

**Exploring the Experiences of Coaching Children with Autism Spectrum Disorder in
Canadian Aquatic Programs**

Erin Kraft

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Faculty of Education
University of Ottawa

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Abstract

Teaching children how to swim provides them with the necessary skills to maintain a physically active lifestyle. Many children with an Autism Spectrum Disorder (ASD) diagnosis have shown interest in participating in swimming lessons. Studies have demonstrated that teaching students with ASD how to swim has aided in their motor performance (Yanardag, Nurgil, & Akmanoglu, 2013), their ability to initiate social interactions with peers (Chu & Pan, 2012) and a reduction in stereotypical behaviours associated with ASD (Vonder Hulls, Walker, & Powell, 2006). In order to meet the needs of this unique group of students, swim instructors take part in a variety of training programs amongst other experiences to effectively prepare themselves to teach their students with ASD. This study consists of three individual case studies designed to examine the journeys that swim instructors have taken in order to effectively coach students with ASD how to swim, along with encouraging motor skill development, social interactions and reducing stereotypical behaviours. Two research questions guide this study: What are the experiences of swim instructors who work with children with ASD? What are the practical teaching strategies in swimming lessons that are effective for social skill development, reducing stereotypical behaviours and motor skill development in children with ASD?

The findings of this study which focus on strategies of effective practice include: gestural communication, positive practice, contact communication, complexities of choice, and encouraging independence and confidence. Along with these findings, the instructors credit the following sources for their construction of knowledge: peer learning and mentorship, parental/caregiver support, and the value of certification and training. It is clear that instructors access a number of sources for their coaching development, but current swim instructor certification programs require revisions to increase instructor preparedness. This study contributes to current literature which focuses on coaching individuals with developmental disabilities. The findings may provide coaches with insight into strategies of effective practice for a more inclusive and equitable community.

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Chapter 1: Introduction

To prepare a lesson that succeeds to empower a child with Autism Spectrum Disorder (ASD), it is essential to adjust the lesson to meet their needs (Duquette, 2013). Unfortunately, with respect to lessons that involve physical activity, many parents report a low number of trained personnel available to facilitate and implement accommodations for children with ASD. This poses a challenge when attempting to keep their children engaged in sport-related activities (Mische-Lawson, Cox, & Foster, 2013). Children with ASD are usually at a higher risk for limited opportunities to participate in physical activities, as there is often a lack of available programming to accommodate children with special needs (King, Lawm, King, Rosenbaum, Kertoy, & Young, 2003). Physical activity is important for children because it encourages health and fitness and aids with the prevention of future conditions such as obesity (Fragala-Pinkham, Haley, & O'Neil, 2011). According to Hassan, McConkey & Dowling (2014), *the United Nations Convention on the Rights of Persons with Disabilities (CRPD)*, persons with disabilities have the right to partake in sport related activities on an equivalent basis to their peers.

Aquatic lessons* in particular are an optimal form of physical activity when trained instructors are available (Lee & Porretta, 2013). Water is an essential part of everyday life and plays an important role in a child's development. Children with ASD are often over or under-aroused by typical sensory stimulation (Dempsey & Foreman, 2001), which may affect their ability to remain focused on a task at hand (Roberts, 2004). However, the stimulation that water provides to students with ASD has been shown to produce a number of positive benefits, which highly supports the involvement of children with ASD in swimming lessons. Children with ASD who

* Lessons are the aquatic activity that will be referenced throughout this research

participate in aquatic activities have an increased ability to initiate social interactions with their peers (Chu & Pan, 2012), exhibit a reduction in stereotypical behaviours (Vonder Hulls, Walker, & Powell, 2006), and improve their motor performance (Yanardag, Nurgil, & Akmanoglu, 2013). The purpose of this study is to examine the experiences of swim instructors in their journeys to learn and execute effective strategies for coaching students with ASD. An emphasis is placed on strategies which increase swimmers' abilities to initiate social interactions, reduce stereotypical behaviours and improve motor performance.

Research Motivation

In this section, I will discuss my personal experiences working with students with disabilities in the aquatic community, as well as other pertinent life journeys. This will provide insight into my motivation to conduct this study.

Teaching children with ASD how to swim has become a passion of mine. I have witnessed the benefits that this recreational activity can have on a child's well-being, and its influence on their quality of life. My eight years of experience swim instructing a diverse group of students, including many students with ASD, has allowed me to gain the knowledge and understanding to conduct this study. I have completed The Canadian Red Cross swim instructor program, as well as the Life Saving Society Instructor program in the past. I am familiar with effective swim instructing strategies that foster the development of appropriate swimming skills in an aquatic lesson. I have also worked in supervisory roles in aquatic settings, which has further developed my awareness of how to facilitate a safe and effective swimming lesson. My supervisory roles have increased my interactions with the parents/caregivers of students, which has deepened my understanding of the expectations that parents/caregivers have for their child's development.

Upon the completion of my Bachelor of Education, I attended numerous workshops and conferences about developmental and intellectual disabilities. I have also completed a Special Education additional qualification, to continue my professional development and further my knowledge about ASD. In support of my ongoing commitment to learning, I began a new role in the summer of 2015 as the coordinator of a special needs program at a Toronto-based camp. These experiences reinforce my drive to conduct a study on the strategies of effective practices for coaching students with ASD.

The purpose of this study is to identify the swim instructing strategies that experienced instructors have acquired through their training, as well as strategies they have constructed through personal experience to ensure that the needs of students with ASD are met. This study will create a knowledge base of effective practices for teaching students with ASD from the viewpoint of swim instructors. A comparative analysis of Canadian Red Cross and Life Saving Society documents associated with instructor certification programs will also be analyzed to determine the common and divergent themes in these documents.

The results of this study are meant to be shared with instructors in the community to ensure they have strategies of effective practice for teaching their students with ASD. The swim coach participants in this research will receive a copy of the findings to use towards their future swim instructing lessons and to share with their peers. I recently made a contact with an individual who is part of a board for the Canadian Red Cross. I will share the strategies from this study with her in the hopes that they will be integrated into training programs and resources to prepare new swim instructors. A presentation of this study has been accepted for presentation at the 2016 Petro-Canada Sport Leadership Sportif Conference. This conference is widely attended by coaches across the nation, which would further provide opportunity to disseminate these

findings. As a result, instructors will have access to this knowledge so that they can confidently coach. The distribution of these strategies will influence the quality and the level of safety in lessons being taught to students with ASD.

Description of Problem

In this section, I will touch on issues surrounding the involvement of students with ASD in current aquatic programs, as well as the quality of training being provided to swim instructors who teach this specific population.

Autism Spectrum Disorder has become an increasingly diagnosed condition over the past twenty years (Keyes, Susser, Cheslack-Postava, Fountain, & Bearman, 2012). In the context of swimming lessons, there is evidence of various training programs that are undergoing adaptations to meet the needs of this growing, often marginalized community. A Montreal-based swimming program by the name of the *Aquatic Nursery Program* has been developed to meet the needs of children with ASD in swimming lessons at the pre-school age (Prupas, Harvey, & Benjamin, 2006). There are also programs being developed for specific locations and aquatic facilities such as recreation centres, in order to better prepare their staff to appropriately teach students with ASD (Jull, 2012). Although these initiatives have been proven to be effