a limited or complete lack of awareness of an experience or situation today but at a later time may become conscious of this knowledge and learn and change. A concrete example might be speed-reading, "when we scan columns of words and take in much more of the meaning than the actual words upon which we focus" (Jarvis, 2009, p. 28). The concept of memorization is pure recall of information that is provided to an individual

(Jarvis, 2006). As people reflect on a situation from today, or one from the past, they may also create knowledge by finding a resolution to the situation and thereby create new meaning for themselves (Jarvis, 2006).

As previously mentioned, another view of human learning that is complimentary to Jarvis' (2006) work and applicable to a discussion of the coaching process is Moon's (1999, 2004) generic view of learning. To understand her view of learning, it is important to understand the distinction she makes between two views of learning: the "building a brick wall" and the "network". From the viewpoint of building a brick wall, Moon (2004) suggests that the "teacher provides for the learner the 'bricks of knowledge' (Moon, 2004, p. 16). It is assumed that the teacher knows how these will fit the pattern of the wall. The wall – knowledge – is thus built up" (p. 16). Moon's second viewpoint or metaphor for learning is a "vast but flexible network of ideas and feelings with groups of more tightly associated linked ideas/feelings. In the network some groups are far apart and some are near to each other and there are some relatively isolated ideas" (2004, p. 16). She calls this network of ideas, feelings, or emotions a "cognitive structure" and states that it represents "what is known by the learner at a particular time" (p. 17). This cognitive structure plays an important role in the learning process because it will guide what we choose to pay attention to and what we choose to learn. In this network metaphor, "the process of learning is not, therefore, about accumulation of material of learning, but about the process of changing conceptions" (p. 17).

Moon presents learning as occurring in mediated, unmediated, and internal learning situations. Mediated learning situations are formal learning situations such as

a course or a learning situation that is directed by someone else. In an unmediated situation, there is no instructor involved and the learner chooses what to learn. This could, for example, include reading a book, consulting with another professional, or doing an internet search for more information on a particular topic. Finally, the third type of learning situation is the internal learning situation where there is no new material of learning and the learner reflects on information that is already part of his/her *cognitive structure.* This internal process is where the learner re-organizes, sorts, and reflects on an on-going basis in an ever-evolving process.

Two other important concepts that are discussed by Moon are deep and surface learning. In deep learning, the intention is to "understand" the material, seeking meaning and new ideas. Reflection helps make this type of learning possible. In surface learning, the learner simply seeks to absorb the information out of obligation and may not have much of a personal interest in it (Moon, 2004).

Moon also created a map of learning (a five stage hierarchal model) based on previous works on reflection, such as Schön's (1983), and founded "on the literature on reflection and student learning, supplemented by observation and personal reflection" (1999, p. 104). Moon classified the first three stages (noticing, making sense, and making meaning) as surface learning, with the last two stages being a higher order of deep learning (working with meaning and transformative learning). It is at these latter two stages where the process of reflection takes place.

In the first stage (noticing), the cognitive structure facilitates the learner to notice what is to be learned. Once noticing occurs, the learner can then proceed to the next stage (making sense), where he or she tries to organize and find coherence

between the present material and previous knowledge. In the third stage of learning, making meaning, the learner assimilates new material into the cognitive structure, so he/she relates it to what is already known and the cognitive structure accommodates the new meaning. This stage is the first in a transition to integration or meaningful learning (Moon, 1999). In the fourth stage (working with meaning), the learned materials and the meaning derived become part of the cognitive structure and learning becomes a personalized process of constructing meaning. The final stage (transformative learning) is the most sophisticated, where the learner is now capable of evaluating the frame of reference, others' knowledge, and the process of knowing.

The process of reflection and creativity in the two final stages are part of what Moon calls "upgrading of learning" and reflection is viewed as an important means to assist in personal and professional development. She writes that working with constructive and critical others (mentors or peers) can also play an important role in deepening and improving the quality of the reflection, by asking important questions and challenging the learner to push beyond his/her own internal mental and emotional boundaries.

Moon and Jarvis are both constructivists using related concepts to investigate human learning. Jarvis' concept of biography is similar to Moon's cognitive structure: the life-world of the learner, the type of learning environment, and the holistic way that these work together to promote or inhibit learning are similar in both theories.

Meaning. Another important element in the psychosocial approach to learning is the concept of *meaning.* Both Jarvis and Moon view *meaning* as being a central

aspect to the process of learning. Moon's 2004 approach to learning includes the development of the concept of "meaningfulness":

> We have suggested that meaningfulness is a judgement to be made by the learner in the context of the sense of her cognitive structure (at that time) ... The nature of meaningfulness in the constructivist approach is crucial for relationships between the processes of learning and instruction and for the attempt to tease out the nature of experiential learning. (p. 18)

In Moon and Jarvis' approaches, the learner's experiences - and what he/she derives as being meaningful - make an indelible change in his/her cognitive structure (Moon) or biography (Jarvis), which creates the changed and ever-evolving person. For Jarvis and Moon, not every experience is deemed as being meaningful and individuals tend to not focus on such experiences (Jarvis, 2006). However, each experience that a person has throughout a lifetime and the changes that occur in the evolving process, is a hybridization of two major orientations to human learning: the humanist and the constructivist views. These views combine the notions that learning serves as a means to fulfill personal development (humanist) and that learning is a highly cognitive activity. Meaning is constructed through interaction with others in our culture and therefore includes the individual and the social (constructivist). These orientations to learning will be discussed in more detail in Chapter 3 as part of a broader review of literature on social learning theories.

The social context. According to Jarvis (2006), social context and learning in the social environment are fundamental to studying learning from a lifelong perspective. Culture and environments, or *life-worlds,* are key to interpreting the

intricate puzzle that explains the ways individuals learn. Humans live in a social environment and while each individual's biography is unique, we are all part of a larger life-world, a society, or a particular culture. Those three terms - life-world, society, and culture - are explored by Jarvis (2007) but they can be problematic as words like "culture" and "society" have many different meanings and can be ambiguous concepts. A person's society and culture might be defined through their geographical location, religion, family, or racial boundaries and yet we are all immersed in a variety of these influencing factors. Jarvis (2006) also adds a definition for culture that is useful to the orientation of this dissertation: "all knowledge, skills, attitudes, beliefs, values, and emotions that we, as human beings, have added to our biological base" (p. 55).

These ingredients in our culture, as defined above, begin at birth, and as previously discussed in the definition of "biography", involve primary and secondary experiences. Based on the demands and opportunities in any one learner's life-world, primary and secondary opportunities or experiences for learning may vary greatly. A wide variety of variables in one's biography can influence one's learning and the opportunities to learn (Jarvis, 2007).

Learning situations. When exploring the field of adult learning, it is often assumed that the majority of learning takes place in a place of learning or educational institution. However, learning situations have a much broader scope. This can be a source of confusion when comparing coach development literature and the coach learning literature (Mallett et al., 2009), as the learning situation and the learning context are often confused.

While Jarvis proposes that all learners tend to use similar learning processes, the settings in which they are exposed to learning are different, falling into formal, nonformal, and informal settings (Merriam, 2006). Formal settings include "highly institutionalized, bureaucratic, curriculum driven, and formally recognized with grades, diplomas, or certificates" (Merriam et al., 2006, p. 35). The nonformal settings "tend to be short-term, voluntary, and have few if any prerequisites" (Merriam et al., 2006, p. 30). They also have three sub-types: settings that are *complementary* to the formal system (such as "drop-out" programs for those learners who were not successful in the formal system); settings that are supplementary or *alternative*, such as indigenous or civic community-delivered programs; and settings that are *international and development-based* and designed to address inequities or social issues (Merriam et al., 2006). The third learning situation, informal settings or informal learning, involves what Illeris (2004) calls "everyday learning". This learning is defined as "the spontaneous, unstructured learning that goes on daily in the home and neighbourhood, behind the school and on the playing field, in the workplace, marketplace, library and museum, and through the various mass media" (Coombs, 1985, p. 92). However, because informal learning is interwoven with daily life, it may not be easily recognizable or easy for the learner to recall.

The learning context is "the setting in which the learning occurs - the course, the instructor, relevant organizations, and so on - and the learning situation is the learner's perception of the context and unique to the learner" (Moon, 2001, p. 48). This distinction between the two - the learning context and the learning situation - is important because "it will allow us to discuss learning from both the coach-learner's

perspective (learning situation) and from the coach development administrators' (CDAs) perspective - the individuals in charge of providing adequate learning contexts to coaches" (Trudel, Culver & Werthner, 2013, p. 379). The purpose of this dissertation was to explore how parasport coaches learn to coach and not directly on the broader field of coaching development, although both areas are interconnected and will shed light on one another in the global field of sport coaching research.

Limitations of Jarvis. Jarvis' (2006, 2007, 2009) theory of human learning is not without limitations. While Jarvis presented both policy-driven and psychosocial perspectives on lifelong learning, the two are at times contradictory. In some situations, the very development of lifelong learning opportunities or policies might mean an individual must take advantage of them on one's own and yet may not have the economic or social means to do so. The individual is thus placed at a further disadvantage. As well, Jarvis' theory of lifelong learning does not spend a great deal of time on the role of reflection or the concept of meaning. It is for this reason that Moon's concepts in these areas have been added as a useful complement. Jarvis also does not go into great detail on the complexities of social learning, particularly networks in adult learning.

CHAPTER 3: REVIEW OF LITERATURE AND DISSERTATION PURPOSE

Review of Literature and the Dissertation Purpose

The review of literature is divided into four sections. The first section introduces the research literature on the variety of dimensions and contexts within the field of sport coaching. The second section explores the field of coach learning and development within the social context. The third section explores social learning systems. And finally, the fourth section examines literature pertaining specifically to coaching in the parasport context. This chapter closes with the purpose of the dissertation.

Literature on Sport Coaching Contexts

As previously discussed, coach learners tend to have unique and idiosyncratic paths to learning within a variety of contexts. These contexts vary, in part, depending on whether coaches are full or part time, paid or volunteer, and coaching within a highly competitive or a more participatory environment. This dissertation explores the learning experiences of four Canadian parasport coaches, all of whom have taken part in coach training, are part of the Canadian sport system, and coach full time in a competitive environment.

Duffy and colleagues (2010) group sport coaching into two standard occupations and four umbrella coaching domains. The two occupation delineations are in recreational sport (participation-oriented) and competitive sport (performance-oriented). Further classification within the participation-oriented population are (a) coaches of beginners and (b) coaches of participation sportspersons of all ages. Within the competition-oriented grouping, there are (a) coaches of talent identified performance athletes and (b) coaches of full-time high performance athletes. Four

specific coaching roles are also identified: apprentice, coach, senior coach, and master coach. Coaches may be full-time paid coaches, part-time paid coaches, or they may volunteer their time entirely. Furthermore, coaching roles may also vary in terms of levels of motivation, experience, qualification levels, hours of practical training time, and levels of pay (Duffy et al., 2011).

The Coaching Association of Canada has re-structured the National Coaching Certification Program (NCCP) over the past decade. The NCCP had previously been a linear "beginner through high performance" system of formal education that exposed each coach in 67 different sports to a Level 1 through 5 series of certification opportunities in the form of hierarchal theoretical, practical, and technical qualifications. The system is now structured according to the type of athlete, and the role of the coach, to meet the needs of the participants in that particular stream of sport. The revised and current program is sub-divided into three classifications: a community stream, an instructional stream, and a competitive stream (Coaching Association of Canada, 2012). The community context has a further sub-division between initiation (primarily first-time introduction to sport) and adult-ongoing (participants in a recreational setting). The instruction stream is sub-divided into three sub-contexts: beginner, intermediate, and advanced performers. The instruction stream is typically that - instructional - and participants do not participate in external or formal competitions (Coaching Association of Canada, 2012). The final context is the competition stream that is divided into Introduction to Competition, Competition Development, and High Performance, all varying degrees of performance-based sport in which participants compete and develop according to each level.

From a parasport perspective, it is important to note that national sport organizations may chose to integrate their formal coaching material with technical, practical, or theoretical resources for parasport into their mainstream able-bodied program delivery, or they might deliver a para-specific module as a supplement or professional development training opportunity. However, over half of the 67 sports in the NCCP in Canada have not yet developed para-resources although a generic module is available to all sports (Coaching Association of Canada, 2006). See Appendix A for details on parasport program development.

As Lyle (2002) suggested a decade ago, no generic definition for "coaching" does justice to the intricate and complex process that a person goes through to arrive at any particular point in time in their coaching practice. Indeed, many coaches will migrate back and forth throughout the varying classifications listed above, from unpaid to paid and back again and from recreational to competitive or vice versa. Coaches develop their coaching practice over a long period of time and therefore a lifelong learning perspective is ideal for examining this dynamic and evolving role in our sport system.

Literature on Coach Learning and Development

Over the past decade, we have seen a steady rise in the amount of empirical research on coaching education (Cushion, Armour, & Jones, 2003; Gilbert, Côté, & Mallett, 2006; Gilbert, Gilbert, & Trudel, 2001; Gilbert & Trudel, 2004). However, as we look to investigate how coaches learn, it is also important to examine research that has been conducted in *coach learning,* as well as the field of c*oach development.*

Jones and Wallace (2005) suggest that we do not adequately understand the complexities of sport coaching, and furthermore, it has been proposed that coaching is not a service that is merely delivered, but is a dynamic social activity that actively engages coach and athlete (Cushion et al., 2006). Coaching then may be seen as a practical and a social activity and the coach learner hones this practice (and the associated thoughts, emotions and actions) in a social arena.

Some studies have suggested that coaches acquire knowledge from other coaches through mentorship (Bloom et al., 1998), through their own athletic experiences as athletes (Côté et al., 1995; Gilbert, Côté, & Mallett, 2006), through reflection and their own coaching experiences (Cushion, Armour, & Jones, 2003; Gilbert & Trudel, 2005; Jones, Armour, & Potrac, 2003; Reade, Rodgers, & Spriggs, 2008), from formal coach education courses and certification (Gilbert, Côté, & Mallett, 2006; Gilbert & Trudel, 1999) and through formal or informal collaborative networks such as communities of practice, informal knowledge networks, and networks of practice (Culver & Trudel, 2006, 2008a, 2008b; Culver, Trudel, & Werthner, 2009). These communities and networks will be elaborated on in the next section. In addition, as Werthner and Trudel (2006, 2009) suggest, the learning paths in coaching are often idiosyncratic and very unique to each coach and may include some or all of the above listed learning situations.

Werthner and Trudel (2006) used Moon's generic view of learning to examine an alternative way of viewing how coaches learn to coach. Using a case study approach with an elite Canadian coach, they also provided fictitious but illustrative coaching examples to clarify the variety of ways a coach might learn. They noted that

coaches learn in an idiosyncratic manner using a variety of learning situations including reflection (Werthner & Trudel, 2006; 2009). Mallet, Trudel, Lyle, & Rynne (2009) indicated that coaches may also learn in different settings that range from formal courses, to informal or unstructured settings. Other related studies have suggested that coaches tend to place higher value on the importance of learning in informal settings versus formal education settings (Cushion, Armour, & Jones, 2003; Lemyre, Trudel, & Durand-Bush, 2007). It would seem that coaching researchers are only just beginning to acknowledge and realize that all three types of learning experiences - formal coach education courses, nonformal clinics or conferences, and informal mentorships or other forms of self-directed learning - may add to a coach's learning and global development (Duffy et al., 2011; Jones, Morgan, & Harris, 2012; Trudel, Culver, & Werthner, 2013). There is both a need for more exploration into coach learning (how coaches learn, and the types of education or experiences that affect or accentuate this learning), as well as coach development (a broader field, looking at the global development of the learner in his/her coaching practice or career).

There has also been a focus on the analysis of coach learning situations - in particular, more formal situations such as coaching courses - and some of these studies have been critical of the relevancy and usefulness of these courses to coaches' needs (Armour, 2010). Critique of these formal and nonformal offerings has noted that there is usually little follow-up with the coach and few opportunities to facilitate the integration of new knowledge into their coaching practice (Nelson, Cushion, & Potrac, 2006). In addition, because there is often a high ratio of coach to facilitator

and a wide range of coaching experience, formal learning opportunities often fail to address the individual coach's specific coaching context (Cushion et al., 2003; Lemyre et al., 2007; Mallett et al., 2009; Nelson et al., 2006). Less formal or "nonformal" situations, such as coaching clinics or conferences, have been found to offer a more contextualized approach but are subject to less quality assurance and feedback and may only be offered to select groups (Nelson et al., 2006). Coaches may not have access to these offerings due to a lack of support from their sport organizations and very little empirical research has been done to date in these nonformal opportunities (Mallett et al., 2009).

Literature on Social Learning Systems

It has been suggested that coach learning is a social process and some forms of learning take place within social learning systems (e.g., networks or communities) (Culver & Trudel, 2006). The concept of social learning systems may explain how coaches might use three different types of interactions in order to learn: *communities of practice* (CoPs), *informal knowledge networks* (IKNs), and *networks of practice* (NoPs). A definition and brief description of these social learning systems or "networks" will follow concluding with a final new and evolving network, the *dynamic social network* (DSN) as well as some additional considerations for the study of learning networks.

For Wenger and colleagues (2011) *communities* and *networks* have emerged as "two aspects of social structures in which learning takes place" (p. 9). They define the network aspect as referring to personal interactions, connections, or relationships among people who have specific reasons to connect. They define the community

aspect as referring to the "development of a shared identity around a topic or a set of challenges. Furthermore, there are groups where one aspect so clearly dominates that they can be considered 'pure' communities or 'pure' networks" (Wenger et al., 2011, p. 9). In their earlier work, anthropologists Lave and Wenger focused on the idea that learning involves participation in systems of co-participation and they called these systems “communities of practice” (Lave & Wenger, 1991; Wenger, 1998). The authors argue that it is essential that the proper social relationships are in place in order for some forms of learning to occur and their communities of practice model is useful across many forms of human interactive enterprises, such as politics, business, education, and sport.

Social learning systems such as CoPs may exist in a variety of places in our everyday lives. Lave and Wenger (1991) looked at the kind of social relationships and engagements that must be in place in order for learning in CoPs to occur. Learning can come from participating and belonging to CoPs that are underpinned by the following assumptions: “(a) humans are social, (b) knowledge is competence in a valued enterprise, (c) knowing is active participation in that enterprise, and (d) meaning is the ultimate product of learning” (Wenger, 1998, p. 4). When we meet the assumptions above and share a sense of mission and “shared enterprise” that binds us with others in a workplace, school, or special interest group, a CoP has the potential to exist. Further to these assumptions are three dimensions by which the CoP is defined (Wenger, 1998). The first is “mutual engagement,” meaning a mutual sharing of knowledge and expertise. Members become aware of their own areas of expertise and how they can use it to help other members of the CoP; at the same time, they are

aware of the reciprocity of others in the CoP who can provide expertise back to them. The second dimension is the “joint enterprise,” where the mutual engagement and sharing of expertise is understood and constantly negotiated and transformed by members with time. The final element is the concept of the “shared repertoire.” This shared repertoire is a collection of everything from tools, stories, actions, shared vocabulary, routines, or particular techniques the group may discuss and share.

More recently, Wenger has expanded the concepts of the community and network aspects of social learning systems to incorporate a broader view of learning: "landscapes of practice" (LoP) (Wenger, 2010). "Instead of focusing centrally on a community of practice and membership in that community of practice, the focus is more on multiple communities and systems of practice, landscapes of practice, and identity as formed across practices and not just within practices (Omidvar & Kislov, 2014, p. 270).

Various types of knowledge networks and practice communities help generate and spread knowledge in the workplace, education setting, and other environments (Allee, 2003). Knowledge sharing tends to follow the lines of social interactions but not every organization or environment meets the structured and well-defined guidelines of the CoP (Allee, 2003). Therefore, in addition to the CoP, learning and sharing of information also takes place in “informal knowledge networks” and “networks of practice.” Informal knowledge networks are comprised of individuals who exchange information with one another. They do not necessarily come from the same area of "practice", and this relationship does not have the CoP-established dimensions of a mutual engagement and joint enterprise to bind the members

together. Rather, they are a group of looser and more informal relationships that may not have clear boundaries (Allee, 2003).

In a network of practice, relationships may arise through individuals seeking out information in order to accomplish particular shared goals as well as asking for and sharing knowledge with each other. The term “network of practice” helps to define this subset of relationships or networks that may extend beyond one given discipline or occupation but with whom they share some similar interests or common goals as well as a common “practice” (Brown & Duguid, 2001). In an electronic NoP (also called a virtual or electronic community), individuals in the network may be practioners of the same particular practice or area of expertise but they do not necessarily know each other and may share information from afar or over the internet. In addition, most communication and information is one-way in direction with very little collaboration (Brown & Duguid, 2001).

Occhino, Mallett and Rynne (2012) have introduced an emerging social learning network among coaches. These dynamic social networks (DSNs) are characterized "by the development of a trusted and respected relationship between a coach and a confidante where the coach actively seeks counsel from a person" (Occhino et al., 2012). These DSNs appear to often result in direct changes to the coaching practice of the coach due to the highly applied nature of the discussions and the issues and solutions generated. The trusted network individuals tend to be in positions or affinities that were not in direct competition with the coach and this characteristic seguays into some important further considerations when studying a network of learning: issues of competition, power, and identity.

One of the most obvious issues that may inhibit the full development, benefits, and sustainability of such groupings as a CoP or DSN as a means for learning in coaching (or other areas in sport such as administration, sport marketing, officiating, or a community of athletes) is the reality of intense competition and power disparity within the coaching context. Intense competition is integral to competitive sport, as the term itself suggests. Athletes are competing against one another and often, so are their respective coaches. It is therefore not uncommon for coaches to withhold information or "trade secrets" from competing coaches or other sport system professionals (Culver & Trudel, 2006; Occhino et al., 2012).

In a study looking at elite British basketball coaches (2007), Owen-Pugh reports that none of the elite coaches interviewed for the study reported learning from peers. The only references to learning from other coaches were from what might be referred to as "master" coaches. Owen-Pugh sees this notion to be at odds with Wenger's (1998) preference for non-hierarchal peer groups. In their response to Owen-Pugh and other commentaries, Culver and Trudel (2008b) argue that the financial aspect to professional and elite sport does set the spotlight on winning, but that in youth sport "the aim is not to make money but to provide a rich environment for the development of the young. Notwithstanding, due to the competitive nature of sport, adults will have to work together extensively to achieve the difficult task of 'negotiating' the practice of a competitive youth sport environment" (Culver & Trudel, 2008b; p. 30).

And yet, even at the other end of the competition continuum - in grassroots and youth sport – it has been found that coaches interact with only a select few people, for

whom they had a significant level of trust, when it came to sharing and exchanging coaching information (Lemyre, Trudel, & Durand-Bush, 2007; Gilbert & Trudel, 2001).

In a recent exploration of the social side of coach learning, Stoszkowski and Collins (2012) draw attention to some of the implications for more informal or network-based coach learning:

> If we are to accept and embrace more 'informal' methods of coach development (such as CoPs) as an alternative to the training and certification of coaches via formal coach education, and wish to encourage coaches to become truly autonomous learners, acknowledging the social processes at play in coach learning is essential. ... coaches themselves need to increase their awareness of the social processes acting upon them during their development. (p.10)

Indeed, coaches live in a social world. They observe and listen to others. They exchange, accept, challenge, and reject ideas. Coaches also form affinities and relationships with peers and members of their common practice. It would seem that competition, power, and trust are integral in forming these important relationships and networks. All along this journey through a lifetime, these individuals learn to coach. As the world of parasport and the demand for quality parasport coaches continues to grow, more research is needed to understand coaches and their learning within the parasport context.

Literature on Coaching Athletes with a Disability

Coaching science research has been conducted in sport for persons with disabilities, although at a much slower rate than the research within the able-bodied

world of sport (Cregan, Bloom, & Reid, 2007; DePauw & Gavron, 2005). In Canadian sport policy and within the strategic plans of Canada's sport agencies (Canadian Heritage, 2006; Canadian Paralympic Committee, 2007; Sport Canada, 2002), coaching is listed as one of the pillars to a successful and positive sport experience for parasport in Canada. Despite this apparent acknowledgement of the importance of coaching, research into who is coaching persons with disabilities remains relatively rare (DePauw & Gavron, 1991), as is the research into how these coaches learn to coach.

Nevertheless, over the past 20 years, a few researchers have looked specifically at the roles of coaches for athletes with a disability (Cregan, Bloom, & Reid, 2007; DePauw, 1986; DePauw, 1990; DePauw & Gavron, 1991; McMaster et al., 2012; Tawse et al., 2012). To provide an introduction to the current context of disability coaching in Canada, the most recent Canadian survey on persons living with disabilities (a physical or mental condition that limits a person's movements, senses, or activities), states that 3.8 million Canadians make up the national disability rate of 13.7% (Statistics Canada, 2012). Compared to about 30% participation in sport for the Canadian able-bodied population, "the membership of persons with a disability in national sport organizations [is] less than 1%" (Canadian Heritage, 2006). Even with these significant numbers, the amount of research is limited, as are the opportunities for sharing at international conferences and research congresses (DePauw & Gavron, 2005). To date, research has revealed that a very small percentage of coaches for athletes with a disability actually possess a disability themselves, The vast majority of coaches have coached able-bodied athletes longer than athletes with disabilities and

"research on coaches of athletes with disabilities is sparse, but the need for more coaches trained in working with disabled athletes is clear" (DePauw & Gavron, 2005, p. 169). In addition, results have revealed that the majority of coaches seemed to support and focus on coaching the sport rather than the disability (DePauw & Gavron, 1991; DePauw & Gavron, 2005).

Historically, another significant and unique issue in disability sport has been the prevalence of self-coaching at all levels due, in large part, to a lack of qualified coaches (Bradbury, 1999; DePauw & Gavron, 2005; Liow & Hopkins, 1996). Though the number of athletes competing in high performance parasport (culminating in the Paralympic Games) is lower than the Olympic Games, numbers have increased exponentially since the first Games in Stoke Mandeville in 1952. For example, 4302 athletes from 164 National Paralympic Committees participated in the London 2012 Paralympic Games. Studies report a shortage of qualified coaches to meet this increasing demand at all levels, from participation to high performance (DePauw & Gavron, 2005).

Bradbury reported that nearly half of the Paralympians who competed at the 1996 Summer Paralympic Games were self-coached. While self-coaching can be an alternative when money or coaching is unavailable, a trained coach is deemed to be essential in order to achieve top performances and to help athletes avoid injury (Bradbury, 1999; DePauw & Gavron, 2005). The sheer number of athletes competing in parasport at all levels is much lower than in able-bodied sport which creates financial and opportunity barriers for both athletes and coaches (Moeller, 1993). Studies looking at coaching knowledge in disability sport have found that coaches

must familiarize themselves with their athletes and their disability and modify training regimens, schedules, and support systems as required. For example, it has been suggested that coaches must have a good relationship with sport medicine support as it plays an integral role in the daily life of many athletes with a disability (DePauw & Gavron, 2005). Coaches must also be able to adapt their approaches and the environment to suit the individual athlete, echoing conclusions from able-bodied sport: successful coaching strategies hinge on the notion that each athlete is a unique individual and must be approached and coached according to this uniqueness (Gallimore & Tharp, 2004). Findings in disability sport research have also indicated that it is important for coaches to be knowledgeable about both the sport they are coaching and the disabilities of the athletes (Cregan, Bloom, & Reid, 2007, DePauw & Gavron, 2005, McMaster et al., 2012).

Cregan et al. (2007) looked specifically at the career development of coaches for athletes with a disability and found that the coaches needed to be extremely creative, very collaborative in the coaching process with their athletes, and sensitive to important relationships with others in the athlete's life, such as parents and medical staff. In a study on coaches of athletes with a spinal cord injury, the importance of a strong working relationship with the integrated support team (IST) members was also identified as being an important element (Tawse et al., 2012). In addition, as far fewer resources and specialized disability sport training opportunities were available to these coaches, the researchers recommended further research and that other coach resource avenues be explored (Cregan, et al., 2007; McMaster et al., 2012; Taylor, Werthner, & Culver, in press). With these factors in mind, the impact of formal

learning opportunities in disability sport has been questioned, specifically when comparing the amount of time coaches spend in coach education versus their day-to-day learning experiences (McMaster et al., 2012). Additionally, at this point in time, formal coach education courses in Canada are not universally required for disability sport coaches nor are they necessarily available (see Appendix A).

Previous studies on coach learning suggest that, to date, no one particular learning situation, method, or experience has been shown to be more important than another (Mallett et al, 2009; Nelson et al., 2006; Werthner & Trudel, 2006, 2009). However, depending on the circumstance or need, one situation or method might prove to be more effective at any given time. What does seem to be clear is that there are some specific and unique challenges, characteristics, and considerations that exist in the parasport context. In the past decade, sport science research has been conducted in a variety of unique parasport domains such as biomechanics for persons with disabilities (Fulton, Pyne, & Burkett, 2009; Keogh, 2011), unique metabolic and thermal regulation systems (Buchholz, Mcgillivray, & Pencharz, 2003), and exercise physiology particular to parasport (Valent et al., 2008). While these studies were led and designed specifically to meet the needs of coaches and athletes (Burkett & Mellifont, 2008), the vast majority of sport science research does not make concrete links to specific implications for coaches.

Other sociological and psychological studies in parasport have explored a variety of issues that have implications for coaches: issues of empowerment or integration for athletes with disabilities (Ashton-Shaeffer, Gibson, Holt, & Williming, 2001; Banack, Sabiston, & Bloom, 2011; Pensgaard & Sorensen, 2002; Sorensen &

Kahrs, 2006; Turnnidge, Vierimaa, & Coté, 2012), particular ethical or performance considerations for compensatory equipment (Burkett, 2010; DePauw & Gavron, 2005), background of injury or trauma and complexities in motivation (Hanrahan, 2007), and issues of scarcity of medical or sports therapy specialists in high performance parasport (DePauw & Gavron, 2005). More research is needed to support parasport athletes and coaches, given the wide variety of unique contextual implications in parasport.

Finally, perhaps one of the most challenging contextual factors that is unique to parasport is the area of athlete classification. Classification is the system used by the International Paralympic Committee (IPC) and its IPC member sports to ensure the most fair and equal playing field possible, by grouping together athletes with similar levels of ability. Originally, athletes competed in five broad classes that were based on a medical model, but this has evolved to a system that is not based uniquely on disability groups, but on functional ability (Tweedy & Vanlandewijk, 2011). Classification systems are dynamic and are an important part of parasport coaches' reality, particularly in high performance parasport. Classification can be a highly contentious issue (Howe & Jones, 2006), and coaches are on the front lines of helping athletes adjust to frequent classification changes.

Dissertation Purpose

While an outline of some of the research that has been conducted in the area of parasport and coaching athletes with a disability has been provided, authors such as Cregan and colleagues (2007), DePauw and Gavron (2005), McMaster et al., (2012), and Tawse et al., (2012) have all indicated the scarcity of dedicated research in the

area of coaching athletes with a disability. Until the 1990s, the majority of all sport and coaching science research was dedicated to able-bodied athletes and coaches within that context. Thus, there is a need for more current study on how coaches of athletes with a disability learn and develop within the unique context of parasport.

Therefore, the purpose of this dissertation was to explore the learning experiences of four full-time Canadian coaches who are dedicated to parasport and coaching athletes with physical disabilities. More specifically, the purpose was to (a) examine the various ways that coaches of athletes with a disability have learned throughout their lives and to draw deeper links to the meaningful experiences that influenced and shaped this learning and (b) examine the social learning and coaching networks in which the coaches work and live within the parasport context.

Using the theoretical frameworks of Jarvis' (2006) human learning theory and his lifelong learning perspective, as well as Moon's (1999, 2004) theories on reflective and experiential learning, this study explored the ways that coaches of athletes with a disability used a wide variety of life experiences and learning situations to learn over a lifetime.

CHAPTER 4: RESEARCH APPROACH

In this section, we will introduce: (a) the research paradigm and epistemology; (b) case study methodology, including participant selection, data collection and analysis; and (c) the experience of the researcher.

Paradigm and Epistemology in Qualitative Research

Underlying a qualitative research approach is the research paradigm, or the "basic set of beliefs that guide action" (Guba, 1990, p. 17). As qualitative research focuses on finding answers to the socially constructed reality in which we live, it is a flexible backdrop and useful tool for revealing these constructions. The current study was conducted using a constructivist paradigm (Guba & Lincoln, 1994; Jarvis, 2006). A constructivist paradigm signifies that the *meanings* that are uncovered through the course of this research are personal and individual. Each person has a unique life-world, reality is subjective and dependent upon the collaboration of the participant, and the researcher is doing the interpreting in the subjectivist epistemology. Qualitative researchers emphasize the socially constructed nature of reality as well as the close relationship between the researcher and what or who they are studying (Denzin & Lincoln, 2005).

The information gathered in this study provided a rich description of how coaches of athletes with a disability learn to coach. This approach to research provides latitude for the investigator and participant to uncover the knowledge and experiences of the participants in the study (Guba & Lincoln, 1994). Qualitative inquiry in a subjectivist epistemology reflects the underlying assumption that individuals do not experience and interpret life in the same way and so is a good fit for the goals of the proposed study, which were to explore and better understand how

four parasport coaches learn to coach athletes with a disability. This interpretivism allows for "the experience and meaning of disability in our culture in richer terms than normally achieved" (Ferguson et al., 1992, p. 7).

A constructivist paradigm allows us to grow our understanding of how coaches of athletes with a disability learn and provides a vivid picture of what they learn through everyday life and how they have adapted and evolved in their learning over their lifetime (Light, 2008). Traditionally, coach education has been grounded by behavioural and cognitive educational perspectives and these approaches tend to have a neutral view of knowledge, exist in a vacuum, and not take societal or broader life-world factors into account. In contrast, Stoszkowski and Collins (2012) offer up Jarvis' theory of human learning as being a preferable and more holistic lens, suggesting that the "social constructivist approach to learning contends that knowledge is a social construct and that we learn from and alongside other people in all our social relationships" (p. 4).

Case Study Methodology

In a qualitative case study, the researcher seeks greater understanding of the case (Merriam, 2006; Stake, 1995, 2005, 2006), and themes emerge and come to light throughout the course of the research. In the current study, questions and probes helped explore various learning situations and experiences throughout the coaches' lives and how these experiences, interactions, and influences contributed to the coaches they were becoming, at the time of the study. According to Jarvis, learning occurs throughout the course of a person's lifetime and fittingly, this study looked at each individual case through the lens of a lifelong time-space continuum.

The most important and critical factor in the case study design is the selection of the case (Stake, 1995). Purposive sampling (Creswell, 2007) was used in selecting participants, incorporating opportunities for rich data collection through interviews, observation, and interaction. In order to select the parasport coaches, the Canadian Paralympic Committee and national sport organizations were asked to provide a list of exemplary and experienced coaches. From a master list of nominees, the following criteria was utilized: (a) the coaches had been coaching for more than 10 years in able-bodied sport and parasport, (b) the coaches were still actively coaching, and (c) the coaches were not colleagues or acquaintances of the lead researcher. Care was taken for gender representation, (three male and one female coach were chosen), as well as disability sampling (all four coaches coached a wide spectrum of disability groups).

Qualitative case studies may incorporate a set of 10 to 20 questions early on and the initial interview guide in the current study took shape following the acceptance of the research proposal. These questions helped to structure the interviews and other forms of data gathering, such as emails and phone calls. These questions were pliable and they evolved as the study progressed, as per guidelines for case study methodology (Maxwell, 2005; Rubin & Rubin, 2005). The evolution of the questions occurred as issues and themes emerged from the interviews with the coaches and when it seemed necessary to pursue greater understanding in a particular area (Fontana & Frey, 2005; Stake, 1995).

A multiple case study design was used in the current study, in order to explore the learning situations of the four coaches of athletes with a disability. It has been

suggested in some studies that learning in coaching may be unique, individual, and idiosyncratic (Werthner & Trudel, 2006; Trudel, Gilbert, & Werthner, 2010). Therefore, an individualized interview process within a multiple case study approach, where the researcher attempts to uncover the many learning opportunities, methods, and environments in rich detail, allows for contrasts and similarities to be highlighted within and between cases (Merriam, 2006; Stake, 2005). In a qualitative case study, the researcher strives for the richest description, the most accurate language and choice of words (through member-checking with the participants), and the most vivid accounts to create the potential for deep understanding by the reader of the study. The interpretation of the coaches' own words was the critical component of understanding of how coaches learn to coach athletes with a disability, as well as the observations and reflections of the researcher (Creswell, 2007). In the constructivist paradigm, knowledge is co-created by the researcher and the participants and reality is a fluid and personal construct. The lead researcher also improved the interpretation and understanding of the coaches by sharing the data interpretation with a supervisor and other research colleagues to further triangulate the "understanding" process.

Thick and rich description, combined with an evolution of thoughts and on-going discussions with advisors and colleagues throughout the research process, all contributed to the most "accurate" description (Stake, 2005). The researcher also kept notes and musings in an ongoing research journal throughout the data collection (Glaze, 2002).

One way to organize and conceptualize a multiple or collective case study approach is to work towards providing an in-depth portrait of cases (either individual

or group/collective). This can take the form of a case study report or a research article. Precise data analysis procedures, development of themes and patterns, groupings and cross-case theme analysis unfolded as the data were collected and initial findings were brought forth and documented (Stake, 1995, 2005, 2006).

Participants.

Four exemplary parasport coaches were selected as individual cases to form this multiple case study. At the time of the study, each coach was employed as a full-time coach for athletes with a disability and each coach had coached athletes from the grassroots to international level in parasport, encompassing a variety of sports as well as athlete functional classification and disability groups. All four of these coaches were Canadian coaches and were currently or had previously coaching at the National or Paralympic level. One participant, Mark, runs his own parasport program year-round and had coached a parasport national team after coaching for almost two decades in a mix of able-bodied and Paralympic sport. A second coach, Rachel, had a background in national level speed skating and had transitioned to parasport coaching in a team sport. She coached the women's and men's national parasport teams with over two decades of total coaching experience. The third coach, Jacques, had been a national team athlete who had transitioned to being a full-time able-bodied coach for twenty years and then made the transition to running his own club for athletes with a disability. Finally, the fourth coach, Andrew, was working full time as a national level development coach in parasport, after 7 years of competing and coaching as an athlete at the university level in Canada. See Appendix B for detailed biographical information on each coach.

Other participants who took part in the current study were members of each of the four coaches' network of learning, as determined by the coach. These network members or key collaborators (from three to four per coach) were athletes, peer coaches, various medical staff, disability sport advocates, and national sport managers.

Data Collection and Analysis.

There is no finite point at which data collection ends and data analysis begins in a qualitative case study. Qualitative case study collection and analysis is ongoing from the start of the interview process to the final writing of the report or research article. Throughout the data collection and analysis in this case study, the researcher was involved in a quest for patterns and greater understanding as to how these coaches learned to coach athletes with a disability. As the detailed description of each case emerged, the researcher conducted an initial analysis of the patterns, themes, and issues that were arising, and noted and coded observations to share with her advisor on a monthly basis.

In order to conduct multiple case studies to examine coaches' learning from a lifelong learning perspective, multiple sources of data collection were used, and as suggested by Polkinghorne (2005), multiple interviews with each coach increased the opportunity for rich data and deeper reflection. This qualitative multiple case study included a project proposal and overview, an interview guide (that served as a compass but evolved and was adapted for each case and phase in the study), field notes of observations to enhance understanding of parasport context, and three

research articles that illustrated key findings, emergent themes, and cross-case comparisons where applicable (Polkinghorne, 2005; Stake, 1995).

Procedures.

All four coaches were initially contacted by email or phone, informed of the purpose of the proposed study, and asked if they would like to participate. Each participating coach signed a consent form. A pilot interview was conducted with a coach who had coached in parasport for almost ten years to aid in the completion and final draft of the interview guide to be used with the four participant coaches. This pilot interview also served as a useful training ground for refining the researcher's interview skills and in testing the relevance and utility of the questions and probes.

Phase I. Following refinement of the interview guide, each of the four participating coaches were interviewed by the researcher in person at mutually convenient locations across Canada. The interview questions reflected the conceptual frameworks of Jarvis (2006, 2009) and Moon (1999, 2004) and explored coach learning through the lens of a lifelong and reflective process. Each interview in this phase took an average of two hours each. Themes and issues emerged as each coach's interview was transcribed verbatim and read through multiple times, looking for initial patterns and topics. Transcribed interviews from Phase I were coded using NVivo QSR 2010 (Version 9.0) data management system.

Phase I interviews were semi-structured and the questions probed for the many facets of the coaches' life experiences. An interview guide may be found following the first article in the Results section (Appendix A). As each new topic or subject emerged from the broader research questions, probes were used to further uncover

more detail and the "how" of learning for each participant. Coach participants were also encouraged to bring other material (video, pictures, website information, personal items) that might illustrate their coaching development and add depth or understanding to their varied learning environments (Stake, 2005). This included pieces of training equipment, team photos, and coaching awards that had an impact in their life.

Where possible, the researcher attended a practice and/or competition at both the National and grassroots level (as the training and competition schedules allowed), as well as via live streaming video and recorded video, to add an understanding of the Paralympic sport contexts that the coaches worked in each day. While each individual case was analyzed using Stake and Merriam's suggested single case analysis, each case was also compared with others to identify possible common or differing emergent patterns or themes (see Appendix B following the first article in the Results section).

Using Braun and Clarke's (2006) thematic analysis procedures, a six-stage analysis protocol was used (see Appendix C) working towards synthesizing the various emerging themes and issues in each coach case. The resulting thematic analysis formed the basis for the three articles submitted for publication, using Jarvis' (2006, 2007, 2009) theory of lifelong learning, theories of social learning networks (Allee, 2003; Brown & Duguid, 1991, 2001; Lave & Wenger, 1991; Occhino et al., 2012; Wenger, 2011), and Moon's (1999, 2004) theory of reflective practice and generic view of learning. See Appendix D and E for diagrams demonstrating how

themes were derived from coded data for articles 1 and 2 (lifelong learning and social learning systems) and article 3 (reflection).

Phase II. In Phase II of the study, the social learning networks of each of the four coaches were explored in greater depth and the questions were designed to probe for deeper understanding of the complexity of the coaches' parasport coaching contexts. This phase began by each coach being interviewed a second time in person, using an interview guide that had been personalized for each coach, following the interview and analysis of Phase I. As Polkinghorne suggests (2005), the months between a series of interviews can provide time for deeper reflection and the opportunity to prepare (on the researcher and participant's part) for the next phase of interviews.

Following the second interview with each coach, the key collaborators, identified by the four coaches in Phase I and/or II, were subsequently interviewed in person. The selection of these collaborators was based on the initial analysis of the coach interviews in Phase I and II. The aim of these key collaborators or network member interviews was to better understand and describe, from the perspective of the collaborator, the life-world of each coach.

Phase III. In Phase III, a final interview was conducted with each of the four coaches, probing for further reflections and using the information gathered from both the coaches' second interviews and the interview with their key collaborators (from three to four per coach). Polkinghorne (2005) suggests that a third interview provides an opportunity to bring forth any newly recalled information on the part of the participant. Transcripts from each of the interviews were analyzed as the study

progressed and themes or patterns were noted as they emerged or changed shape along the two-year time span of this study. All transcripts were member-checked by the coaches and network members and themes and issues were discussed with the primary advisor and a group of trusted colleagues who also specialize in coaching research. This process served as a triangulation method to add to the quality of qualitative analysis.

Experience of the Researcher and Transparency. "Inquiry is influenced by the values of the inquirer…the assumptions underlying both the substantive theory and the methodological paradigm, and by the values that characterize the context in which the inquiry is carried out" (Lincoln & Guba, 1985, p. 161). As the researcher in the present study, I am someone who has spent a number of years working in the world of Paralympic sport and approached the present study with an understanding of some of the key language, social and political issues, and culture in disability sport.

In an effort to minimize my own researcher bias (Maxwell, 2005), I took the following measures: I took part in a bracketing interview with my supervisor in order to take a close look at my own assumptions and biases towards my topic of study, (see Appendix F, Ahern, 1999), I kept notes on my research activities, adding detail to my observations, interactions via email or phone, and the interviews, and I regularly reflected on these ideas and shared them with my supervisor and members of my research group. These experiences helped to guide me through the creation of my interview guides and through the final decisions and writing of the dissertation.

I created an open and trusting environment for the study participants which helped reduce reactivity (Hammersley & Atkinson, 1995), and I took care with my

choice of words, body language, and probing and questioning style (Rubin & Rubin, 2005). I brought to this proposed study my own motives, agenda, and personal life history (Fontana & Frey, 2005). It was important that I explored and become aware of my own assumptions, as well as be aware of my own life experiences. Once I uncovered and acknowledged these assumptions, I used this knowledge to be more transparent in interpreting my case studies (Stake, 2005).

The following is a list of my assumptions as I entered into the doctoral dissertation research: Coaches for athletes with a disability have the ability to learn; coaches learn from their experiences throughout their lifetime; coaches learn from experiences happening in the present, and also from reflecting on experiences in their past; each coach is unique and no two coaches have an identical life-world or coaching experience. As well, it is my experience that most coaches in high-level disability sport are from the able-bodied sport world and begin with able-bodied sport reference points. This may have an impact on the way they have learned and what they have learned about coaching. I believe there are many experiences, situations, and factors in disability sport that makes this learning environment unique for coaches. Certainly, the ways that coaches learn in this unique environment have not been adequately documented or accounted for in empirical research.

My assumptions come from five years of working as a mental performance consultant with athletes in the Paralympic sport environment and from more than 25 years as an athlete and sport science student turned sport psychology practitioner who works alongside coaches. These assumptions also take into account my exposure to literature on human learning over the past several years as a graduate student. My

history and interests were important facets of this research in understanding the culture and language that best tells the story of the study participants (Stake, 1995, 2005). Developing rapport and trust came easily to me as I have been a witness and in some cases, a direct part of the disability sport culture, although I have not been a coach of athletes with a disability myself. Development of trust was very important so that the coach participants felt comfortable opening up to me and sharing their personal experiences openly with me (Fontana & Frey, 2005).

While there is much that we know about coaches and the important role they play in sport, there is still so much we do not know about how they *learn* to coach: *how* coaches come to *know* what they *know*. While research into coaching science is gaining momentum (Gilbert & Trudel, 2004), research into *how* coaches learn in the Canadian context is still rare (Werthner & Trudel, 2006). Rarer still are studies looking specifically at learning in coaches for athletes in disability sport (McMaster et al., 2012, Taylor, Werthner, & Culver, in press). This study addresses this gap in the literature on how coaches in parasport learn to coach, with the findings producing more information pertaining to this important disability sport resource: our Canadian parasport coaches.

CHAPTER 5: RESULTS

A Case Study of a Parasport Coach and a Life of Learning

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Abstract

The complex process of sport coaching is a dynamic and evolving practice that develops over a long period of time. As such, a useful constructivist perspective on lifelong learning is Jarvis' (2006, 2009) theory of human learning. According to Jarvis, how people learn is at the core of understanding how we can best support educational development. The purpose of the present study is to explore the lifelong learning of one parasport coach who stood out in his field, and how his coaching practice evolved and developed throughout his life. A thematic analysis (Braun & Clarke, 2006) was used to extract themes and examples from three two-hour interviews as well as interviews with key collaborators in his coaching network. The findings reveal a coach whose coaching practice is founded on pragmatic problem solving in the face of a lack in resources; an investment in formal and nonformal adapted activity education at the start of his parasport career; and observation, communication, and relationship-building with his athletes and the parasport community. Suggestions are provided for coach developers on how they might invest resources and create learning opportunities for coaches of athletes with a disability.

Keywords:
coach biography, coach learning, disability sport, lifelong learning, Paralympic

Early forays into research for athletes with a disability or parasport began over twenty years ago (DePauw, 1986; DePauw & Gavron, 1991) and indicated a lack of empirical research in the area of coaching in parasport. While there has been an increase in global research exploring coaches' learning situations and how coaches learn throughout their lives (Callary, Trudel, & Werthner, 2012, 2013; Werthner & Trudel, 2006, 2009), the research on how coaches learn within the Paralympic and parasport context remains limited and the questions surrounding how to best support and grow the parasport coaching world are many (Cregan, Bloom, & Reid, 2007; DePauw & Gavron, 2005; McMaster, Culver, & Werthner, 2012; Tawse, Bloom, Sabiston & Reid, 2012). For the purpose of the present study, we use the term parasport to describe sport for athletes with a disability, and the term *Paralympic sport* to describe high performance sport that is governed by the International Paralympic Committee (IPC). We also use the term *adapted sport* as it pertains to formal physical education and it is the official term used in the college and university setting. The purpose of the present study was to explore the lifelong learning of one parasport coach and how his coaching practice evolved and developed throughout his life.

Human Learning

Given the intricate complexities of the dynamic process of learning, Jarvis' (2006, 2009) holistic constructivist approach to lifelong learning has been used as a conceptual framework to better understand the human learning process. Peter Jarvis is recognized as a lead author on adult learning in the social world. In November 2008 the publisher Routledge selected him as their education author of the month. At the

time he had written and edited over 30 books and 200 articles and chapters (Routledge, n.d.). Twenty-nine years ago he co-founded the *International Journal of Lifelong Education* and remains one of its editors. His work has recently been used to understand coach learning in able-bodied sport, disability sport, and school sport (Cushion & Nelson, 2013; Leduc, Culver, & Werthner, 2012; McMaster, Culver, & Werthner, 2012; Trudel, Culver, & Werthner, 2013; Winchester, Culver, & Camiré, 2011).

Jarvis' (2006, 2009) theory of human learning includes a number of key concepts such as biography, primary and secondary experiences, disjuncture, and meaningful episodic experiences. For Jarvis, the concept of biography plays a central role in any discussion of human learning as it is the sum of all of our past experiences, and determines what, and if, we choose to learn in any particular circumstance. Primary experiences are experiences lived by the learner first-hand, usually taking place in daily life through doing or experiencing something directly. Secondary experiences are mediated by another person, such as a parent, teacher, coach, or various media. There are three types of learning situations in which these primary and secondary experiences can take place: formal, nonformal, and informal. In both formal and nonformal learning situations it is more common to find secondary experiences although primary experiences may occur. However, as informal learning situations are ones in which the learner is self-directed, forming their own meaning through experience, these experiences are exclusively primary experiences. The concept of disjuncture occurs when a person's biography is at odds with exposure to a new situation. A sense of disharmony or tension is created and it is

this tension that creates an opportunity for learning to take place. Finally, Jarvis' concept of meaningful experiences emphasizes that it is the learner who will determine if an experience is meaningful or not; this decision usually arrived at through reflection.

Jarvis (2006, 2009) and other learning theorists situated in physical education (Gréhaigne, Caty, & Godbout, 2010; Light, 2008) point to the importance of looking at lifelong learning through a broader scope than just cognition or behaviourism. Jarvis suggests we must start with the understanding of the learner, tracing back to life experiences that have led to the present, and when combined with those in the current life-world, have a profound influence on learning.

Parasport Coaching Literature

Research in parasport has revealed it to be a relatively deprived context, with not many formal and nonformal parasport-specific learning opportunities, fewer jobs and economic resources, and fewer coaching peers and athletes as in the able-bodied sport context (Burkett, 2013; Cregan et al, 2007; DePauw & Gavron, 2005; McMaster et al., 2012; Sherrill & Williams, 1996). While sport science has begun to show an interest in parasport research (Buchholz, McGillivray, & Pencharz, 2003; Fulton, Pyne, & Burkett, 2009; Keogh, 2011), much of the current literature and resource material tends to be designed by sport science specialists or academics to meet their own needs, and therefore not readily digestible by the parasport coach who is seeking to fill coaching knowledge gaps (Burkett, 2013).

One recent study explored the career development of six Canadian para swimming coaches who coached athletes at the national level (Cregan, et al., 2007).

Their findings indicated there was a lack of para swimming coaching seminars or applied clinics which meant the coaches often turned to informal learning opportunities such as discussions with their athletes, learning directly from daily training sessions and from interacting with other coaches, mentors, or other collaborators. Swimming has since developed some para swimming-specific training, but only half of the 27 partner sports in the Canadian National Coaching Certification Program (NCCP) who possess a Paralympic program have completed the development of sport-specific training for coaches of athletes with a disability.

Tawse, Bloom, Sabiston, and Reid (2012) examined the development of four wheelchair rugby coaches of athletes with spinal cord injuries. The primary focus of this study was how coaches felt they influenced athlete development, but the study also cited a lack of parasport coaching resources, and specifically, coaching resources for wheelchair rugby. The coaches noted the importance of their relationship with their athletes, as well as the importance of focussing on what the individual can do versus on the disability. The findings also noted the importance of an integrated support team (e.g., medical professionals, psychologists, nutritionists) to help meet the wide range of needs on their high performance wheelchair rugby team.

McMaster, Culver and Werthner (2012) explored the learning processes of five parasport coaches from the sports of adapted water skiing, para swimming, wheelchair basketball, wheelchair rugby, and wheelchair tennis. Four of the coaches were volunteer or part-time coaches and one held a full-time, paid position. The full-time coach had a university degree in physical education and was Level IV (NCCP) certified in the Canadian coach education system, while the other four coaches had

degrees in other areas such as engineering, leisure, and business. In terms of learning opportunities, the findings indicated that the coaches spoke of a lack of formal coach education opportunities, nonformal coaching clinics, and financial support. All five coaches relied heavily on nonformal and informal learning situations in order to address gaps in their coaching practice. From these few studies it appears that learning to coach in parasport is an area that needs further exploration. In particular it is useful to consider how coaches who have made a viable career in parasport have learned, as it may help develop a clearer picture of differing ways to learn and open up a dialogue for coach education developers to think about learning from a variety of perspectives.

Methods

The present study used a qualitative case study methodology seeking greater understanding of the case: the learning biography of Coach Mark, a parasport coach (Merriam, 2002; Stake, 2005). This approach has been employed in other studies in coaching to develop a deeper understanding of one coach's unique learning experience (Jowett, 2003; Lorimer & Holland-Smith, 2012), and to create an in-depth look at the scope and complexity of learning over a period of time (Gallimore, Gilbert, & Nater, 2013). Findings in a single-case study are not generally meant to be extrapolated to the general population but are used to paint a portrait of a particular case to gain a deeper understanding of a particular phenomenon (Stake, 2005).

In this case, the coach was recognized by the Canadian Paralympic Committee and the national parasport community as an exemplary coach, coaching parasport athletes from the development level through to the international level. He has created

a unique training centre with a year-round program and training environment for athletes in a wide variety of disability groups. In the year prior to partaking in this study, the coach was the recipient of the "Coach of the Year" award by the Coaching Association of Canada. This coach also represented parasport on a national working committee for the professional sport coaches' association and was an international technical classifier at the Paralympic level. This coach has also managed to create and sustain a full time career in coaching and importantly, has produced athletes who have competed at all levels of parasport. He was open to collaborating and sharing his life of learning over the course of the study. This openness and willingness to contribute are important prerequisites in qualitative research (Creswell, 2007).

Ethics approval was received from the University of Ottawa Research Ethics Board and a pilot interview was conducted with a parasport coach to aid in the completion and final draft of the interview guide. This guide was then reviewed by an experienced coaching research team and, following the refinement of the interview guide, three interviews were conducted with the coach. Polkinghorne (2005) has suggested that it is important to engage in several interviews with participants and that a sequence of three interviews is ideal to collect rich, in-depth data. The two key research questions that guided the present study and the series of three interviews were: "What life experiences have influenced your coaching" and "How did you learn to be a parasport coach?"

In the first interview, the coach was asked about his life and, in particular, about the ways he had learned to coach. The interview questions were guided by Jarvis (2006, 2009) and explored many facets of his life experiences, revealing thoughts,

feelings, and behaviours that helped provide a vivid picture of his past and current learning situations. This interview helped establish rapport, gathered biographical information, and established a first glimpse of the coach's many learning experiences. The interview was transcribed verbatim, analyzed using Braun and Clarke's (2006) thematic analysis (see Appendix B) and reviewed by the researcher and the supervisor who is a coaching research expert. A non-participant observation took place during a weekend training camp following Interview #1 to enhance the researcher's (Creswell, 2007). The goal of this observation was to familiarize the researcher with the parasport context in which this coach was working each day and to contribute to a deeper understanding of the unique vernacular, various equipment, and training practices in order to best interpret the interviews (Stake, 2005).

Based on the analysis of the initial interview, the second interview was conducted to follow up and probe the coach’s learning situations more deeply. The second interview was conducted four months after the first. Time between interviews according to Polkinghorne (2005) provides an opportunity for the coach to reflect more deeply on what was discussed in the first interview. In the first and second interviews, the coach identified four individuals who he felt were key collaborators in his coaching practice and learning. These four individuals were subsequently interviewed about their working relationship with the coach. Finally, a third interview was conducted with the coach, probing for further reflection about his learning and on how he saw his relationship, from a learning perspective, with each of his self-declared collaborators. This third interview also provided an opportunity for the coach to add any newly recalled information (Polkinghorne, 2005). Each of the three

coach interviews ranged from 120 to 180 minutes, with transcripts ranging from 30 to 40 pages double-spaced. The four collaborator interviews were approximately 60 minutes each with transcripts of 15 pages each double-spaced. Please see Appendix A for the Interview Guides.

Barbour (2001) reminds us that qualitative research is messy and cautions against the tendency of some reviewers in certain domains to want to reduce qualitative research to a checklist of technical procedures. Such an inclination runs the risk of "compromising the unique contribution that systematic qualitative research can make" (Barbour, 2001, p.1115). Our thematic analysis was largely deductive, using the concepts of Jarvis' work on lifelong learning (2006, 2009) such as primary and secondary socialization. However, given the lack of research about coaching athletes with a disability, inductive (in vivo) themes also surfaced. The analysis process involved a six-step ongoing approach that began with the transcription process in the first interview phase and ended in the writing of the article. First, there is a process of familiarization with the data through the transcription process, noting themes, ideas and reflections. Secondly, the transcribed interviews were coded using NVivo QSR 2010 (Version 9.0) data management system to help organize, code and interpret the data. Thirdly, the data were analysed for themes (e.g., coaching experience, learning situations, parasport context). In the fourth stage, these themes were then mapped and organized to show relationships between themes. In step five, the data and themes go through a final review for coherence and any gaps. The resulting themes focused on the coach's biography, learning situations, and contextual factors in parasport. In step six, the results are presented in the form of a

report or research article. Please see Appendix B for learning themes and examples. Trustworthiness was enhanced through member checking of all transcripts by the participant (Guba & Lincoln, 1994) and by the lead researcher observing the coach at a weekend training camp. Only grammatical changes were requested by the coach.

Results

The results section of the present study consists of two sections: the coach's biography and the coach's learning situations within parasport. Coach Mark and the other identified individuals referred to in the interviews have been assigned pseudonyms and all references specific to the coach's family and sport have been eliminated in order to maintain confidentiality.

Coach Biography

According to Jarvis, (2006, 2009) an individual's biography will determine if an experience is meaningful or not. With this in mind the following section provides an in-depth exploration of one coach. For over 15 years, Mark has been a full-time coach in parasport, coaching athletes from grassroots to the international level. Throughout the series of three interviews, coach Mark offered candid and detailed responses, creating a vivid portrait of how his learning evolved throughout his lifetime and, in particular, his life as a parasport coach. For the purpose of this section, the theme of meaningful experiences has been divided into three sub-themes: family and environment, school and peers, and transition through adversity into parasport.

Meaningful experiences: family and environment. Mark cited the influence of both his father and mother and indicated that much of his approach with others

came from his mother and a sense of practical, solution-oriented pragmatism he learned from his father. As the middle child of five children, his childhood was spent in both rural Canada and Europe. He described watching his father actively solve problems and recalled how he was encouraged to do the same. Mark said, "My dad was a handy man. He built his own bikes and could do anything. I grew up watching him and doing all of it, too. As a result, I'm more inclined to solve problems myself rather than call someone."

Mark remembered his mother creating a welcoming and inclusive home that included caring for individuals with varying degrees of ability, including a family member who was an amputee, a neighbour who used a wheelchair, and a friend of his father who was visually impaired. Mark noted that daily interactions with such individuals had a significant influence.

> We always had all kinds of people in my house, there was no *normal* or ability or disability. It was an amazing environment to grow up in. Anyone and everyone was welcome in my house. I guess I learned through my parents that in the end we are all the same more than we are different.

Early experiences: school and peers. During his childhood, Mark's family had spent several years in Europe, and once Mark returned to Canada, school, sport, friends and teammates became a significant source of primary and secondary learning, as well as a place to learn leadership and early coaching skills:

> I came back to Canada and I was a year older than my friends – the more responsible one, slightly older and independent. We all used to ride our bikes around, but when my friends got their cars, I continued to ride my bike. In high

> school I was the captain of the volleyball team. I remember teachers writing on my report card that I was very independent and not easily swayed by others.

Mark's passion for sport inspired him to compete in cycling and volleyball. A thirst for knowledge on human performance and the sport science led him to complete a university degree in kinesiology. Interested in sport science and diverse hands-on activities, Mark talked about how he enjoyed a balance of applied as well as academic pursuits, always trying to understand the scientific theories behind human performance.

Meaningful experiences: transition through adversity into coaching parasport. When asked about his transition into coaching, Mark shared how his own unexpected illness led him to consider coaching more seriously.

> I developed a heart virus and nearly died (pericarditis). I was on a rehabilitation program and couldn't walk or drive, and I saw how fragile life is. But you can make the best of anything ...through all of the tests we discovered I had a hole in my heart. I knew then I'd never be a pro cyclist. So I really started transitioning to para coaching in the mid-90s after that. Another door opened leading down another path. I learned to create opportunities from something challenging.

It was also Mark's mother's illness that influenced his transition to para coaching. Mark made a detour from his original plan to finish his university studies in kinesiology to return to his hometown so he could be near his mother after a cancer diagnosis. It was there that he found a job working with a young visually impaired person and went on to expand his program to several athletes with cerebral palsy,

amputees, and spinal cord injuries. Early success in coaching developing athletes to a world championship level led Mark to develop confidence and a spot as parasport head coach culminating with coaching at the Paralympic Games.

His mother's ten-year battle with the disease influenced how Mark balanced personal and professional priorities in his coaching. Though his mother's health was frail, he followed her wishes and went on to coach at the Paralympic Games:

> Through that difficult Games I learned that you are a lot stronger than you think you are. And how vulnerable. I sat in the coaches' lounge and the other coaches were so supportive and amazing, and they knew what I was going through...I know it made my mother proud. There are all these milestones in your life that set you on your path.

It can be seen from Mark's comments that influences in his early life, whether parental, friends, or significant experiences, played an important role in his learning.

Coach learning and social context

This section explores Mark's learning situations (formal, non-formal and informal) and how the social context of parasport influenced these learning opportunities.

Formal: kinesiology, adaptive sport, National Coaching Certification Program. Mark completed an undergraduate degree in kinesiology and his keen desire to understand his athletes' disabilities from a theoretical perspective led to further specialization in parasport (called "adaptive sport" in the university curriculum).

> That's when I took the university classes in adaptive sport. It gave me the confidence to move forward. However, without that formal education I would have been missing out on a lot of important information. It wasn't just that I learned about Cerebral Palsy (CP), I also learned about Spina Bifida, Down's Syndrome, everything there was information on.

When asked about what he thought he had learned through his studies in kinesiology and adapted physical activity, Mark reflected on why he felt it was important in the early stages of his coaching career:

> I think early on in my career I didn't want to hurt any of my athletes. I was so uncertain of how far I could push. I was afraid working with CP kids at first, as I didn't want to damage muscle structure and soft tissue. I was concerned because my sport is one with inherent risk. Early university education and training helped ground me and gave me the confidence to say "I can do this," and the base to go out and work with CP, do some trial and error and push a bit.

Mark also made reference to the evolution of his reliance on formal education as his practical experience and reflection increased:

> These days, obviously I am not referencing the formal learning pieces as much as I did seven or eight years ago. The problem-solving back then was a lot different. More problems that I had never seen before. And then I did a lot of mentoring of Alex, once the pieces were in place. Setting up training plans. Running events. Practices. Working with each athlete. There was still a lot of independent discovery on my part too, going out there and solving things in the field.

Mark also sought formal coaching education through Canada's National Coaching Certification Program (NCCP) in three sports. He described his NCCP courses as being a good basic foundation but sometimes lacking in technical pieces that were important to innovation in parasport.

Nonformal: Welder's assistant apprenticeship; Braille and orientation mobility certificates; coaching clinics and conferences. Mark sought many nonformal learning experiences, such as conferences, certificates from clinics, apprenticeships or weekend training camps. When encouraged to reflect on his early career, Mark arrived at a long list of other specialized non-sport specific certifications, clinics, and skills such as training in orientation mobility (for the visually impaired), and Grade 1 Braille instructor training. When asked about equipment adaptations for para athletes, Mark spoke to how he had learned to make the necessary detailed adjustments for his athletes:

> Well, I was a sheet metal worker, a welder's helper, in high school. I built steel structures right to brass finishing. It was a really diverse program. It was a sheet metal shop. One day it was industrial steel for a building, the next it was building kitchen stainless steel for garbage cans in homes.

The nonformal learning situations provided Mark with opportunities to put his theoretical knowledge into practice. In some cases, training was undertaken for one purpose (a part-time job) and it also provided important life and vocational skills that were called upon later (such as the welding program that proved to be a useful skill for equipment adaptations). These nonformal opportunities also expanded his exposure to like-minded persons who were interested in similar areas of parasport.

These were the beginnings of a network of persons that he could later call upon to fill some of his knowledge gaps throughout his coaching development.

Informal: mentoring, key coaching collaborators, athletes, family, and a process of regular reflection. Mark discussed a wide variety of informal learning situations that he utilized to help him to coach. He spoke of a mentor coach from his early years as a coach, four key collaborators, his athletes, and his family. His ongoing process of reflecting within each of these informal learning situations helped him learn and develop as a coach.

Mark talked about seeking out a mentor coach (an Olympic coach at the training centre) early in his coaching. “I studied under him at the training centre and he took me in as an apprentice coach. Every day for that season I was at the track from 9 – 4, absorbing all I could from him." This mentor coach helped Mark understand how to organize training sessions, how to communicate effectively with athletes, and how to work with athletes training and competing in multiple events.

Mark also described the importance of working with four key individuals in the disability community who became key collaborators. The first individual of the four collaborators he referred to was the chairperson of a provincial disability organization. She helped him understand how to build relationships with the disability sport community, make contacts in amputee sport, run clinics and presentations, and find funding within the parasport community "She’s not a technical coaching resource, but she’s been really good at helping me with support, funding, and problem-solving."

A second key collaborator was a coach who was a para athlete himself who became an assistant coach in Mark's program. This individual provided Mark with information on the unique needs of para athletes, particularly those with a spinal cord injury. Mark said "We have a long history – I coached him in the past and he's back in the system now doing endurance wheelchair sports. He does a lot of really good things, and brings a lot of experience from his days in racing." Mark also cited periodic interactions with coaches from other sports, comparing problem-solving approaches between sports, managing logistics, maintaining motivation or solving funding or resource challenges.

A third key collaborator was an exercise physiologist who validated Mark's training programs and helped his athletes to taper for major events. This physiologist was also a researcher in parasport and highly motivated to gain more understanding from Mark and his athletes. Thus, the learning and collaboration was reciprocal.

Finally, Mark also collaborated with a professor of adapted physical activity who served as a sounding board and provided graduate students to help with Mark's parasport program. Mark also described this as a means for his own professional development as he was a guest speaker in the adapted physical activity classes.

Another example of informal learning was Mark's relationship with his athletes. He reported that listening to his athletes, and getting to know their personalities, was extremely important in knowing how to coach them effectively and how far he could push:

> Sometimes the people who have the odds the most against them, have the biggest drive to prove people wrong. I've had athletes who in the beginning I

> have coddled, and then they get soft and go backwards. I see that, and think, "that's not working." So you're tougher on them for a few months and then that doesn't work anymore. I've learned that what works today may not work tomorrow. Athletes' needs will change over time. You have to watch, listen to them, and to experiment with each athlete.

Mark also reported being stretched for time and resources, wishing he could do more of the things that he was most interested in, but having to take on other roles since there were no resources to pay someone, nor a volunteer to do them. This meant he sometimes turned to the Internet for information on classification, rule changes or disability-specific information, to advice from experts in the field, or to trial and error. At different points in the series of three interviews, Mark described his multiple roles: fundraiser, mechanic, manager, recruiter, nutritionist, trainer, prosthetics specialist, and coach for varying para athlete classifications (e.g., visually impaired, CP racing, athletes with brain injuries, amputee).

Mark also noted the influences of his nuclear family on his learning. His wife is an athlete and a personal trainer, and he described her as a sounding board and confidante. Mark also felt that being a parent provided him with more insight into relating to sport parents and to seeing adapted sport through the eyes of his children:

> My children have no fear when approaching my athletes. They have a much broader sense of what people look like, and what our bodies can do now, because of exposure to my athletes ... I've learned that many of our prejudices and boundaries are created by us, as adults. My son's innocence and curiosity inspires me.

Finally, Mark spoke of reflecting regularly on his past educational experiences, his daily coaching, and his encounters with others. He reported taking on new experiences and reflecting on them on a continual basis.

> I love discovery and seeing a problem, thinking about it, and finding an answer. Is it from my courses? Something I've seen? Do I know someone who might know? Where can I find out more? Or should I think and grind it out and find my own solution from inside or a combination of all those things? Even when resources are available, I still like to figure some stuff out on my own. That's going on now, all the time.

Discussion

The purpose of the present study was to explore the lifelong learning of one parasport coach and how his coaching practice evolved and developed throughout his life, using Jarvis' (2006, 2009) comprehensive theory on human learning as a conceptual framework. One of the key findings from the series of interviews with this coach was how he drew on his formal education, particularly in his early days as a coach. While there have been numerous discussions in the coaching literature on the value, or lack thereof, of formal education in a sport coach's life, a few studies have suggested that it can form an important basis for coach learning (Trudel et al., 2013; Werthner & Trudel, 2006, 2009) and this was very much the situation for the coach in the present study. This coach made a deliberate decision to be well educated in physiological and neurological foundations in his early years, including specifics about a wide range of disability groups. NCCP coaching clinics provided other learning situations in which Mark reported developing some foundational technical

and coaching skills, providing him with the initial confidence to move forward in his coaching practice, and this appears to be in line with other studies that pointed to coaching confidence arising from participation in formal coach education early on in their careers (Leduc, Culver, & Werthner, 2012; Werthner, Culver, & Trudel, 2012).

A second key finding was the coach's use of learning through his interactions with others, including a mentor relationship early on in his career, and the creation of a network of four key collaborators who helped him navigate and learn within the parasport context. This finding differs from several studies in the able-bodied context in which it was found that coaches were less open to sharing information, especially with other coaches, partly due to the competitive nature of sport (Culver & Trudel, 2006, 2008; Lemyre, Trudel, & Durand-Bush, 2007; Trudel & Gilbert, 2004). This coach took the initiative to seek out a mentor within his sport early on in his career who helped him learn how to develop training plans and work effectively with his athletes. His interactions with four key individuals also helped him in a wide variety of ways such as addressing unique para athlete physiological demands (physiologist), navigating the disability sport system (a parasport leader), recruiting athletes and tailoring programs (assistant coach / former Paralympic athlete), and maintaining links with the adapted sport community (adapted physical activity professor). Looking further at interactions that aid coach learning warrants further study, as several studies have begun to explore the merits of using learning networks in sport coaching (Culver & Trudel, 2006, 2008; Occhino, Mallett, & Rynne, 2012).

A third key finding is the initiative that Mark took that helped him learn and create a full time career in parasport coaching. As his proficiency as a para coach

evolved, Mark began to test and challenge the foundations he had studied in the classroom and sought out many nonformal learning situations in the form of sport-specific technical clinics and conferences. Given the nature of parasport, with coaching education and sport science resources in disability sport being comparatively sparse (Cregan et al., 2007; DePauw & Gavron, 2005; McMaster et al., 2012), he used his creativity and resourcefulness to address deficiencies through additional non-sport specific learning opportunities. He took courses in welding which helped him significantly in managing the equipment demands of the sport. He became adept at both repairing and adjusting equipment for specific athletes which allowed him to regularly modify his own equipment and ensure he had what he needed for his athletes. He also learned to read Braille, and became orientation and mobility certified in order to guide persons with visual impairments.

Early in his coaching career, this coach drew on his primary experience as an athlete, which is certainly consistent with coach learning studies in the able-bodied sport literature (Cushion, Armour, & Jones, 2003; Lemyre et al., 2007; Werthner & Trudel, 2006, 2009). However, given that he was not himself disabled, he also used a combination of keen observation, effective communication skills, and an ability to build productive relationships to help him learn about the athletes he coached and the unique environment of parasport.

Mark also drew on his primary and secondary childhood experiences (Jarvis, 2006; 2009). From his father he learned about practical training in the trades and developed a strong work ethic. His early recollections of the communication and relationship-building skills modelled by his mother also had influenced how he

developed relationships with his athletes and his coaching network. These findings are consistent with authors who have linked meaningful episodic experiences with an impact on learning and future behavior (Callary et al., 2012; Jarvis, 2006, 2009; Lorimer & Holland-Smith, 2012). Mark appeared to embrace change and creativity in his coaching, characteristics that again link back to skills learned initially in his family environment where he was encouraged to solve his own problems, often in collaboration with others. This willingness to seek out creative solutions and to use both self-reflection and reflective discussions with others seems to be consistent with past studies on successful coaches in the Olympic context (Werthner & Trudel, 2009).

Important links can also be drawn between the coach's biography and his primary and secondary experiences and a preference for particular ways of learning. Throughout his career, this coach preferred self-discovery and practical ways to problem solve, where possible, which links back to his childhood where he was encouraged by his father to innovate. These skills were honed throughout Mark's coaching career to form an approach to coaching that blended tactile and work-related skills with his own experiences as an able-bodied athlete. Callary et al.'s (2012) study on women coaches illustrated how learning was influenced by primary and secondary experiences as an athlete, learning from family and from other coaches. Other researchers have also written that coaches will view and interpret coaching events in the future on the basis of their early experiential foundations and that "such formative experiences carry far into a coach's career and provide a continuing influence over perspectives, beliefs, and behaviors" (Cushion et al., 2003, p. 218).

This coach also emphasized the role that his personal values, learned from his parents, played in how he viewed the importance of building effective and long-lasting relationships with his athletes and other members of the parasport community, including his key collaborators. Callary et al. (2013) also found that values played an important role in how women coaches developed their approach to coaching and Lorimer and Holland-Smith (2012) found that early experiences and passion for sport can lead to development of values required for sharing their knowledge with others.

In the end, despite the numerous challenges, such as few sport-specific para coaching resources, funding challenges, and a small resource network, Mark has been navigating these challenges with enough success to still be coaching in parasport well into his second decade.

Limitations

This study has afforded an in-depth look into one coach's life of learning although we cannot generalize to all coaches in parasport. While there is significant value to using self-reporting as a form of inquiry, there are also inherent limitations to participants having access to their past experiences through retrospection. One way to address this challenge is to triangulate the accounts of others who may add additional dimensions. As well, researchers could consider using observations and artifacts from the coach's life history to prompt richer data. Future research might also consider longitudinal case studies in different sporting contexts.

Conclusion and Recommendations

This coach spoke of the influence of his parents and early exposure to persons with disabilities, the importance of his formal education in physical education and the numerous situations and individuals he sought out that helped him learn as he progressed in his coaching career. As a result of the present study we have three recommendations for coach educators who are working to provide support for coaches in the parasport context. First, parasport educators might consider accessing high school students who are required to accumulate a certain number of hours of volunteer work. Providing an early exposure to parasport coaching and provision of the appropriate learning support to such young adults might allow parasport organizations to identify individuals who have the motivation to work in the parasport context. Second, it is suggested that coach educators recognize the relevance of a formal education while also understanding that parasport will require the development of other learning situations given the myriad of disabilities and various equipment needs. Third, given the coach in the present study found it important to build a network of key collaborators to help him navigate the parasport context, sport organizations and coach educators should explore ways to create and nurture such coaching networks. It is hoped that the present study will provide valuable information to those in national sport organizations who are committed to para coach support and education, and that formal coach education programs will work to enhance support and resources to improve coaches' learning within the parasport context.

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Appendix A:
Interview Guide

Interview #1 Guide - Parasport Coach

Introduction - Purpose of the study is explained, coach asked to bring mementos or artifacts that might help provoke reflection and more in depth discussion regarding the different contexts in which they coach and learn.

1) Please tell me about your life/your background (social context; life history)

Where did you grow up?

What is your family background (parents/siblings/extended family)?

Tell me about your schooling/education?

Did you play sports when growing up? If yes, please describe.

Do you have a partner/children? – if so, please tell me about them and how they are part of your life.

2) How did you enter the world of coaching? (coaching specific context)

When did you begin coaching?

How long have you coached?

Who are the athletes/teams you have coached?

Able-bodied? With disabilities?

3) Tell me about your current coaching and life experiences that have influenced your coaching? (learning environments; approaches to learning)

How do you think you have learned to coach?

Have you taken any coaching courses at university, NCCP, other?

Have you taken applied clinics, other courses that were part of your learning?

In recent years, and in past, what/who stands out for you?

What kinds of things or experiences/people/situations have been important to you, in learning to coach?

4) Please describe a particular learning experience(s) that stands out for you. (strong illustrative disjuncture)

Do you think this affected/influenced your coaching? If so, how? If no, why not?

Are there any other experiences you would like to describe now?

Does anything stand out from your past as being most influential (specific family members, friends, early life experiences and influences)?

What are some of the key lessons you learned from your background/childhood etc. that resonate with you in your life as a coach?

5) What are some of the different ways you feel you learn?

Any specific challenges in your life and how you learned from them?

6) Tell me more about coaching athletes with physical disabilities.

If you have coached athletes with and without physical disabilities, what are some of the similarities and differences in your coaching in both environments? Are there things that are unique? Please explain.

7) How do you feel you have learned to be a good coach? What do you feel has helped you develop as a skilled coach:

a. Formal experiences (NCCP, others – probe for specifics)?

b. Working with other coaches/colleagues, from other countries, from your athletes, from your experiences?

c. Being a past competitor?

d. Conferences, clinics?

e. Anything else?

8. If courses, (or other workshops, continuing ed. etc.) tell me about those courses (probes):

a. How they have helped or not helped?

b. What have you learned?

c. What do you use/don't use? (explore specific examples)

9. How do you feel you learn best?

a. Do you ever contact/talk with other coaches who were in those courses with you?

If yes, what do you discuss? (admin., specific coaching issues?)

b. Do you ever talk with coaches from other countries to discuss training issues?

If yes, what do you discuss?

c. Are there other individuals with whom you collaborate or share these learning experiences?

If yes, can you give me an example?

10. Are there collaborators in your para-coaching or outside your para-coaching world? (*does not have to be just coaches. Could be athletes, parents, administrators, mentors, other…)

- If coach lists people, ask about role in learning, and their names/roles/detail (probe specifics here)

- Are these ongoing relationships? Please give me an example.

- Discuss the next interview with the coach (time to reflect on this interview, will be following up on ways they learn, and we may want to interview some of the individuals they identified as collaborators)

- Contact information

Interview #2 Guide - Parasport Coach

Introduction: Restate the goal of the study (coach learning) and the participant's role in the study.

In our first interview you provided descriptions and context for many important experiences that helped to form the person you are today – the coach you are today.

Now I'd like to probe a bit further into some of the learning situations that you spoke about in the first interview. (questions on the various learning situations – tell me more about i.e. the coaching clinic

After full probes of areas above bring forth the following:

During those earlier discussions, you indicated that several people have been important collaborators in your current program and that you learn with or from them. I would like to interview them to discover more about the types of interactions you – and they – share. This is so I can better understand your coaching context, given that this study is about how coaches learn throughout a lifetime, and a wide variety of experiences, interactions, and internal reflections. I have also had the chance to see your training environment, and observe your parasport context.

*Interview guide personalized to explore themes touching biographical detail (primary and secondary experiences; early family, school, sport and coaching experiences); Complete gaps in timelines, logistical detail, more precise examples of training; additional experiences or detail surrounding learning contexts (formal, nonformal, informal) and para coaching environment descriptors.

Interviews with Collaborators: Interview guide for coaching practice participants

Introduction: Describe the study and the participant's role in the study.

This is a study on the various ways coaches learn to coach in parasport. I will be asking you questions about your interactions with this coach and the role you play in this sport.

1. Please describe your role in this team/program. (Probe for details regarding their profession or role: team physiotherapist, manager, assistant coach, other expert etc.) Please describe how (and/or the ways in which) you interact/work with the coach. How often, in what ways (phone, email, in person etc.)
2. What got you into this role in sport?
3. Time spent with the coach?
4. Paid or volunteer?
5. Level of expertise or education?
6. Other important information that would be useful in learning more about the relationship you have with this coach's learning

Interview #3 Guide - Parasport Coach

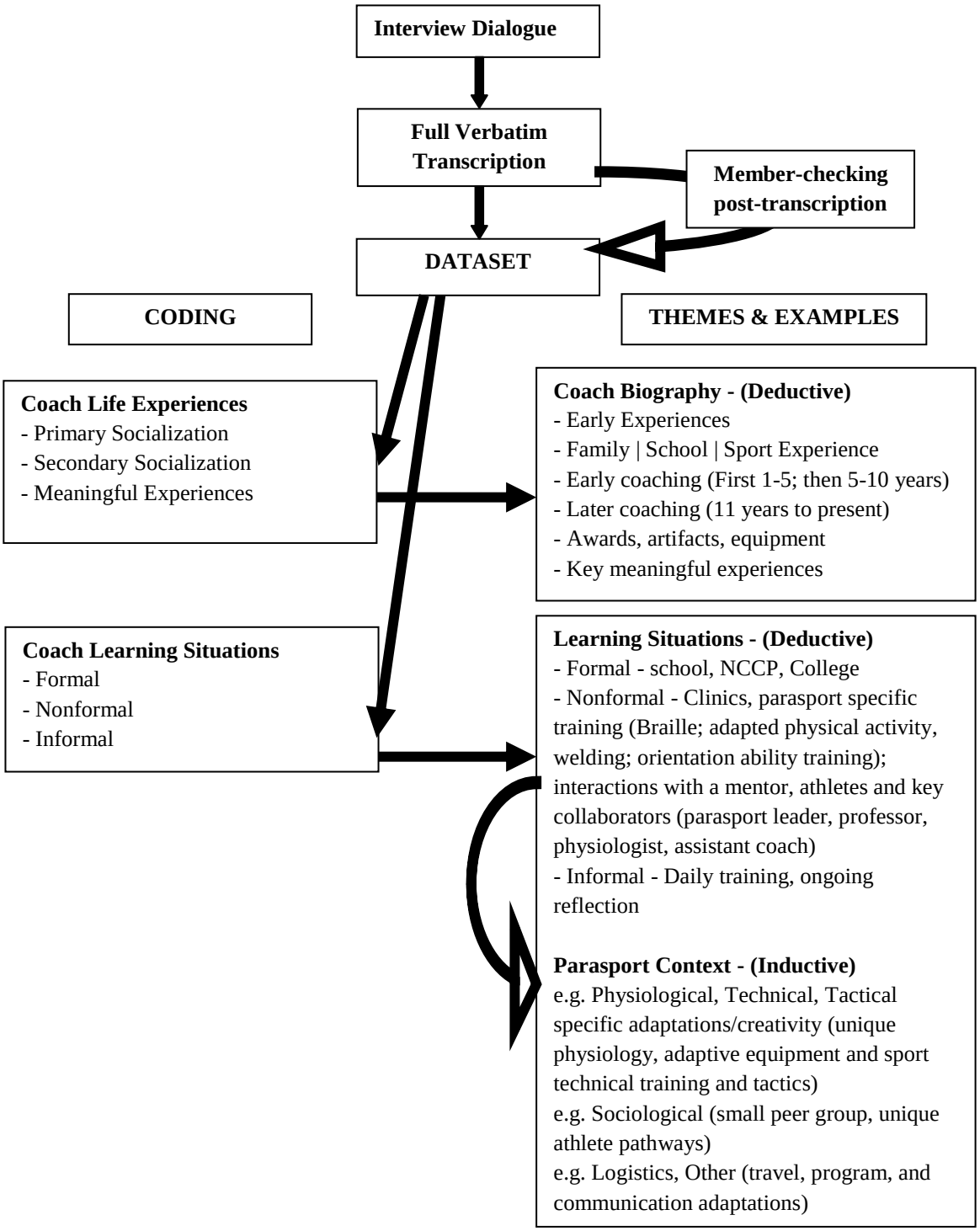
Further probing on the patterns/themes from Interview #1 and #2 will guide the interview:

1. Probing more details on the learning experiences (in and out of sport)
2. Coaching practice/collaborator development/relationships/roles (if any)

Appendix B

Diagram demonstrating how themes were derived from coded data. Arrows represent data flow from dialogue to transcription to data set, through deductive (a priori) and inductive codes and themes.

Using Jarvis as a theoretical framework for the interview guide, a semantic approach was used, similar to Werthner and Trudel's (2009) study examining elite Olympic level coaches.



Dynamic, Evolving and Social:

Learning Interactions of Parasport Coaches

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Abstract

Since the nineteenth century, researchers have investigated human orientations to learning (Merriam, Caffarella, & Baumgartner, 2006). Within the learning literature is the concept of social learning: learning in the world by interacting, observing, and taking part in the social world. A number of social learning theories have been applied and tested in the coaching context, resulting in a link to the concept of social learning systems and the role they play in coach learning. Coaching researchers have begun to explore the concept of social learning systems to understand how coaches engage in different types of interactions and relationships in order to learn how to coach. A collective case study of four parasport coaches was conducted to explore how different types of interactions play a role in parasport coaches' learning. Suggestions to guide coach developers and sport organizations on how to further nurture and grow these social learning systems in parasport are provided.

Keywords:
coach learning, coach networks, parasport, lifelong learning, social learning

Coaches play an important role in the sport system and, as appreciation for this role has increased, so has the need for better understanding of how to develop competent coaches (Cushion, 2010; Gilbert & Trudel, 1999, 2004; Lyle & Cushion, 2010). Coaches are social beings and coaching knowledge is "socially constituted, socially mediated, and open ended" (Cushion, Armour, & Jones, 2003, p. 221). Many authors have suggested that in addition to this social dimension, coaching is context-specific, and learning opportunities for coaches many be unique to each coach (Callary, Werthner, & Trudel, 2012, 2013; Côté et al., 1995; Cushion et al., 2003), and so it is important to consider that what coaches need to know in *parasport* might be different from able-bodied sport. The vast majority of research in coach learning looks at core coaching programs in the able-bodied sport world and rare are the studies that look at the types of coach learning situations and their effectiveness for coaching athletes with disabilities. For the purpose of this article, the term *parasport* is used to describe sport for athletes with a disability, and *Paralympic sport* is used to describe the official term that describes high performance sport that is governed by the International Paralympic Committee (IPC).

Key challenges in parasport coaching are insufficient numbers of coaches and lower levels of expertise and experience and the questions surrounding how to best support and grow the parasport coaching world are many. It has been suggested that due to the paucity of formal and nonformal coaching resources for parasport coaches, these coaches often seek out informal learning situations such as mentors, outside experts, and a multidisciplinary team approach to learning (Burkett, 2013; Cregan,

Bloom, & Reid, 2007; DePauw & Gavron, 2005; McMaster, Culver, & Werthner, 2012; Tawse, Bloom, Sabiston, & Reid, 2012).

All of these aforementioned areas touch on the complexity of the social nature of coaching development and how learning is context-specific. Coaching researchers have begun to explore the concept of social learning systems to explain how coaches may use different types of interactions and relationships in order to learn (Culver & Trudel, 2006; Occhino, Mallett, & Rynne, 2012). The purpose of this study was to explore how different types of interactions influence parasport coaches' learning.

Social Learning Systems

Wenger, Trayner, and de Laat, (2011) suggest that for many organizations and groups, learning may take place in social learning systems. For these authors, *communities* and *networks* have emerged as "two aspects of social structures in which learning takes place" (p. 9). The network aspect refers to personal interactions, connections or relationships among people who have specific reasons to connect. The community aspect refers to the "development of a shared identity around a topic or a set of challenges. Furthermore, there are groups where one aspect so clearly dominates that they can be considered 'pure' communities or 'pure' networks" (Wenger et al., 2011, p. 9).

Lave and Wenger maintain that learning involves participation in systems of co-participation; they called these systems *communities of practice* (CoPs; Lave & Wenger, 1991; Wenger, 1998). A CoP has the potential to exist when certain conditions are met in a workplace, school or special interest group. More specifically,

the underlying assumptions for a CoP are "(a) humans are social, (b) knowledge is competence in a valued enterprise, (c) knowing is active participation in that enterprise, and (d) meaning is the ultimate product of learning" (Wenger, 1998, p. 4). CoPs are defined as "Groups of people who share a concern, a set of problems, or a passion about a topic, and who deepen their knowledge and expertise in this area by interaction on an ongoing basis" (Wenger, McDermott, & Snyder, 2002, p. 4).

Further to these assumptions are three dimensions by which the CoP is defined (Wenger, 1998). The first is "mutual engagement," meaning a mutual sharing of knowledge and expertise. Members become cognizant of their own areas of expertise and how they can use it to help other members of the CoP; at the same time, they are aware of others in the CoP who can provide expertise back to them. The second dimension is the "joint enterprise," that the mutual engagement and sharing of expertise is understood and is constantly negotiated and transformed by members as time goes on. The final element is the concept of the "shared repertoire." The shared repertoire is a collection of everything from tools, stories, actions, a shared vocabulary, routines or specific techniques that the group may discuss and share. More recently, Wenger has expanded his view of learning and the structuring of these social learning systems coining the concept "landscapes of practice" (LoP) (Wenger, 2010). "Knowledgeability is not defined by the regime of competence of a single community but gets negotiated within a broader landscape" (Omidvar & Kislov, 2014, p. 272).

Other types of social learning systems help generate knowledge in the workplace, education setting, and other environments (Allee, 2003), and share more

characteristics that are consistent with the aforementioned "network" aspect to social learning systems. *Informal knowledge networks* (IKNs) are made up of individuals who give or receive information from one another. IKNs tend to be comprised of more informal relationships and they may not have clear boundaries (Allee, 2003). In a *network of practice* (NoP), relationships involve individuals seeking information related to shared practice and most information is one-way in direction with little collaboration or reciprocity (Brown & Duguid, 2001; Nichani & Hung, 2002). The NoP members may never meet in person (Brown & Duguid, 2001). In electronic NoPs, also known as virtual or electronic communities, members may provide information via email, blogs, upload sites or other communities over the internet.

Social Learning Systems in the Coaching Literature

Some researchers have acknowledged that while learning to coach is a social process, "we lack the insight and guidelines which could enable us to optimise and exploit the process" (Stoszkowski & Collins, 2012, p. 4), and recommend more exploration of these social learning systems in coaching. The CoP concept has been examined in the coaching context (Barnson, 2010; Culver & Trudel, 2006; 2008a, 2008b; Lemyre, Trudel, & Durand-Bush, 2007; Mallett, 2010; Stoszowski & Collins, 2012). Although a CoP may be useful in some circumstances for coach learning, there are significant challenges that might limit its effectiveness and sustainability (Culver & Trudel, 2006, 2008a, 2008b; Wright, Trudel, & Culver, 2007). A prevailing issue that often inhibits the development, benefits, and sustainability of a sport *coaches' community of practice* (CCoP) is the nature of competition. Intense competition is

integral to sport and as athletes and their coaches are competing against others it is common for coaches to withhold information from other coaches (Barnson, 2010; Culver & Trudel, 2006; 2008a, 2008b; Culver, Trudel, & Werthner, 2009; Mallett, 2010; Stoszowski & Collins, 2012; Wright et al, 2007).

Research on informal knowledge networks (IKNs) and networks of practice (NoPs) in the context of coaching has demonstrated that this type of looser engagement often exists between coaches and others around them (such as other coaches or sport science experts), and has the potential to provide an economical network support in the case of the NoP virtual communities (Culver & Trudel, 2006; Gilbert, Gallimore, & Trudel, 2009; Trudel & Gilbert, 2004). IKNs are often seen as a means for coaches to solve a particular problem or to seek immediate information on a specific issue (Culver & Trudel, 2006, 2008a, 2008b; Occhino et al., 2012).

Within the high performance sport context, Occhino, Mallett, and Rynne (2012) introduced the concept of another type of social learning network which they called dynamic social networks (DSNs). These DSNs are characterized "by the development of a trusted and respected relationship between a coach and a confidante where the coach actively seeks counsel from a person" (Occhino et al., 2012, p. 4). The authors argued that these DSNs appear to result in direct changes to the coaching practice of the coach due to the highly applied nature of the discussions and the issues and solutions generated. These trusted network individuals tend to be in positions that are not in direct competition with the coach. However, to date there has been no other research to support the DSN concept.

Historically, formal and nonformal learning opportunities in disability sport have been lacking (DePauw & Gavron, 2005; McMaster, Culver, & Werthner, 2012). Two more recent studies have looked at parasport coaches and their learning. Cregan et al. (2007) found that para swimming coaches often turned to informal learning opportunities and McMaster et al. (2012) found that coaches in a variety of parasport contexts learned from formal and non-formal opportunities as well as from their athletes. It has recently been suggested that one of the ways to address the unique challenges in parasport coaching is through collaboration with an interdisciplinary team (Burkett, 2013).

While attempts have been made by coach development administrators to provide formal and nonformal parasport coach resources, only half of the 27 Paralympic partner sports in the Canadian National Coaching Certification Program (NCCP) have completed the development of sport-specific training and resources for coaches for athletes with a disability. Gaps still exist and one way to address these gaps is by continuing to examine the various learning situations utilized by coaches who are working in parasport. Specifically, the purpose of this study was to explore how different types of interactions influence parasport coaches' learning.

Research Design

The current study was conducted using a constructivist paradigm (Guba & Lincoln, 1994) where *meanings* that are uncovered through the course of the research are personal and individual. Merriam (2002) has suggested that the constructivist paradigm is underscored by each person's unique life-world, where reality is subjective

and dependent upon the collaboration of the participant and the researcher is doing the interpreting. Other researchers have pointed to the constructivist paradigm as being a more contemporary way of viewing the human learning process (Merriam, Caffarella, & Baumgartner, 2007). Armour (2010) also suggested that constructivist theories are a fitting approach for studying coaching due to the unique and individual nature of human learning.

Methods

A collective case study methodology was used to seek greater understanding of social learning by exploring the interactions of four parasport coaches. In a collective case study, more than one case is selected but the researcher uses the multiple cases to illustrate the issue being studied (Merriam, 2002; Stake, 2005, 2006). For the purpose of this study, the "case" is the life world and social learning system of four parasport coaches, including members of their coaching practice.

Purposive sampling (Creswell, 2007; Patton, 2002) was used in selecting participants. The four coaches were selected based on having extensive coaching experience in able-bodied sport and parasport and all were full-time coaches who had been identified as being exemplary by the Canadian Paralympic Committee and their national sport organization. They coached four different sports: para swimming, para athletics, goalball and para cycling. Polkinghorne (2005) has suggested that single interviews are "most often not sufficient to produce the full and rich descriptions necessary for worthwhile findings" (p. 142). Therefore three individual interviews were conducted with each of the four coaches to provide breadth and depth to the

exploration of the parasport coaches' learning experiences. The first interview helped establish a foundation of rapport, broad biographical information, and an initial understanding of various learning experiences. As Polkinghorne (2005) has suggested, the time between the first and second interview allowed the coaches to reflect more deeply on particular learning experiences. The second interview created an opportunity for a more in-depth discussion of the coaches' learning. In the first and second interviews, each of the four coaches identified individuals with whom they interacted regularly as members of their coaching practice and who they felt helped them with their learning. As a result, these collaborators were subsequently interviewed. Prior to the third interview with the coaches, the researcher once again reviewed the transcripts and asked follow up questions during the third interview to further explore learning experiences and interactions with the key collaborators. This third interview also provided an opportunity for the coaches to add any newly recalled information. See Table 1 for further details on the scope and purpose of each interview phase in this study.

Table 1.

Methods - Interviews

Research Phase	Participants	Purpose	Sample Questions
Interview #1 Coaches	4 coaches	To explore parasport coaches' life history, learning situations and coaching contexts.	"Tell me about coaching athletes with physical disabilities." "What has helped you develop as a coach in parasport?"
Interview #2 Coaches	4 coaches	To probe further into topics revealed in Interview #1; identifying key individuals with whom the coaches collaborated in their coaching practice.	"In your first interview you mentioned learning from/working with, *Person X*. Tell me more about your interactions with that person and your learning."
Interviews with Collaborators	3 or 4 collaborators per coach	To understand what role each collaborator played in the coach's learning.	"Tell me more about your personal and professional role in parasport." "Tell me about your interactions with this *Parasport Coach.*"
Interview #3 Coaches	4 coaches	To probe for further learning situations and interactions that were important to coach learning.	"Tell me more about your interactions with Person X." "Can you think of any other meaningful learning situations or experiences that we have not discussed?"

Approval was received from the University Research Ethics Board and a pilot interview was conducted with a parasport coach who had coached in parasport for almost ten years. This pilot interview assisted in the completion of a first interview guide, testing relevancy and utility of questions and probes. Each participant in the study signed a consent form prior to the interview.

Transcripts from each interview were analyzed as the study progressed and themes or patterns were documented as they emerged or changed shape throughout the time span of the study. Braun and Clarke's (2006) thematic analysis, a six-stage analysis protocol, was used to synthesize the various emerging themes that were both deductive (a priori) and inductive. The transcribed interviews were coded using NVivo QSR 2010 (Version 9.0) data management system, and the resulting themes and extracted vignettes formed the basis for this paper, which focused on emergent themes relating to social learning through interactions in the parasport context.

All transcripts were member-checked by the coaches and their collaborators and only minor spelling changes were requested. All themes and issues were discussed with an academic advisor who specializes in coaching research. All coaches and other individuals referred to in the interviews have been assigned pseudonyms.

Results

The results section is divided into three sections that explore the interactions that contributed to the parasport coaches' learning. These interactions occurred with a variety of individuals: (a) key collaborators with whom the coach had ongoing relationships as part of their coaching practice, (b) the athletes with whom the coaches

worked on a day to day basis, and (c) informal and sporadic interactions with others with specific expertise.

All four coaches in this study identified key collaborators with whom they intentionally interacted in their coaching practice (see Figure 1). In some cases, the coaches built these relationships over a lengthy period of time and spoke of a high degree of reciprocity in learning from and with the collaborators. In other cases, such as the other experts with whom coaches interacted sporadically, the learning was more unidirectional. All coaches and their key collaborators used common vernacular that was specific to parasport, terms like "wheelies" (athletes who use wheelchairs), "classes" (to define the Paralympic classification or abilities category in which their athlete participated), or acronyms such as "MDSOs" (multisport disability sport organizations). This section will explore the nature of the social learning systems for each of the four coaches.

Mark: His social learning system. Mark referred to learning from interactions with four collaborators who were part of his coaching practice during the course of this two-year study: his assistant coach, a disability sport leader, an adapted physical education professor, and an exercise physiologist. He also spoke of learning through interactions with his athletes and other experts.

Mark described his assistant coach, Peter, as contributing to his knowledge of working with developing athletes with spinal cord injuries. Peter was a former Paralympian with a spinal cord injury and his first-hand experience of disability helped Mark to better understand the needs of athletes with similar disabilities: "Peter

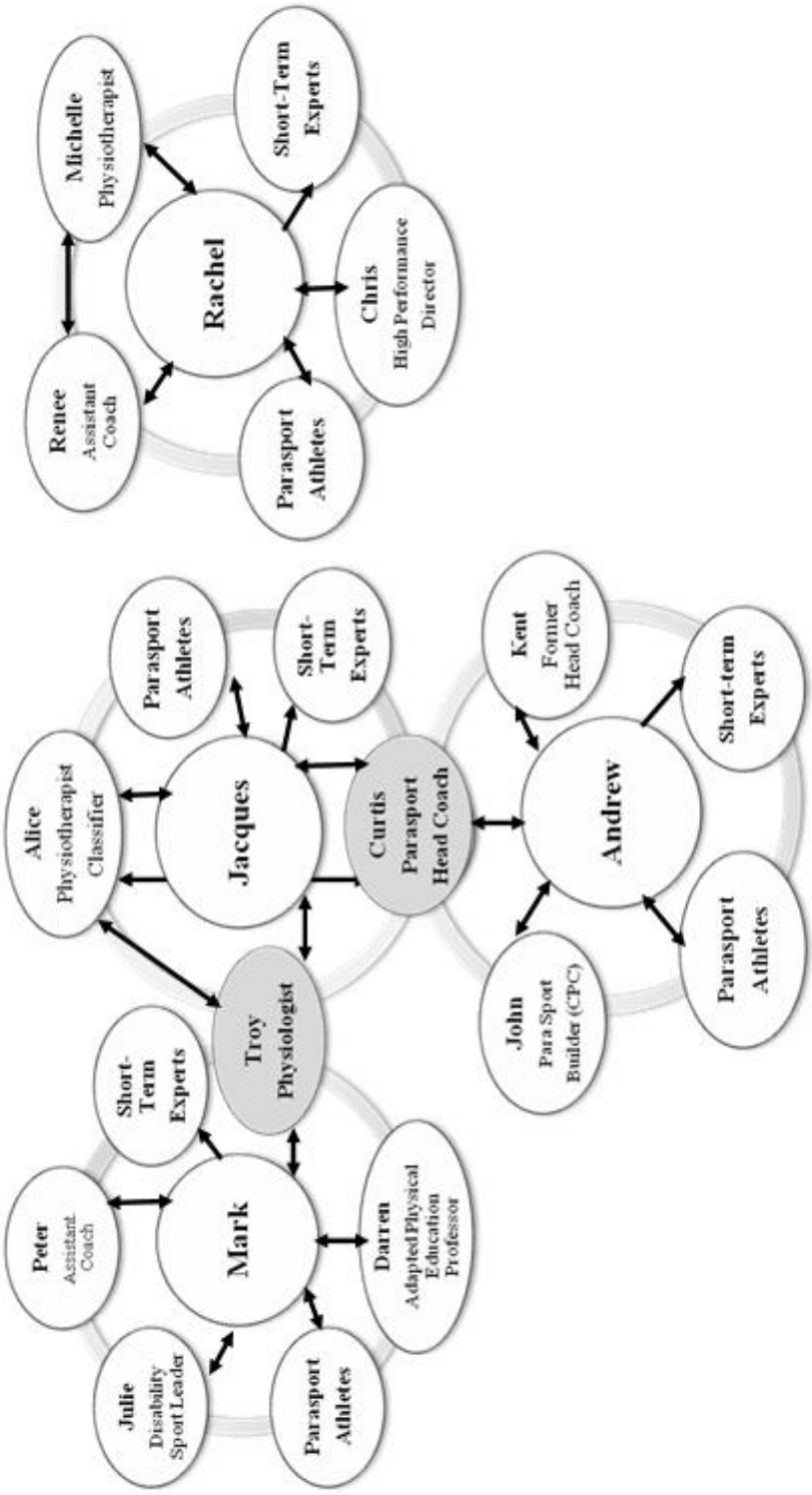

Figure 1. Para Coaching Interactions

is working with me. I've worked with him in the past and he's back in the system now doing endurance wheelchair sports. He brings a lot of experience from his days in racing."

Peter corroborated Mark's description of their working relationship as "being mutually beneficial. I understand and share some intimate details from interactions with the athletes or things from our training sessions. It helps Mark to recognize something he hadn't considered until I pointed it out to him."

Julie, a leader and administrator in disability sport, also played an important role in Mark's learning. She spoke of how she helped him understand how to liaise effectively with the disability sport community groups. She was a source of advice and assistance with the business side of the program and helped Mark learn how to reach particular disability groups in the community. Mark credited her with helping him with contract negotiations and communication approaches. She echoed this and added that she and Mark worked together on issues that helped them both in areas such as "promotion, upcoming meetings and events, individual athlete cases, issues of recruitment, and work on a facility that was going to affect us both."

Mark described Darren, a third key collaborator and university professor in adapted physical activity, as a colleague and confidant. Darren provided placement students to assist Mark in his program and helped Mark understand the funding challenges in the parasport system. Darren also called on Mark to share his coaching knowledge with his university students and Mark noted that these presentations provided him with an opportunity to reflect on what he might need to be working on in

his coaching practice. Mark also noted that these presentations, where he engaged with students, also enabled him to recruit new coaches to the parasport community.

A fourth key collaborator for Mark was Troy, an exercise physiologist who was also conducting research in parasport. Troy validated Mark's training plans and gave him advice on loading, tapering, and adjusting his training as required while Mark supplied important coaching knowledge and research collaboration that was of benefit for Troy's research:

> Our lab is doing research on warm ups and muscular fatigue. Because it's very difficult to get electrical stimulation to work and get an output in para athletes (i.e. in an amputee), we use the research from our lab and transfer it to our para athletes. Working with Mark and his athletes, it's changing tradition.

Mark also spoke of the daily interactions with his athletes and how discussions with his athletes about their training and their specific needs relative to their disability were an important part of his learning: "Once the athletes become in tune with their body, they start to perform at a higher level. They help me push those boundaries and initiate new ideas even more. It grows from there." While learning from his athletes took place daily, Mark also used some external experts on a sporadic or one-time basis. For example, he used graduate students to keep him up to date with current sport science and medicine findings on a "need-to-know" basis: "I'll have students research training aspects for athletes with cerebral palsy and get me 15 current articles since I can't keep up with all the new developments."

Rachel: Her social learning system. Rachel identified learning from interactions with three key collaborators in her social learning system: her team physiotherapist, her assistant coach, and the high performance director of her national sport organization. She also spoke about learning from the athletes in her program, and other experts she used for specific reasons on a sporadic basis. The physiotherapist, Michelle, was a source of support and information on sport injury issues and acted as a sounding board for Rachel, particularly when the team was travelling. She helped Rachel introduce recovery strategies and game day physical preparation protocols that were all quite new for the athletes, while providing a different view when an intervention or particular new initiative was not working. Rachel noted that "I could confide in her and she helped me a lot. I would bounce things off her and relied on her to look at all of this from another perspective."

The assistant coach, Renee, had a degree in kinesiology and had played competitive basketball. Rachel said that the two of them worked together to design the training programs and tactical drills, as there was very little training literature available in their parasport. Renee was doing doctoral level research with visually impaired athletes and she worked with Rachel to help interpret some of the athletes' verbal and non-verbal communication, discussing different socialization patterns for the players who had been raised in schools for the visually impaired versus an integrated school system:

> Some of these visually impaired athletes needed to work on social behaviours. At first, when we approached the athletes they wouldn't turn to you or talk to

> you, so a sighted person couldn't tell if they were listening or engaged. We had to work together to build these communication and social skills, to help live, compete and work in a sighted world. (Renee)

All three women spent many hours together in training camps and at competitions, and collectively brainstormed ideas on how to improve the team group dynamics and communication issues that negatively impacted performance. As the physiotherapist noted:

> We learned that when we played the loud, emotional Brazilian team, we needed to be loud, too, and come in as a strong unit to combat that environment. In Paralympic sport, we were a small team and staff and we had to use one another's strengths. We were all able to trust and support one another through some challenging times getting to know this sport culture.

The high performance director, Chris, helped expand Rachel's sport science knowledge by ensuring she had the opportunity to enroll in specific training opportunities and by helping her analyse her training programs. He also advised her on how to adapt training to the challenges of a team with different stages of athlete development:

> I helped Rachel catch up on 40 years of sport science support. We were targeted for performance but with an infrastructure that was just not ready with no integrated support network. With visual impairment having a relatively low incidence rate, we couldn't afford to turn athletes away so I helped Rachel

develop athletes from a huge range of stages across the athlete development spectrum.

Rachel also noted that her interactions with her athletes helped her better understand the impact of visual impairment:

> I was working with some of the athletes, trying to get them to do a drill and I was trying to describe how to run it. I'd say “run to your side and slide on the floor.” One player who was a "total" (completely blind) would do side steps. Running sideways meant one thing, but I wanted him to do crossovers. I wasn’t used to working with totals so he helped me, through working through that description, to pay more attention to how I described what I was looking for.

Rachel also spoke of using other experts on a sporadic basis for particular coaching issues or challenges, such as a doctor to provide a jet-lag strategy for international travel: "I brought in a specialist who could do the best job of conveying important sleep information to my team. He also created travel plans for team to help for our upcoming trip."

Jacques: His social learning system. Jacques identified learning from three key collaborators with whom he met with on a regular basis: the national head coach for his parasport, a physiotherapist and international classifier (a person who helps examine and place athletes in particular disability groupings in order to compete), and an exercise physiologist. He also spoke about important interactions with his athletes, as well as interactions with other specialists.

Jacques spoke of working alongside Curtis, the national para team head coach, to explore ways to maximize performance and overall athlete health. In turn, Curtis credits Jacques's expertise, gained in working daily with lower athlete classifications, as helping the entire national coaching team: "It was the first time having athletes from some of the lower classifications, dealing with a full-time caregiver, bowel and bladder routines. A completely new world."

The physiotherapist, Alice, had over 20 years of experience in parasport and was an international classifier in multiple Paralympic sports with particular expertise in cerebral palsy. Jacques made use of Alice's expertise for understanding more about the trainability and health of two of his athletes with the most significant physical and neurological challenges: "One of my athlete's condition will get worse as the disease attacks her nervous system. Alice gives me ideas on ways to build her abilities and keep her in a place where she sees results – but it changes every month" (Jacques).

Jacques also relied on support, discussion, and mutual problem-solving with the exercise physiologist, Troy, as they together built programs that would be of benefit to athletes: "We bounce ideas off each other because we do see each other every four to six weeks. We'll sit and talk about each athlete to discuss training volume and intensity and how they respond, make suggestions, and implement them and see what happens."

Curtis, Jacques, Alice, and Troy participated regularly in conference calls, discussing individual athlete cases and team performance issues. The desire to collaborate and share information and expertise for the benefit of the athletes stood out in these interviews. For example, the physiologist said: "I've enjoyed working with

Paralympic coaches, the egos don't seem to be as big as in able-bodied coaches, in my experience, and they are more willing to learn and to use the experts."

Jacques also noted the importance of learning through regular interaction with his athletes to help him make adjustments to suit their needs, particularly in monitoring symptoms that might be dangerous and different to those in able-bodied swimming:

> I had to listen to, and get to know, my athletes and their limits - they share a lot with me. Last week one of the athletes had a headache. In able-bodied, the person can finish the workout slowly and eventually we can close the day. But I knew I needed to take her out of the pool. Her headaches are more severe and always get worse. I really have to listen to those specific symptoms.

Jacques also used other specialists or consultants to help in such areas as kinesiology, sport psychology, and occupational therapy.

Andrew: His social learning system. Andrew referenced learning through interactions with three key collaborators in his coaching practice: a former head coach in his program, a parasport head coach from another sport, and a high performance development director at the Canadian Paralympic Committee. He also spoke of the importance of learning through interactions with his athletes and other consultations with experts on a sporadic basis.

Andrew described Kent, a former national coach, as being a valuable source of advice when he faced important coaching decisions and it was Kent who strongly encouraged Andrew to pursue his formal coach education: "I worked with him and

made sure he persisted with his Level 4 coach training. It is key that he has those foundational tasks and training. I would also give him books to read and we would then discuss them" (Kent).

Curtis, a head coach of another national parasport team was an experienced peer for Andrew. They spent time together exploring issues such as athlete funding, classification, and issues such as motivation, work ethic, and accountability; "I try and keep up with the sport system changes and he is a key contact for those types of discussions." The two coaches had many shared challenges (e.g., funding, classification) in their programs and they felt sharing and learning from each other's successes and mistakes was mutually beneficial.

Another key collaborator for Andrew was John, a sport leader with the Canadian Paralympic Committee (CPC). Andrew credits John for being available when he had questions surrounding national policy changes or suggestions for issues on athlete or coach recruitment. John also felt he benefited from his relationship with Andrew, saying:

> Andrew is doing great work with athletes and coaches, but also working with the national organization. CPC sponsored an athlete development summit last year where they brought in all their stakeholders to figure out the responsibilities and system alignment for his sport. It's a big priority for him right now - how we get the provincial disability organizations, the provincial sport organizations, the clubs, working together to get rid of duplication and to best service those athletes and coaches moving forward. We're working together on that.

Andrew also felt that learning from interactions with his athletes was important as "only they can truly know what it feels like to do some of the movements and push some of the boundaries I am asking them to push." He also spoke of learning from one-time interactions with other specialists such as disability sport administrators, equipment specialists, and classification experts.

Discussion

The purpose of this study was to explore how different types of interactions influence parasport coaches' learning. The four coaches in this study described on-going interactions with key collaborators, with their own athletes, and with other experts on a sporadic basis. The coaches all noted how they learned alongside these individuals, how they built a relationship of trust, and how they reached out to them for information, discussion, and support. The findings indicated that there was variability in the kinds of interactions that emerged for the four coaches, linked to both the "network" and "community" aspects of social learning systems.

All four coaches' interactions within their own learning systems demonstrated a number of characteristics of a healthy community of practice (CoP). All four coaches reported having a shared repertoire (a core concept in CoP literature) with individuals with whom they shared coaching information (shared stories, common vocabulary, training or monitoring). For example, all of the coaches used language that was specific to parasport, such as colloquial terms to describe wheelchairs, classification and disability organizations. In particular, Jacques and Rachel's collaborators knew each other, communicated often, and were bound by unified program goals.

There was also evidence of mutual engagement and joint enterprise in this study, particularly between the coaches and members of their assistant coaching staff, as well as with coaches across other parasport programs. When questioned about sharing with other coaches in their own sport, the coaches expressed an interest in sharing more often across their community. These findings support the recent work by Wenger and colleagues (2011) that suggest that community aspects to social learning systems provide unique opportunities for all members to advance learning and this openness to sharing and willingness to collaborate are key prerequisites.

All four coaches in this study had completed degrees in human kinetics, physical education, or sport administration and their key collaborators appeared to primarily complement their coaching practice by filling knowledge or experiential gaps, particularly in the areas that were disability-specific. For example, the complex energy systems and many different disability classifications in parasport meant several of the identified collaborators helped complement a coach's need for designing new and experimental training plans. The use of key collaborators and experts by the coaches in this study reinforces suggestions that knowledge gaps in parasport coaching could be addressed through collaboration with an interdisciplinary team approach (Burkett, 2013).

In the current study, two coaches (Mark and Andrew) exhibited some network characteristics in their learning systems. The interactions and relationships centered on the coaches' particular needs and the key collaborators had specific reasons for connecting with the coaches, but not necessarily with each other. These findings again

lend support to Wenger and colleagues' (2011) suggestions that network members may not necessarily have the same collective purpose and yet this rich web of expertise and information allows for both targeted intention and spontaneity.

The emergence of both community and network aspects of parasport coach social learning systems in the present study can be linked to recent suggestions that these two aspects are both complementary and dynamic and the two aspects may grow and evolve together depending on the learning needs of the members (Wenger et al., 2011). Indeed, Wenger et al. (2011) argue that social learning is enhanced by both community and network processes through a combination of flexibility and focus and this complementary nature will enhance learning opportunities. In a recent examination of the social dimension of learning in coaching, Stoszkowski and Collins (2012) have also suggested that we should open our minds to more nonformal ways of coach learning as an addition to formal coach education and acknowledge the value of processes such as collaboration, informal network development, and learning from and with others. This area warrants further study, particularly in parasport coaching, where coaches seem particularly open to sharing and collaboration.

It is also important to consider another suggested type of network that also appeared to be present for the coaches in this study: DSN (Occhino et al., 2012). DSNs tend to take a certain period of time to become established and usually include a level of trust. In the present study, all the key collaborators identified by the four coaches met these two important criteria. The coaches discussed the ways they utilized the

expertise of their key collaborators to help them solve coaching problems and training issues.

It is important to note that in addition to the key collaborators identified by the coaches, all four coaches also identified their own athletes as helping them learn. None of the four coaches in this study had a disability and all spoke of the importance of learning about the specifics of each disability from interacting with their athletes. This interaction enabled them to more deeply understand the nature of the various disabilities and therefore design effective training programs. This is consistent with a number of recent studies that have begun to explore coaching development in parasport (Cregan et. al., 2007; McMaster et al., 2012; O'Neill & Richardson, 2008; Tawse et al., 2012).

Each of the four coaches in this study identified a third group of individuals who they felt also helped them learn and improve their coaching practices but through more sporadic or targeted one-time interactions. These types of interactions demonstrate characteristics of informal knowledge networks (IKNs) as they tended to occur when coaches needed a quick solution to a particular coaching issue (Allee, 2003; Culver & Trudel, 2006).

Finally, the identification and exploration of social learning systems has important implications for sport organizations and coach developers (Trudel, Culver, & Werthner, 2013; Werthner, Culver, & Trudel, 2012). The background and preferred learning situations of the coaches and their collaborators are important, as coaches seek out collaborators with complementary expertise for their coaching practice. It is

therefore suggested that sport organizations need to be flexible when offering human resources to coaches. It would be important to not simply impose one or two people that may or may not meet the needs of each individual coach.

Conclusion

As research in the area of coaching in the parasport context is sparse, this study adds to the conversation surrounding the coach learning literature in parasport. After conducting three interviews with each of the four coaches, as well as interviews with the key collaborators identified by the coaches, the findings indicate that the four coaches sought out a number of collaborators that helped them learn and grow as coaches. It is clear that working with trusted and knowledgeable collaborators was integral to the learning of these full-time parasport coaches. It is also clear that on-going interactions with their own athletes were crucial and that, on occasion, they also consulted with other experts on specific topics. The coaches in this study also expressed interest in developing a more coordinated effort to bring together coaches and their collaborators to discuss learning needs and provide opportunities to exchange ideas and address common challenges.

As a result of these findings, several recommendations are provided. First, more research is needed to understand how to further nurture parasport coaches' social learning systems. Second, sport and coach education organizations are encouraged to collaborate to create platforms for coaches to interact freely and to develop relationships with sport science researchers, expert practitioners, and other parasport coaches. Whether this is through virtual opportunities (e-Learning or sharing

websites), or regional or national opportunities such as conferences or clinics, the potential to leverage a variety of social learning systems appears to be of value.

Finally, while the coaches in this study were located near universities and were affiliated with national sport organizations, many coaches in parasport may not have access to these resources and finding collaborators, particularly individuals with experience in parasport, may be a more difficult process. Coaches' social learning systems are always evolving and gaining or losing membership based on coach needs. By better understanding the role these valuable key collaborators, athletes, and other experts play in nurturing learning in parasport coaches, coach educators will be able to create and maintain stronger links to coach learning networks.

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Reflection in Parasport Coaching

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Abstract

Moon (1999, 2004) has noted that reflection can be seen as a process of thinking anew about already existing knowledge and experiences. More recently, Boud (2010) has described reflection as “a means to engage in making sense of experience in situations that are rich and complex" (p. 29). Research in coach learning has suggested that one of the ways coaches learn is by reflecting on their coaching practice. The purpose of the present study was to explore how four parasport coaches used reflection to help them learn and develop as coaches within the parasport context. The findings are discussed in light of the context of parasport and are illustrated by four themes: reflecting on past and current experiences, reflecting with a "lens of adaptability", reflecting with others, and the relevance of the timing and depth of reflection, as coaches reported using reflection "before, during and after" their coaching experiences. Recommendations are suggested for how reflective practice might be nurtured for parasport coaches.

Keywords:
reflective practice, coach learning, cognitive structure, parasport

Paralympic sport, the parallel Olympic Games for athletes with a disability, has grown in recent years (Bailey, 2007; Legg & Steadward, 2011) and, as a result, it is worthwhile to consider developing a greater understanding of parasport coaching practice. Much of the early research in parasport found that coaches often rely on past coaching experience gained in the able-bodied context and on nonformal and informal learning environments due, in part, to a lack of formal training and resources for parasport (Cregan, Bloom, & Reid, 2007; McMaster, Culver, & Werthner, 2012; Taylor, Werthner, & Culver, in press). We know from the able-bodied coaching literature that reflective practice in a coach's learning cycle can play an important role in helping a coach develop their coaching practice (e.g., Cassidy, Jones, & Potrac, 2009; Cushion, Armour, & Jones, 2003; Gallimore, Gilbert, & Nater, 2013; Gilbert & Trudel, 2001; Knowles, Gilbourne, Borrie, & Neville, 2001; Werthner & Trudel, 2006, 2009). The present study aims to add to this literature by exploring how four parasport coaches used reflection to help them learn and develop within the parasport context.

The Parasport Coaching Context

Parasport coaches, just as coaches in able-bodied sport, have many roles, including technical and tactical coaching, understanding the behaviours and individual lives of the athletes they work with, and working with other experts in the field. Parasport coaches must also learn about the unique physiological challenges for each athlete and the various needs such as specialized equipment, prosthetics, and medications that directly impact training plans (Buchholz, McGillivray, & Pencharz, 2003; Burkett & Mellifont, 2008; Fulton, Pyne, & Burkett, 2009; Keogh, 2011; Valent

et al., 2008). Despite these additional challenges, the parasport context currently has fewer technical or adapted resources available, fewer paid jobs, smaller budgets, and fewer coaching peers and athletes (Burkett, 2013; Cregan et al, 2007; DePauw & Gavron, 2005; McMaster et al., 2012). Technical and sport science resources that are available tend to be designed by specialists or academics to meet their own needs, are not readily accessible for the parasport coach, and are often not suitable to fill coaching knowledge gaps (Burkett, 2013). Due to this lack of resources, coaches in parasport often must be more creative in making their own modifications to existing able-bodied programs and use more self-discovery, reflection, and informal resources (Cregan et al, 2007; DePauw & Gavron, 2005; McMaster et al., 2012; Taylor et al., in press). An increased reliance on a multidisciplinary network of experts and other coaches working in the parasport world has also emerged as an important source of parasport coach learning (Cregan et al., 2007; McMaster et al, 2012, Taylor et al., in press).

Coach Learning and Reflection

Rynne and Mallett (2014) suggest "coaches are learners by necessity" (p. 12). The research in coach learning has shown that each coach brings his or her own experience to each learning situation, as well as the possibility to reflect on his or her experiences, thoughts and actions (Callary, Werthner, & Trudel, 2012; Christensen, 2014; Gallimore et al., 2013; Gilbert & Trudel, 2001; Trudel, Gilbert, & Werthner, 2010; Wright, Trudel, & Culver, 2007). In turn, in order to acquire the skills and knowledge to meet the varied demands of coaching, researchers have suggested that

experience and reflection are important components of coach learning (Cassidy, Jones, & Potrac, 2009; Cushion et al., 2003; Gilbert & Trudel, 2005; Werthner & Trudel, 2006, 2009). Knowles, Borrie, and Telfer (2005) suggest that the most effective coaching may be grounded in building a relevant knowledge base and "such knowledge bases are created through a combination of practical coaching experiences followed by a period of critical reflection" (p. 1713).

Perhaps one of the more detailed theoretical frameworks for examining coach reflection is Gilbert and Trudel's (2001) experiential learning model. This study looked at six exemplary youth coaches who developed and refined coaching strategies through a process of reflection. The authors highlighted six distinct components that illustrated how reflection occurred: coaching issues (the catalyst for reflection to occur), role frames (filters for whether or not a situation warranted reflection), and issue setting (the process that identified a situation as a coaching issue). The other three components comprised a sub-loop of strategy generation (using resources to create strategies to address the coaching issue), experimentation (implementing a strategy), and evaluation (evaluating whether or not the strategy was effective in solving the coaching issue). The findings noted how reflection provides a framework for explaining how coaches learn through experience but the authors cautioned that not all coaches reflect.

Other researchers have attempted to introduce reflection within the more formalized context of coach education using a constructivist curriculum design that takes the learner's competencies and level of experience into account or through a

well-trained mentor or network of experts. Knowles and colleagues (2001) introduced journal writing and facilitated reflective workshops for eight coaches who also had a 60 hour technical coaching placement in their sport. The authors found that six of the eight participating coaches developed reflective skills through this process although cautioned that reflection is a complex process and noted there was variability in the way each coach responded to this environment specifically structured to encourage reflection.

Cassidy and colleagues (2006) attempted to integrate reflection into a rugby context by developing a small-scale coach education program that was designed to provide an opportunity for coaches to discuss issues selected by program designers. While the results noted the coaches found value in the meetings, the authors suggested a trained facilitator would have been useful to facilitate the reflection. Similar findings were found in a study involving alpine ski coaches (Culver & Trudel, 2006), where collective reflection sessions stopped once the facilitator was no longer engaged in the program. Recently, a compendium exploring issues in developing reflective practitioners in exercise science has suggested there are a number of ways of approaching and capturing reflective practice: journals, mind maps, visual sociology (photos, drawings), recorded narratives, communities of practice, and reflective conversations with others, such as critical-minded peers (Knowles, Gilbourne, Cropley, & Dudgill, 2014). Nevertheless, Gallimore and colleagues (2013) have noted that while coaches report they value and use reflection, documented examples of this are non-existent.

In the following section, literature on reflection and Moon's work on reflective and experiential learning is explored.

Reflection and Moon's Framework of Reflective and Experiential Learning

Reflection mediates the relationship between experience and learning and Dewey, (1933) has distinguished between thinking and reflection by stating "Reflection involves not simply a sequence of ideas, but a *con*sequence – [italics in original] a consecutive ordering in such a way that each determines the next as its proper outcome, while each in turn leans back on its predecessors" (p. 5). More recently, Boud (2010) has stated that reflection "is a means to engage in making sense of experience in situations that are rich and complex" (p. 29). Boud (2010) has also noted that the notion of reflection for professional practice has shifted to consider the collective nature of professional life as well as the individual: "The major features of the changing context of professional practice are: firstly, those associated with the collective rather than individual nature; secondly, its multidisciplinary or often transdisciplinary character; and, thirdly an increasing emphasis on practice being co-produced with those with whom it is conducted" (p. 30). Given the above, Boud (2010) has also suggested, "While models and strategies used by others are a good stimulus, reflection must be designed for context" (p. 34).

Jennifer Moon's extensive work on learning and reflection is a framework that is useful for understanding the learning process in adult education (1999, 2004) and her perspective has been utilized to help understand coach learning (Trudel, Gilbert & Werthner, 2010; Werthner & Trudel, 2006; 2009). In examining learning, Moon

(1999, 2004) makes an important distinction between two perspectives: the ‘building a brick wall’ and the ‘network’. Moon (2004), using the metaphor of the ‘building a brick wall’ approach to learning, suggests that in this traditional learning concept the “teacher provides for the learner the ‘bricks of knowledge’. It is assumed that the teacher knows how these will fit the pattern of the wall. The wall – knowledge – is thus built up” (p. 16). Moon’s second metaphor is a “vast but flexible network of ideas and feelings with groups of more tightly associated linked ideas/feelings. In the network some groups are far apart and some are near to each other and there are some relatively isolated ideas” (2004, p. 16). Moon uses this ‘network’ metaphor to argue that adults come to any given learning situation with a vast array of knowledge and she calls this network of knowledge, feelings or emotions a ‘cognitive structure’ and states that it represents “what is known by the learner at a particular time” (p. 17). One’s cognitive structure plays an important role in the learning process because it guides what we choose to pay attention to and what we choose to learn.

Moon (1999) created a map of learning that includes the role of reflection, based in part on a critical appreciation for Schön's (1983, 1987) work on reflecting-in and reflecting-on action, which he termed the reflective conversation. Moon (1999) suggests that the learner chooses, based on his or her cognitive structure and influenced by the particular learning environment, a path through the five stages. The first two stages are described as noticing and making sense and Moon argues learning at these stages is surface learning and guided by the learner’s current cognitive structure. In the third stage, making meaning, the potential for deep learning arises as

the learner begins the process of accommodation; he or she tries to understand the new material by relating it to his or her current understanding. The fourth and fifth stages, working with meaning and transformative learning, are seen as a process of deeper learning, where the learner accommodates new material, thus altering his or her cognitive structure (see Figure 1). More specifically, in the first stage (noticing) the cognitive structure facilitates the learner to notice what might be learned. Once noticed, the learner could proceed to the next stage (making sense), where he or she tries to organize and find coherence between the present material and previous knowledge. In the third stage of learning (making meaning) new material is assimilated into the cognitive structure; the learner relates it to what is already known and the cognitive structure starts to accommodate the new meaning. In the fourth stage (working with meaning) the learned materials and the meaning derived thereof become part of the cognitive structure; reflection is at work as the learner manipulates meaningful knowledge to achieve, for example, a deduction, judgement, or conclusion. The final stage (transformative learning), is the most sophisticated, where the learner deeply understands and perhaps re-structures her or his thinking. This reflection and creativity in the two final stages are part of what Moon calls "upgrading of learning" (Moon, 1999, p. 88). According to Moon (1999, 2004), reflection is a process of thinking anew about already existing knowledge and experiences and can be seen as "a tool that facilitates personal learning towards the outcome of personal development – which ultimately leads towards empowerment and emancipation”

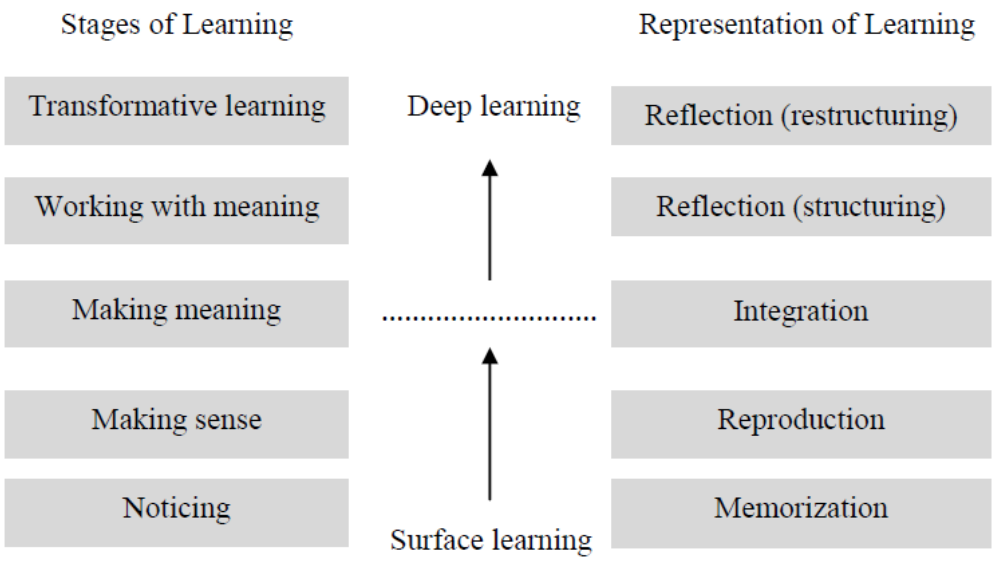

Figure 1. Map of learning and reflection (Moon, 1999).

(Moon, 1999, p. 88). She also suggests that working with others can facilitate learners to reflect, deepen, and improve the quality of the reflection "so long as all the learners are engaged in the process. Another person can provide the free attention that facilitates reflection, ask challenging questions, notice and challenge blocks in emotional barriers in reflection" (Moon, 1999, p. 172).

Moon (2004) also clarifies the distinction between experiential learning and reflection, noting the difference between the external (experience) and internal (reflective) processes at play:

> So could we say that experiential learning is the same as reflective learning? We cannot say this because experiential learning is a construct that is accompanied by different meaning according to the context of its use. In addition, however, experiential learning, virtually by definition, will involve at some stage, an external experience of learning. This is not necessarily the case with reflective learning activities in which the learner may be working entirely with internal experience (cognitive housekeeping) (p. 130).

In summary, Boud's (2010) suggestion that models and strategies for reflection that have been used by others are a good starting point but that context must also be considered when designing for reflection, provides a strong rationale for studying coaches' use of reflection in the parasport setting. Moon's (1999, 2004) view of reflection in the learning process and her concept of the evolving cognitive structure helped guide this exploration of how four parasport coaches engaged in reflection to

help them learn to coach in the parasport context. More specifically, the research question was how do parasport coaches use reflection in their coaching practice?

Methodological Approach

The current study was conducted from the perspective of a constructivist paradigm (Guba & Lincoln, 1994). Qualitative inquiry within a constructivist paradigm reflects the underlying assumption that individuals experience and interpret life in differing ways (Merriam, Caffarella, & Baumgartner, 2007). This approach has been suggested as a good fit for exploring and better understanding how coaches learn, as "behaviourist views of learning simply cannot capture the complexity of learning in the social practice that is coaching" (Armour, 2010, p. 157).

This study used a qualitative collective case study methodology to seek greater understanding of the reflective processes of four full-time parasport coaches as part of a larger dissertation on coaching learning in parasport. All the coaches and other identified individuals referred to in the interviews have been assigned pseudonyms and personal references have been eliminated in order to maintain anonymity. The coaches possessed a minimum of ten years of parasport coaching experience and had been identified by their national sport federations as being exemplary. The coaches came from the sports of para cycling, goalball, para swimming, and para athletics: Mark, who operated his own regional program that fed into the national parasport system; Rachel, a national parasport coach who worked in both men's and women's team sport; Jacques, founder and head coach of a club that specialized in parasport for athletes with severe disabilities, and Andrew, development coach of a national parasport

program. All four coaches in this study had completed a college or university degree related to sport: physical activity, kinesiology, recreation and sport administration.

A series of three interviews was conducted with each coach to explore how they may have used reflection within their coaching practice. The first interview helped establish rapport and explored many facets of the coaches' backgrounds and life experiences, asking questions such as "Tell me how you learned to coach in parasport?", and then followed up with probes such as "Tell me more about how you reflected on that?" or "How, when and where did you figure that out / sort that through / make sense of that?"

After analysis of the first interview, a series of questions were developed to further probe more deeply on how each coach used reflection and a second interview was conducted with each coach. Prior to the third and final interview with the coaches, the researcher once again reviewed the transcripts, revising the interview guide with follow up questions about their reflection and learning. Polkinghorne (2005) has suggested that a series of interviews allow for deeper and richer understanding and the time between interviews allows for deeper contemplation by a participant. Each of the coach interviews ranged from 120 to 180 minutes in length with each transcript totalling 30 to 40 pages of double-spaced text.

Approval was received from the University Research Ethics Board and a pilot interview was conducted with a parasport coach who had coached in parasport for almost ten years. This pilot interview assisted in the completion of a first interview guide, testing the relevancy and utility of questions and probes. All the transcripts

were analyzed as the study progressed and themes were documented throughout the two-year time span. Barbour (2001) writes that qualitative research can be intricate and warns against reducing qualitative research to a checklist of procedures that might ultimately compromise "the unique contribution that systematic qualitative research can make" (Barbour, 2001, p.1115). While the thematic analysis was deductive in the sense that Moon's concepts on reflection and her view of the learning process (1999, 2004) guided the initial questions, it was also inductive in that themes were allowed to emerge. The analysis involved a six-step ongoing approach (Braun & Clarke, 2006) that began with the transcription in the first interview phase and ended in the writing of the article. First, there is a familiarization with the data through the transcription noting themes, ideas, and reflections. Second, the transcribed interviews were coded using NVivo QSR 2010 (Version 9.0) data management system to help organize and interpret the data. Third, the data were analysed for themes (e.g., learning situations, reflection process, parasport context). In the fourth step, these themes were organized to show any relationships between themes. In step five the data and themes were reviewed for coherence and any gaps. Trustworthiness was enhanced through member checking of all transcripts by the coaches (Guba & Lincoln, 1994; Stake, 2005, 2006). Only grammatical changes were requested. All themes and issues were discussed with an academic advisor who specializes in qualitative coaching research.

Results

Each of the four coaches reported a considerable amount of analyzing, synthesizing, and reflecting on various aspects of their coaching practice. The results

section illustrates, through four themes, how reflection occurred for the parasport coaches, with verbatim extracts to illustrate the themes. The four themes were: reflecting on past and current experiences, reflecting with a "lens of adaptability", reflecting with others, and the depth and timing of reflection.

Reflecting on past and current experiences

Much of the content in formal education settings is not designed specifically for parasport and, as a result, the four coaches often used what they had learned earlier in their careers as students, athletes and later as coaches as a foundation, and then reflected on what they needed to change or adapt in order to be effective with their parasport athletes. Each coach provided examples of how they reflected on information they had learned in the classroom or in a technical coaching clinic, sometimes while the course was in session, or more often, reflecting back on the material and how it currently applied to the parasport setting: "Early on, you soak in all the literature, the studies, the models. It's new, and you're always thinking how can I use this in my coaching? Then, as you work with the athletes, you begin to question it and challenge it" (Andrew). All four coaches had participated in competitive sport since early childhood, noting that past athlete experiences were valuable in their "making sense" moments: "As a coach, I draw from that former experience when I now build my own programs. You don't need to have participated in this parasport to draw on those athlete experiences" (Rachel).

The coaches did place importance on early exposure to theoretical foundations in sport science, but felt it was important to test them:

> I took university classes in adaptive sport in addition to kinesiology. I learned that cerebral palsy (CP) manifests itself in the brain stem and affects motor control. Without formal education I would have been missing that important foundation. The more experience you get, you learn to reflect on that information with every training session and with every athlete. But there is no textbook example for a lot of our athletes. We're breaking new ground. (Mark)

One of the coaches felt his formal education on the history of the parasport system was important but also described how his understanding had evolved:

> What I do today as a coach in parasport is informed by the way our system works, and has evolved. I am always questioning how our disability agencies work with our sport agencies? How do regions work (or not) with national organizations? I was always thinking about how the history of this system can inform decisions for today. (Andrew)

Rachel and Mark noted this same type of challenge, stating that they often found themselves brainstorming ways they could bring disability and sport groups together to work in unity rather than an approach that seemed to highlight competing interests.

One of the coaches felt that reflecting on his coaching career brought depth to his understanding of new principles in the classroom when he chose to return as a mature student: "After years as an athlete turned coach, I went back to university for a physical education degree. I learned fundamental movement skills, the ones that come before sport skills. I knew it would make me a better coach" (Jacques). He said he would reflect on the new class material and how it could inform the adaptations in his

training plans: "I would think about LTAD (long term athlete development) and what that really means in a seasonal plan or cross training, always thinking about that, perhaps unlike my classmates who didn't have my coaching or life experiences" (Jacques).

Another coach noted how the new competency-based coach education program (NCCP) supported a process of reflection:

> In the new NCCP system, you're really debating issues and being provided the time to look critically at your coaching. I think that's what works well for me. I did a lot of reading and discussing, but it comes alive when you figure out how to put it into practice in your real coaching life. (Andrew)

Reflecting with a "lens of adaptability"

The coaches also reported taking a variety of disability training courses and certifications (e.g., adapted physical activity courses, courses on how to guide athletes, Braille, and training to modify equipment). The coaches talked about "wearing a lens of adaptability" in all they did and during the courses or clinics. One coach commented: "I take a lot of time thinking about how this piece of equipment, training plan or temperature outside is going to affect my athletes, sometimes the same, but often differently from the able-bodied program. Not better, or worse, just different" (Andrew). Another coach described how he was continually drawing from that base and yet modifying how he coached:

> The adapted physical education class where we learned about spina bifida came back to me from years ago, now that I'm working with athletes with spina bifida

> for the first time. I saw the scar on one of my athletes and she said "that's from my shunt" and that reminded me. Now I'll refer to that information from years ago to complement what I'll be doing hands on. Things like why the condition occurs, cerebral spinal fluid, and the shunt. (Mark)

Mark also reflected on how aspects such as aerodynamics, equipment modifications, and physiological testing all needed adapting and personalizing for each unique athlete.

One of the coaches spoke of how she needs to adapt her program to para athletes across a wide athlete development spectrum:

> Things come up and I go through a process. I think to myself "how best do I deal with this, have I faced it before – maybe in my life or in my own sport? … How do I teach what a warm-up is, why we need it, why it's important"? You might take it for granted and then you realize the athlete has no idea so you start at the basics. How did I warm up when I was competing, what did I learn there? What injuries happen in parasport that I can prevent with a warm up? (Rachel)

Reflecting with others

The coaches in the current study also spoke of being reflective as part of the process of working with their athletes, with other experts and coaches within sport, and when reading literature. All four coaches spoke of the importance of constant feedback and communication with their para athletes as an important part of their coach learning. Reflection emerged in pre-, during and post- interactions with athletes, whether the interaction was an observation or a verbal or non-verbal exchange.

> I can watch or guess what my athlete is thinking or feeling, but I don't know how my plans affect them until we debrief and I process it. I've never raced in a wheelchair – understanding that process is essential. Then I go think about how it went and how we can make it even better. (Andrew)

Another coach spoke of how he communicated with the athletes, then reflected, adjusted, and then they broke new ground together:

> I get permission from the athlete by saying 'Hey, I don't know what's going to work best here. I've never done this before. Let's work it out and see if you can do it with one leg, or with CP, etc.'. We would see what might fly and we would work it out (Mark).

Three of the four coaches spoke of observing others and then reflecting on what they saw:

> I am always thinking about what I need to fix or figure out. There's so much yet to learn in this sport. There is so little coaching material on the technical side. I am always watching other countries. Drawing from other sports and coaches and thinking "How can I improve our tactics or this movement?" (Rachel).

Depth and timing of reflection

Each of the coaches spoke of a "before, during and after" approach to incorporating reflection while working with others: "My physiologist helps validate my programs in a sport that needs to monitor our athletes (e.g., amputee athletes, spinal cord injuries). After I get input, I think it over and decide what I need to do to take his input into consideration" (Mark). This was echoed by Jacques, who spoke of a

similar approach to tackling some of the coaching issues he faced. He coached athletes with lower functionality and because he recognized he did not fully understand the medical situation for each of them, he enlisted the collaboration of a physiotherapist: "She knows about their disability much better than I do. I ask her specific questions about my swimmers' physical responses, and her years of experience help me look at what direction we can go with their training" (Jacques). In addition, some of Jacques's athletes had challenges communicating verbally and Jacques considered his ability to interpret and reflect on the body language of his athletes as being very important: "I ask myself, what did she (my athlete) mean by that? She stopped talking. Is it exhaustion, spasticity, or both?"

Discussion

The purpose of this study was to explore how four parasport coaches used reflection to help them learn to coach in the parasport context. Each of the four coaches reported spending a significant amount of time "thinking over" and "reflecting on" their everyday coaching thoughts, actions, and knowledge. As well, the findings indicated that the depth and timing of reflections were two critical factors that influenced the coaches' use of reflection.

All four of the coaches reflected back on their past experiences and educational learning situations while building their coaching practice, questioning what they had learned in more formal settings and adjusting those lessons to the parasport context in which they currently worked. They approached a wide variety of parasport coaching issues with the questioning lens of "how could I use or adjust that in my parasport

practice?" Moon (2004) has stated "where there is reflection, there is a deep approach to learning" (p. 100). The findings of this study illustrate that each of the coaches reflected deeply, individually and with others, on the many critical issues that emerged daily in the training environment and competitive setting. The issues ranged widely, from figuring out how to make equipment or technical adjustments to how to address physiological or psychological challenges in practice and competition. It was these issues that, as Gilbert and Trudel (2001) have noted, "served as important triggers for reflection" (p. 25). Sometimes these challenges were met through accessing prior knowledge learned in formal education and modifying it for their current reality in parasport. Other times they were met through reflecting back on past sport experience or interacting with others in the coaching practice. Similar to the findings of Gilbert and Trudel (2001) the coaches were found to be highly creative in generating strategies that helped them solve the numerous issues they faced in parasport.

The coaches also engaged in reflection while actively interacting with others such as the athletes they coached and with peer coaches and other experts. In these types of discussions and subsequent reflections, the coaches began to both understand and change how they coached their athletes. These kinds of interactions have been shown to be a way of learning for coaches and recent research in parasport coaching suggests that reflection and collaboration with others can be a means of building a coaching practice (Burkett, 2013; Burkett & Mellifont, 2008; McMaster et al., 2012; Taylor et al., in press). This finding lends support to Boud's (2010) questioning of the individualistic view of learning associated with reflection and his suggestion that it is

important to also consider a view of “reflection within the context of settings which necessarily have more of a group or team-based work orientation” (p. 25). As well, as Moon suggests, taking part in critical reflection with other engaged learners, whether they are mentors or critical peers, can "upgrade" the learning process (Moon, 1999, 2004).

The coaching literature also suggests potential for social learning systems that engage other individuals involved in parasport coaches’ learning process (Burkett, 2013; Culver & Trudel, 2008a, 2008b; McMaster et al., 2012; Taylor, Werthner, & Culver, in press). The findings of the present study support this notion, but extend beyond simply engaging with these collaborators. The findings suggest that the timing of reflection, or taking the “before, during, and after approach” to reflecting on experiences collectively, allowed these parasport coaches to learn more deeply how to adapt their coaching practice to more effectively coach their parasport athletes.

Using the lens of Moon’s work in experiential learning and reflection, the findings also indicated that the timing of reflection enabled coaches to learn through their varied experiences. Each coach reported using reflection on a daily basis and in a wide variety of settings before, during, or after new experiences. In line with Dewey’s (1933) idea that reflection involves a consequence and an ordering, this before, during, and after reflection resulted in changes to the coaches’ practice. For example, as several of the coaches discussed issues with a physiotherapist, then reflected on those discussions, and then altered their training program as a result of both the interaction and the reflection, or the ‘reflective conversation’ (Schön, 1983). Importantly, in

relationship to Moon's (1999) proposed path of learning, the findings indicated that each of the four coaches were at the deeper learning stages of working with meaning and transformative learning. For example, the coaches regularly spoke of an approach of questioning and challenging the established literature and practices in coaching.

The coaches' issues were unique to their parasport coaching context and they made reference to a variety of examples for reflection-in-action (while completing a task in training or competition) or reflection-on-action (upon debriefing or after an experience, to critically evaluate how their intervention or strategy was received). This on-going process of reflection both during and after training and competition is consistent with Schön's work in professional development (1983, 1987) and work in coaching by Gilbert and Trudel (2001, 2005) and Werthner and Trudel (2009). It would also seem that accomplished parasport coaches such as those in this study, in order to meet the demands of the complex environments in which they practice, are indeed 'always thinking about' their coaching practice. Like the 15 Olympic coaches in Werthner and Trudel's (2009) study, this "willingness to critically reflect included a curiosity and a desire to be continually improving" (p. 442).

A final point of discussion is that all four of the coaches considered the process of taking part in the study to be an important catalyst for deeper contemplation and learning about oneself. It is worth taking note of some of the coaches' comments in this regard:

> You know this is like looking at my whole life here. I am thinking I would like to translate it into French and give it to my parents. You have me thinking so

> much. When you ask me questions about how I have learned and if I have reflected, sometimes it is very difficult because sometimes we don't think about the daily things. As a coach I analyze my athletes all the time and this is helping me to analyze myself (laughs). This can be part of my life's book I may write one day. (Jacques)

Another coach described how being a part of a study on her learning and reflection inspired her to take a deeper look at herself, as though through the eyes of another person:

> When you're caught up in your own thoughts on how and why you coach the way you do, or why you did a certain thing, it's tough to stay aware, or even objective, really. I try to do that every day, but these discussions with you took it to another level. Being part of this study made me take a step back from myself and really think about why or where I got to certain points in my coaching. It was a very useful process. (Rachel)

Each of the four coaches remarked that the research process also helped them to reflect more deeply and served as a type of "neutral third party", causing them to think further about the way they synthesize or deliberate, adding a unique dimension to their ongoing daily learning. The coaches also noted the practical implications that arose from their participation in the study: "When I know our interview is coming up, it helps me get organized. I really follow through on my session or seasonal planning, since I know I'll need to talk about it, and explain it!" (Rachel). Another coach noted: "I went back after our last interview and started organizing our next HP (high

performance) athlete session, with the ideas from my philosophy so clear in my mind" (Andrew). The above comments recall a recent study with women coaches and their learning (Callary et al., 2012) which found the women coaches commented on how learning emerged throughout the series of interviews as they took time to reflect on their lives in the space created between the interviews.

By sharing these stories of reflection, this study addresses a gap in the literature on reflection and the role it plays in parasport coach learning. It also begins to address the call in the literature for more relevant and applied examples of reflection in coach learning (Gallimore, Gilbert, & Nater, 2013; Knowles et al., 2014; Lee et al., 2009). These accounts can serve as a learning opportunity for coaches and coach educators.

Recommendations and Conclusion

Knowing when, where, and how parasport coaches use reflective practice when learning their craft helps provide suggestions for the development and understanding of the resources that would support parasport coaches' development of reflective skills. First, coaching program administrators should recognize both the individual and collective nature of learning and the importance of the timing and depth of reflection, particularly in such a unique context as parasport. Developers of coach education programs could work to provide coaches with the flexibility to learn individually and collectively. The very lack of parasport specific resources may be what has encouraged the creative approaches utilized by the coaches in the current study and it might be useful to reflect on how this latitude for discovery might be enhanced. While the coaches in the current study were relatively self-directed, studies have noted that a

facilitator and a variety of reflective approaches (e.g., reflective conversations, communities of practice, or recorded narratives) can greatly enhance the process of learning (Cassidy et al., 2006; Culver & Trudel, 2006; Knowles et al., 2014).

Coaching programs could engage facilitators to help coaches learn how to reflect. Indeed Trudel and Gilbert (2013) recommended that the development of expert coaches would be greatly enhanced by; " the settings in which coaches work must be re-engineered to include formal, regular and guided support to help coaches engage in reflective practice and critical reflection" (p. 22).

Second, while we commend the ingenuity of the coaches to address their own coaching gaps in this study, a better link between the sport science and parasport coaching communities should be made. Academics should strive to align themselves with coaches to assist in developing more informed and competent parasport coaches (Burkett, 2013).

Third, all four of the coaches in our study reported reflecting before, during and after interacting with important collaborators in their coaching practice, enhancing opportunities for reflective conversations on both sides. These coaching networks and sharing opportunities should be explored and supported.

The purpose of this study was to explore how four parasport coaches engaged in reflection to help them learn to coach in the parasport context. We cannot generalize the findings to all coaches in parasport. By selecting four experienced and exemplary parasport coaches, our results may not represent what might have occurred with inexperienced coaches just entering the field. However, by better understanding the

learning of these four coaches, the present study begins to create a new thread in the discussion of the role of reflection in the learning process of parasport coaches.

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CHAPTER 6: DISCUSSION AND CONCLUSION

Discussion

The key concepts of each article in this dissertation are as follows: (a) In the first article, one parasport coach shares his learning experiences that are linked to his approach to lifelong learning and building his coaching practice; (b) in the second article, the four parasport coaches shared how interactions and relationships influenced their learning in parasport coaching; and (c) in the third article, the four parasport coaches shared how reflection contributed to learning their craft and developing their coaching practice.

A key critique of coaching research has been a lack of understanding of what exactly the coaching process entails and the complexities of coaching practice (Jones & Wallace, 2005). Jones and Wallace, among others, echo Lyle's (2002) call to action for greater understanding of the wide array of coaching issues and contexts that must inform coach education and development: "No comprehensive framework currently exists which represents the complex reality within which coaches work and indicates how they can operate better within it. Small wonder that the subject has been open to accusations of theoretical imprecision, assumption and speculation" (Jones & Wallace, 2005; p. 123). Nowhere is this complex reality more obvious than in the unique context of parasport.

Scholars have suggested that perhaps the best strategy for coach learning and development is that research must take on a constructivist approach that begins with examining the social environment and the learner - the coach (Armour, 2010; Cushion et al., 2010; Stoszkowski & Collins, 2012; Werthner et al., 2012). It is for this reason a

constructivist approach was used in this dissertation to unearth findings that might inform the parasport coaching field in the future. The purpose of this dissertation was to explore the learning experiences of four full-time Canadian coaches who are dedicated to parasport and coaching athletes with disabilities. This purpose will be illuminated in this discussion through examining the various ways that four coaches of athletes with a disability have learned throughout their lives, examining the social learning systems in their parasport contexts, and revealing ways these coaches used reflection to assist in learning their vocation in parasport coaching. This discussion will close with a closer look at each specific coach case, illustrating some key findings that tie to the parasport context for each individual coach.

This dissertation draws on Jarvis' (2006) lifelong learning perspectives as a theoretical framework for exploring how coaches learn in the parasport context. Jarvis (2006, 2009) defines the concept of biography as having an important and central role in any discussion of human learning. Our biography is continually developing and it is who we are at any point in time and will determine what we choose to learn or whether or not a particular experience is meaningful.

Jarvis (2006, 2009) and other learning theorists situated in physical education (Gréhaigne, Caty, & Godbout, 2010; Light, 2008) point to the importance of looking at lifelong learning through a broader scope than just cognition or behaviourism. A more global constructivist approach, examining all the dimensions within a learner's life-world, is necessary for a process as profound and complex as human learning:

> The psychologist traces the arrows out from the person to the external, objectified culture, while the sociologist starts with the objectified culture and points inwards to the individual person. A person's learning must be seen from both perspectives! This leaves us with major problems about how we study learning. I would argue that we need to start with an understanding of the person - the learner - which is a philosophical perspective that has been sadly lacking from studies of learning, and, thereafter, begin to explore the psychological and the sociological aspects of the learning process in tandem (Jarvis, 2012, p. 19).

And so, for the purpose of this dissertation, this research started with the coach learner. Each coach's unique biography, the way they were raised, early family and school influences, experience in sport, early coaching, and their exposure to disability and diversity, seemed to have a profound influence on their preferences for learning and what they "chose to pay attention to." All four coaches chose to engage with collaborators who contributed in a meaningful way to their learning to coach in parasport and all four coaches engaged in regular reflection within their coaching practice as well as with others.

The emergence of both community and network aspects of parasport coach social learning systems in this dissertation reflects suggestions that these two aspects are complementary and dynamic and that these aspects may grow and evolve together depending on the learning needs of the members (Wenger et al., 2011). In addition to benefitting from interactions with a wide variety of experts, the four coaches in this study identified their own athletes as helping them learn. As none of the coaches

possessed a disability themselves, they all spoke of the importance of learning through interacting and observing their athletes, and how reflecting before, during and after these interactions enabled them to more deeply understand the nature of the various disabilities in order to design effective training and competition plans. This is in keeping with recent studies that have begun to explore coaching development in parasport (Cregan et. al., 2007; McMaster et al., 2012; O'Neill & Richardson, 2008; Tawse et al., 2012).

In addition, the identification and exploration of the importance of learning within a social context in this dissertation has key implications for sport organizations, as well as coach developers (Trudel, Culver, & Werthner, 2013; Werthner, Culver, & Trudel, 2012). It is crucial, when designing learning opportunities, to consider the current biography of a coach, as well as who they may already have as collaborators. Ideally, sport organizations should be flexible when offering resource persons to coaches or parasport programs rather than impose individuals who may or may not meet the needs of each individual coach.

All the coaches in this study reported spending time "thinking over" and "reflecting on" their everyday coaching actions and interactions. The depth and the timing of these reflections were two critical factors that influenced how they learned and progressed in their coaching practice. This is in keeping with Moon's hierarchal map of learning. The coaches in this study approached a wide variety of coaching issues, many of which were unique to parasport, with the questioning lens of "how could I use or adjust that in my parasport practice?" This illustrated a deep approach to

learning where restructuring, transformation, and creativity play an important role (Moon, 1999). By employing this reflection before, during, and after a variety of learning situations (interactions with others, actively coaching, attending courses or clinics), this finding complements Gilbert and Trudel's (2001) experiential learning model derived from exemplary youth coaches who engaged in three forms of reflective practice (reflection-in-action inside the action in the present; reflection-on-action outside the action in the present; and retrospective reflection-on-action outside the action present).

Mark's approach to learning in order to address the unique physiological and technical needs in performance parasport was multifaceted. In part, he drew from his long-standing commitment to formal or mediated education in both sport science and coach training (NCCP). He chose to focus on the technical and measurement aspects in exercise and coaching science, as he preferred to use a combination of empirical evidence and experimentation to solve coaching problems in his technical endurance sport. While many studies have been critical of the value of formal education in the development of successful coaches, this finding supports recent research that shows an important link for coaches to academic and formal coach training (Trudel et al., 2012; Werthner & Trudel, 2006, 2009). Mark combined this foundational knowledge with a pragmatic approach of trial and error alongside his exercise physiologist and others coaches and collaborators, and together they travelled new territory that was unique to each athlete in parasport. This approach echoes recommendations from researchers

working to create research with and for coaches' needs in parasport as part of a multidisciplinary team approach (Burkett, 2013; Burkett & Melifont, 2008).

Another key finding in Mark's learning was the initiative he took to better educate himself via various disability-specific training courses and clinics (e.g. adapted physical activity, Braille training, orientation training for guiding the visually impaired). This stands out in the literature, as the few studies on parasport coach learning and development identified benefits of understanding the disability of their athletes, but not all coaches spoke to ways they went out and addressed these gaps (Cregan et al., 2007; McMaster et al., 2012). Mark's ability to learn independently and to work with others led to preparing the groundwork for many of his athletes to move on successfully to the world stage at the Paralympic Games, as well as retaining a safe and challenging environment for athletes in his recreational and development program stream.

Rachel's approach to learning and addressing the social and communication challenges in her program for athletes with visual impairments was to use the skills she learned in program development early on in her career: positive life skills, confidence in leadership and coaching abilities (via her mentor coach, who encouraged her to undertake NCCP coach education), and her ongoing commitment to professional development and to creating a holistic athlete environment. This echoes other studies that have pointed to coaching confidence arising from participation in formal coach and vocational education early on in their careers (Leduc et al., 2012; Werthner et al., 2012). Faced with some challenging social dynamics she had not

experienced before in able-bodied sport, Rachel reflected back to positive coaching behaviours used by her coaches in her time as an athlete, her own first hand coaching experience in able-bodied sport, and some of the theory and discussions she had with her own program support team (her assistant coach and physiotherapist). This latter aspect also illustrates the importance and potential of social learning systems (Culver & Trudel, 2006, 2008; Wenger, 2011). Rachel felt strongly that her program would empower her athletes and supply them with the life skills she had also learned through sport, consistent with the literature on the transformative power of parasport (Pensgaard & Sorensen, 2002; Sorensen & Kahrs, 2006). Rachel's preference for teaching by example and using a strong leadership model for change meant she was successfully instilling the behaviours she wanted to see in her athletes, as she remained authentic to her values and coaching approach.

Jacques ran a parasport program that integrated athletes with higher levels of disability in a sport with a complex classification system and a large spectrum of ability profiles. Initially, his approach to learning how to meet his athletes' needs in their daily training environments was to draw on his national team athlete experience and early able-bodied coaching experience and combine this with learning from his university and long-term athlete development programs (LTAD). However, as he began to work with athletes with complex health and communication issues with which he was unfamiliar, he added a multidisciplinary approach to meeting the needs of his athletes in the lower disability classifications, using the expertise and collaboration of paramedical and sport science service providers in his program. This

is consistent with literature that suggests there is tremendous potential for social learning systems that engage key collaborators involved in the coaches' learning process (Burkett, 2013; Trudel & Culver, 2008a, 2008b; McMaster et al., 2012).

Andrew was coaching in a sport that was decentralized across Canada, with a wide spectrum of disability groups represented in his national program, resulting in what he described as a disconnect between regions and various advocacy groups. To meet the challenges of fully integrating, retaining, and funding his athletes and programs, Andrew learned to build relationships with other coaches in parasport who had similar challenges and shared his strategies and solutions with them in a social learning system. This finding differs from several studies in the able-bodied context where coaches are seen to be less open to sharing information, especially with other coaches, partly due to the competitive nature of sport (Culver & Trudel, 2006, 2008; Lemyre, Trudel, & Durand-Bush, 2007; Trudel & Gilbert, 2004). However, it is important to note that the coaches in this study collaborated primarily with coaches within their own program, or with coaches who coached other parasport disciplines and with whom they were not in direct competition.

Andrew also formed strategic alliances with all levels of regional and national disability and sport groups in order to solve some of the challenges that existed, in large part, due to poor communication or lack of a common purpose. Andrew sought out both mediated learning situations and unmediated opportunities in order to engage stakeholders who could help him meet his program goals: to provide a healthy, competitive and sustainable program across the abilities spectrum.

Limitations of the Study

The goal of multiple case studies is to better understand the particular phenomenon being studied. By better understanding the learning and social context of these reflective parasport coaches, the present study begins to fill a gap on the sparse literature on learning and parasport coaching. The coaches in this collective case study were open to sharing meaningful learning experiences throughout their lives and drew connections to the ways these experiences informed or influenced how they learned to coach in parasport.

Qualitative studies that rely on participant recollection, as well as a focus on the individual, have some inherent limitations. While the focus of this dissertation was undoubtedly on individual stories, it also took into account the social nature of learning and of coaching and every attempt was made to understand the unique context of parasport and the biographies (Jarvis, 2009) and evolving cognitive structures (Moon, 1999, 2004) of the coaches. While this study involved multiple coaches, each case was the life-world surrounding each coach, which included their past experiences and the individuals who collaborated with them. Using a design recommended by Polkinghorne (2005) that allowed for multiple interviews, observation to add to the researcher's understanding of the parasport training and competition context, and member-checking throughout, the researcher endeavoured to reflect an accurate portrait of each case, to the best of her ability.

The double-edged sword of a focus on the individual means that while depth of understanding and experience is valuable in its own right, and indeed essential in

qualitative case study research (Stake, 2005), it cannot necessarily be extrapolated to the greater population. In designing or informing coach education and opportunities for coach learning, this must be considered. What worked for these experienced and exemplary coaches in parasport may not be effective for a less experienced coach or coaches with vastly different biographies.

Great care must be taken when conducting research in a small yet connected community (Damianakis & Woodford, 2012). These authors suggest that the delicate balance of bringing forth the most vivid and important stories, while not having a negative effect on participants' life outside the study boundaries, can be a challenge. The four coaches in this study were actively coaching and working full-time in parasport and the researcher and the coaches were mindful of this tight knit community. This meant that while taking care to report some of the most important and clear examples of past life experiences and learning contexts, the work also involved some editing or filtering of information for ethical reasons, which may be a research limitation.

At times, as the researcher, I felt the "outside forces" that are referred to by Cox (2012) in her article on teaching qualitative methods to education researchers. She reminds us that the qualitative researcher is still working in a quantitative-driven world and the pull to add rigour and reflexivity is both necessary and challenging. I was cognisant that I must always be self-critical (e.g., examining my assumptions, bracketing, taking into account my personal biases), and yet, as a result, sometimes I felt shackled by checklists. As Barbour (2001) so eloquently denotes, the need to

ensure specific measures of rigour are undertaken in order to create sound research and to have an article published, and yet they can add an antiseptic or robotic nature to a study that is dealing with human nature.

Future Research

As this dissertation has helped reveal more about how these parasport coaches have learned to coach throughout their lifetime, future research could incorporate these findings. For example, as all four coaches cited the importance of learning from and with others within a social context, one direction might be to more deeply explore the reciprocal learning environment between key collaborators, such as the medical doctors, physiotherapists, athletes, and sport science professionals, and coaches. As well, more research is needed to better understand how to further nurture and grow the social learning systems that were integral to the learning process of these four exemplary coaches.

Due to the importance placed on primary learning experience ("first hand learning") in the learning literature, and given the four coaches spoke of the importance of interacting with and learning from their athletes, future research projects could explore learning from the athletes' perspective.

Conclusion

This dissertation study has both practical and theoretical implications for the future. From a theoretical perspective, it adds to our understanding about how coaches in parasport have learned throughout their life. From this exploration of the lives of these four parasport coaches, we can begin to better understand the various

experiences that influenced how and what they learned. Using Jarvis' theory of lifelong learning (2006, 2007, 2009), we begin to see the landscape of coach learning in parasport. Using Moon as a complementary generic view of learning (2004) and map of learning (1998), we move towards a deeper understanding of how coaches may use reflection to continue to learn.

The parasport coaches who participated in this study were generous with their time and opened up their training, competition and daily coaching environments to me. Throughout the process, it became clear that these coaches sought out a wide variety of learning environments and experiences that enriched their learning and their willingness to share - with key collaborators, as well as the researcher - was of value to these coaches living and learning in a social world. Jones, Morgan, and Harris (2012) write that this collaboration is key, and that "people learn through the active adaptation of their existing knowledge in response to their contextual experiences, and the subsequent sharing of that knowledge. Such experiences may be engagement with new knowledge, explicitly through theory or through shared discussion with others" (p. 312).

In addition to theoretical implications, there are practical considerations that would be of benefit to parasport coach educators and training initiatives. Recommendations include the following:

- Encourage youth or students to volunteer for positions in parasport coaching. By providing early exposure to parasport coaching, while providing learning support, it might allow parasport organizations to identify individuals who

have potential and motivation to work in the parasport context, addressing the shortage of quality coaches currently in the system.

- Provide coaches with opportunities for formal education that is applicable to parasport, while understanding that parasport will require the development of other learning situations given the myriad of disabilities and equipment needs.
- Provide coaches with opportunities for building their own social learning systems, with the support of their learning institutions or sport organizations.
- Create platforms for parasport coaches to interact freely through virtual opportunities (e-Learning or sharing websites), or regional or national opportunities such as conferences or clinics.
- Provide coaches with flexibility and personalized learning plans to maximize coaches' learning preferences, as studies have noted that a facilitator and a variety of reflective approaches (e.g., reflective conversations, communities of practice, or recorded narratives) can greatly enhance the process of learning.
- Provide more opportunities for coaches to share their stories (via research or other avenues) that can be shared back with them in order to facilitate further reflection.

These suggestions are in keeping with research that encourages constructivist and innovative individualized coach learning opportunities that begin by taking the learner's biography into account (Armour, 2010; Cushion et al., 2010; Werthner, Culver, & Trudel, 2012). Hopefully a combination of further research in coach

learning and the application of some of the recommendations above will have a positive impact on the parasport coaching field, as coaches are one of the pillars to a successful and positive sport experience in the parasport movement.

STATEMENT OF CONTRIBUTIONS OF COLLABORATORS

I would like to thank my supervisor, Dr. Penny Werthner, and my co-supervisor at the start of this journey, Dr. Pierre Trudel, for their effort and contribution to this dissertation. In this section, I will illustrate the authorship for this study.

I, Shaunna Taylor, wrote all parts of this dissertation. Penny Werthner edited every part of this dissertation – introduction, theoretical framework, literature review, methodology, results including the three articles, discussion, conclusion, and appendixes. Penny Werthner conducted the bracketing interview that I analyzed to determine my assumptions prior to conducting the research. I conducted all interviews with my participants and I transcribed every interview verbatim. Penny Werthner and Pierre Trudel collaborated with me on creating the semi-structured interview guides used for these interviews. My supervisor (Penny Werthner) reviewed the interview transcripts and helped me to develop further questions for the second and third interviews, and Dr. Diane Culver reviewed and co-authored the three research articles that made up the results section of this dissertation. Dr. Penny Werthner also helped me to further define the themes and important areas of focus for data analysis, and assisted in the restructuring of the emergent themes for each case.

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APPENDIXES

Appendix A

National Coaching Certification Program / Programme national de certification des entraîneurs

NCCP Coaching Resources for Coaching Athletes with a Disability

coach.ca

Description: this table depicts the current ***integrated*** or ***stand alone*** training and/or technical resources for coaches of athletes with a physical (and in some cases, intellectual) disability. This is a comprehensive list for all 67 NCCP sports. 26 NCCP sports are officially recognized by the International Paralympic Committee (IPC) and the Canadian Paralympic Committee (CPC), which are highlighted in yellow. Special Olympics specializes in programs for athletes with an intellectual disability, and resources or partnership sport programs go in the non-Paralympic column.

Sport Name	Integrated AWAD resources in general stream (Paralympic)	Stand alone or Pro-D module	Integrated AWAD resources in general stream (non-Paralympic)	Under development	No development	Not applicable
Alpine Ski		X				
Archery						
Athletics	X	X				
Badminton					X	
Baseball						
Basketball (AB)						
Bobsleigh Skeleton						N/A
Boccia (W/C) CP Sports	X - independent NSO & program					
Boxing						N/A
Bowling (5 Pin)			X	x		
Bowling (10 Pin)			X	x		
Bowls (Lawn)			X	x		
Biathlon	X – Para-Nordic (Cross Country)					
BlindSports (Goalball)	X - independent NSO & Program					
Broomball					X	
Canoe / Kayak		X				
Cricket						
Cross Country Skiing		X				
Curling			X	X		
Cycling				X		
Deaf Sports					X or unknown	
Diving						N/A
Equestrian		X	X			
Fencing					X	
Field Hockey				X		
Figure Skating					X	
Football						
Golf		X				

Gymnastics						
Handball – 4 wall						
Hockey - Sledge				X		
Judo					X	
Karate				X		
Luge						N/A
Nordic Combined						N/A
Orienteering			X			
Parachuting						
Racquetball						
Ringette					X	
Rowing						
Rugby (stand up)						N/A
Sailing		X		X		
Shooting						
Softball					X	
Ski Jumping						N/A
Soccer						
Snowboarding	X					
Special Olympics						
Speed Skating						
Squash					X	
Swimming		X		x		
Synchronized Swimming			X			
Table Tennis					X	
Taekwondo				X		
Team Handball						
Tennis	X	X				
Triathlon		X				
Ultimate						N/A
Volleyball						
Water Polo					X	
Water Ski Wakeboard		X	X			
Weightlifting IPC= Powerlifting						N/A
Wheelchair Basketball	**X - independent NSO & program**					
Wheelchair Rugby	**X - independent NSO & program**					
Wrestling						N/A

Appendix B

Table 1.

Biographical information on coach participants' learning situations.

Coach Name	Athlete Experience	Academic Education	Coaching Education	Years Coaching Able-Bodied	Years Coaching Para Sport	Paid or volunteer Full or Part Time	Additional learning experiences or technical training
Coach Mark	Provincial level	University BA Kinesiology	Level 3 NCCP for 3 sports	10 yrs	11yrs	Paid Para & Able-Bodied; Full Time	- Grade I Braille instructor - Orientation ability certified - Welder / metalworking - Adaptive physical education - Technical classifier training
Coach Rachel	National level	College (Rec. Admin); 2 yrs, BA Kinesiology	Levels 1-3 for Speed Skating	22yrs	10 yrs	Paid; Full Time	- Recreation programming certificate - Leadership camp director - Facilities management
Coach Jacques	National level	University Physical Education	Level 3 NCCP	24yrs	9 yrs	Paid; Full Time	- Sport club administration - Provincial Federation leader - Long-term athlete development (LTAD) working group member and training
Coach Andrew	Provincial and Varsity Level	University MA Sport Administration	Level 4 NCCP	4yrs	10 yrs	Paid; Full Time	- Assistant university coach - Sport event coordinator - Facilities management

Appendix C

Table 2

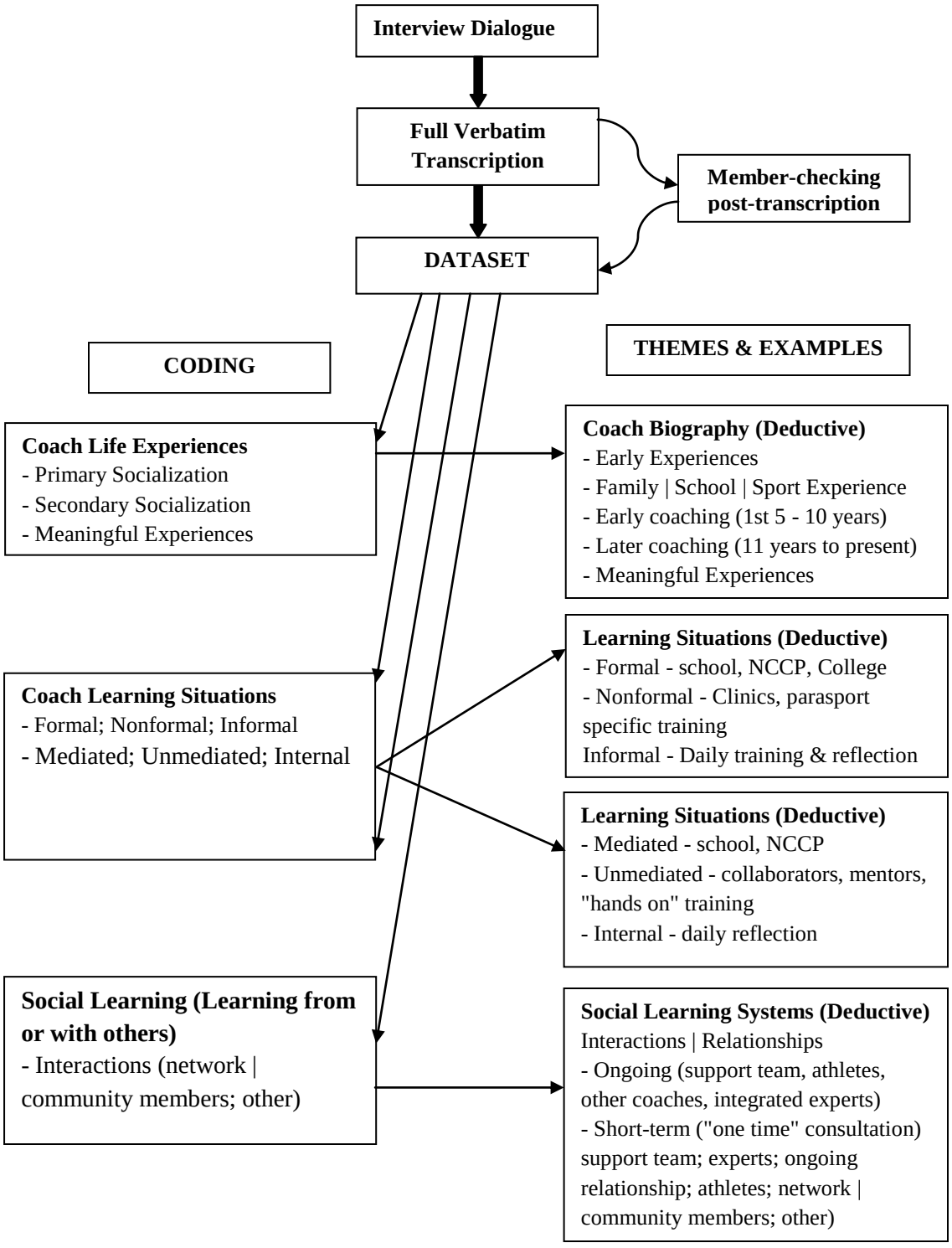
Phases of thematic analysis (Braun & Clarke, 2006)

Phase	Description of the process
1. Familiarizing yourself with your data:	Transcribing data (if necessary), reading and re-reading the data, noting down initial ideas.
2. Generating initial codes:	Coding interesting features of the data in a systematic fashion across the entire data set, collating data relevant to each code.
3. Searching for themes:	Collating codes into potential themes, gathering all data relevant to each potential theme.
4. Reviewing themes:	Checking if the themes work in relation to the coded extracts (Level 1) and the entire data set (Level 2), generating a thematic 'map' of the analysis.
5. Defining and naming themes:	Ongoing analysis to refine the specifics of each theme, and the overall story the analysis tells, generating clear definitions and names for each theme
6. Producing the report:	The final opportunity for analysis. Selection of vivid, compelling extract examples, final analysis of selected extracts, relating back of the analysis to the research question and literature, producing a scholarly report of the analysis.

Appendix D

Diagram demonstrating how themes were derived from coded data for Coach Biography, Learning Situations, and Social Learning Systems. Arrows represent data flow from dialogue to transcription to data set, through codes and themes.

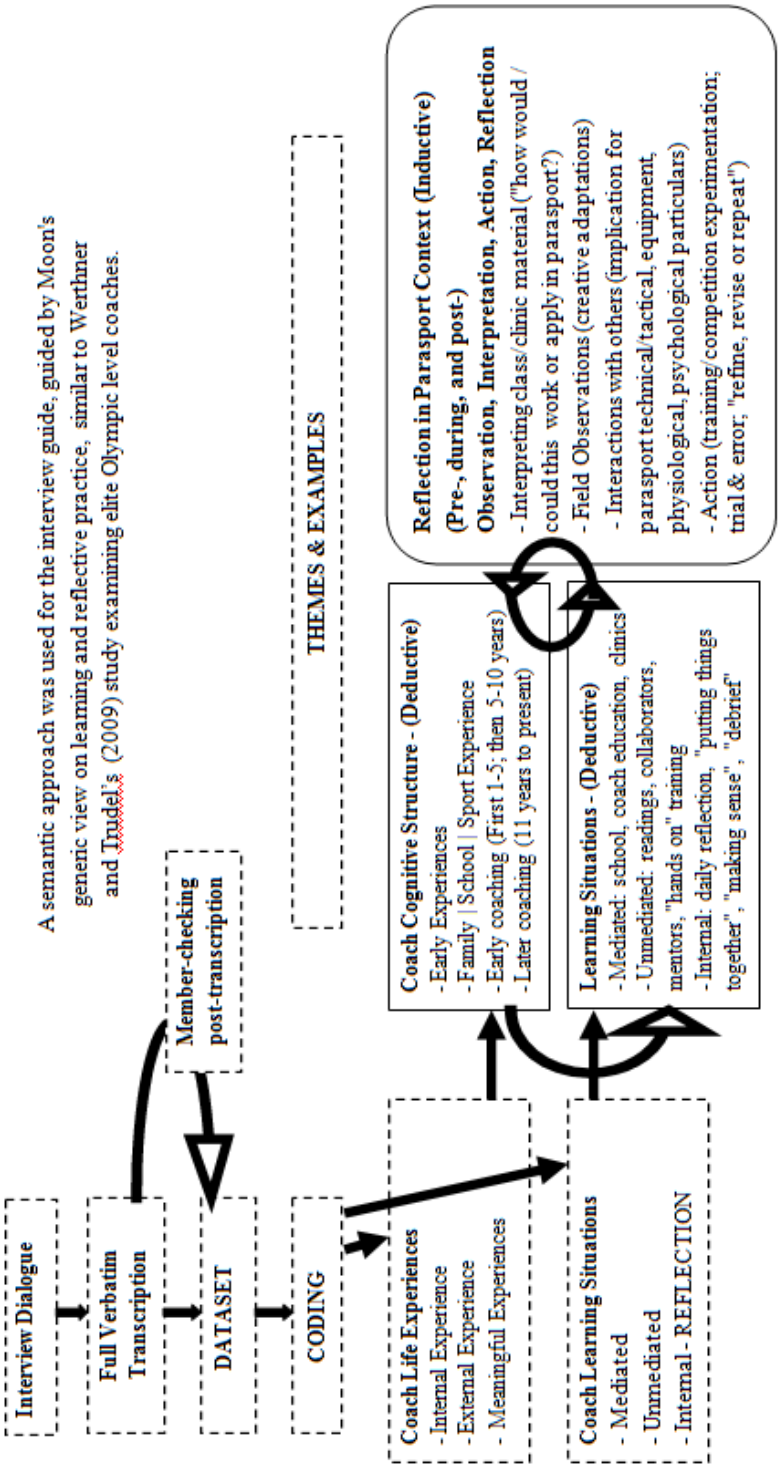
Using Moon and Jarvis as theoretical frameworks for the interview guide, I used a semantic approach similar to Werthner and Trudel's (2009) study examining elite Olympic level coaches.



Lifelong Learning | Reflective Practice **Jarvis, 2006 (lifelong learning) | Moon, 2004 (reflective practice)**	
Conceptual framework element Coded for:	Definition | Examples
Biography | Cognitive Structure (early childhood and school-aged experiences) (Coded for childhood; adolescence; early coaching experiences (first 5 – 10 years; later coaching experiences to present)	
A) Primary Socialization:	Early childhood experiences Family environment Initial interactions with family or caregivers
B) Secondary Socialization:	School-aged experiences Sport experiences Socialization through specific roles and relationships Media Sport and school groups
Learning situations - Formal, Non-formal, Informal **(Jarvis, 2006)**	
A) Formal	Formal (coaching courses; university, college, etc.)
B) Non-formal	Non-formal (intentional on the learner's part)
C) Informal	Informal ("experiential learning" or daily life learning)
Mediated, Unmediated and Internal learning situations **(Moon, 2004)**	
D) Mediated (Moon):	Externally driven by someone other than coach/learner (e.g., mandated coaching program)
E) Unmediated (Moon):	Internally driven by the coach/learner (e.g., coach seeks out mentor; other coaches)
F) Internal (Moon):	Periods of internal reflection
Social Learning Systems (SLS)	
Learning in social setting through interactions and relationships (network and community aspects)	Characteristics of network and community aspects in SLSs - Short-term and/or "one time" consultations with others - Ongoing relationships with others (e.g., IST members) (e.g., roles; reciprocity; mutual engagement; individual or shared goals; frequency of interactions)

Appendix E

Diagram reflecting how themes were derived in reflective practice



Appendix F

Reflexive Bracketing (Ahern, 1999)

1. **Identify some of the interests that, as a researcher, you might take for granted in undertaking this research.** This might include issues such as gaining access or obtaining a degree. Write down your personal issues in undertaking this research, the taken-for-granted assumptions associated with your gender, race, socioeconomic status, and the political milieu of your research. Finally, consider where the power is held in relation to your research project and where you belong in the power hierarchy.

2. Clarify your personal value systems and acknowledge areas in which you know you are subjective. These are issues to which you need to keep referring back when analyzing your data. This is an important strategy in developing a critical perspective through continuous self-evaluation (Hanson, 1994).

3. Describe possible areas of potential role conflict. Are there particular types of people and/or situations in which you feel anxious, annoyed, at ease? Is the publication of your findings likely to cause problems with a group of people? Consider how this possibly could influence whom you approach or how you approach them. Make a mental note to recognize when anxiety, annoyance, or enjoyment arise in you during data collection and analysis.

4. Identify gatekeepers' interests and consider the extent to which they are disposed favorably toward the project (Hanson, 1994). This can help you prevent potential role conflicts. The less conflict and anxiety you experience with regard to your research, the easier it is to maintain neutrality. Once you have started fieldwork, try to become attuned to the way in which your feelings are signaling a need for reflexive thought.

5. Recognize feelings that could indicate a lack of neutrality. These include avoiding situations in which you might experience negative feelings, seeking out situations in which you will experience positive feelings (such as friendly and articulate respondents), feeling guilty about some of your feelings, blaming others for your feelings, and feeling disengaged or aloof (Paterson & Groening, 1996). When you recognize feelings such as these, revisit your notes in your reflexive journal and try to determine the origins of these feelings. This will help you gain insight and separate your reactions from past events and your present research. If you cannot identify the origins of your feelings, you might need to consult with a colleague to ensure that your data collection and analysis techniques have not been colored by your feelings.

6. Is anything new or surprising in your data collection or analysis? If not, is this cause for concern, or is it an indication of saturation? On occasion, stand back and ask yourself if you are "going native." Consult colleagues before you assume that you have reached saturation in your data analysis. You might be bored, blocked, or desensitized.

7.When blocks occur in the research process, reframe them. Instead of getting frustrated when things do not go as planned, ask yourself, "Are there any methodical problems that can be transformed into opportunities?" For example, is there another group of people who can shed light on this phenomenon? Would an additional form of data collection, such as document analysis or diaries, give a greater insight? Often, blocks that occur in research can turn out to be blessings in disguise.

POSTANALYSIS

8. Even when you have completed your analysis, reflect on how you write up your account. Are you quoting more from one respondent than another? If you are, ask yourself why. Do you agree with one person's sentiment or turn of phrase more than those of another? If so, go back to your analysis and check that an articulate respondent has not biased your analysis by virtue of making your analytic task easier. Did you choose to write up the account in the first or third person? Why?

9. In qualitative research, the substantive literature review often comes after the analysis. The form of research literature is just as much the result of convention as any other cultural artifact (Porter, 1993). Consider whether the supporting evidence in the literature really is supporting your analysis or if it is just expressing the same cultural background as yourself.

FEEDBACK

10. A significant aspect of resolving bias is the acknowledgment of its outcomes (Paterson & Groening, 1996). Therefore, you might have to re-interview a respondent or reanalyze the transcript once you have recognized that bias in data collection or analysis is a possibility in a specific situation. It is also worth remembering that even if preconceptions and biases are acknowledged, they are not always easily abandoned (Davies & Janosick, 1991). An indication of resistance to abandoning bias includes consistently overlooking data concerning a different analytical conclusion than the one you have drawn (Paterson & Groening, 1996). Discussion with a co-coder should counteract this analytic blindness.

Appendix G

uOttawa

Université d'Ottawa
Faculté des sciences de la santé
École des sciences de l'activité physique
University of Ottawa
Faculty of Health Sciences
School of Human Kinetics

Consent Form :Coaches

Title of the study: Coaches of athletes with a physical disability: Who are these coaches and how do they develop their knowledge?

Name of researcher: Diane Culver, Ph.D.
Institution: University of Ottawa
Faculty of Health Sciences
School of Human Kinetics
Telephone number:
E-mail address:

I am invited to participate in the abovementioned research study conducted by Dr. Diane Culver at the University of Ottawa. The purpose of the study is to discover how coaches of athletes with a physical disability learn to coach. Eventually, the data from project will inform the development of an intervention to provide learning situations that are appropriate for the working context of these coaches.

My participation will consist essentially of participating in an interview lasting between 60 and 120 minutes with the possibility of a second shorter interview (20 to 30 minutes) should questions arise following the analysis of the first interview. I am aware that both of these interviews will be audio recorded. The interviews will be conducted at a location that is convenient for me. If the distance is too great, the interview will be conducted over the telephone. Also, I agree to be contacted by the researchers to have them observe me while I am coaching. The purpose of this observation is to allow the researchers to become more familiar with my coaching context, and to use events to begin conversations about learning, and provide clues that can be used in tracking down implicit learning.

YES
NO

I understand that my participation in this study will entail that I volunteer personal information, and this may cause me to feel some emotional or psychological discomfort. I have received assurance from the researcher that every effort will be made to minimize these risks and that the questions are only related to my work as a coach. My participation in this research might make me more conscious of the learning situations that I have or might have.

I understand that the information that I will share will remain strictly confidential. I understand that the contents will be used only for the analysis of the learning situations of coaches and to formulate an intervention with the goal of offering learning situations that are appropriate to my working

context, and that my confidentiality will be protected in the following manner: A pseudonym will be used in place of my name in the transcription and I understand that only the research team will have access to the codes. The recorded data and written data will be kept at the University of Ottawa in Dr. Culver's locked office or laboratory on password protected computers and will be kept for five years. At the end of the five years all the data will be deleted or destroyed. My transcripts will be sent to me via email and I will have the opportunity to review and comment on them. I understand that the transcripts sent via email will be subject to the everyday risks associated with this type of communication, such as other individuals gaining unauthorized access to my email account and reading my transcripts.

My participation in this research is voluntary and I am free to withdraw or refuse to answer any questions at any time and without any negative consequences.

If I chose to withdraw from the study, I give my permission for the researchers to analyze the data related to me collected up until that moment.

YES
NO

I will have the opportunity to re-examine and modify, if necessary, the information that I have given.

I, _____, agree to participate in the research conducted by Dr. Diane Culver, of the School of Human Kinetics from the Faculty of Health Sciences at the University of Ottawa.

If I have any questions about the study, I may contact the researcher.

There are two copies of the consent form, one of which is mine to keep.

Participant's signature: _____

Researcher's signature: _____

Date: _____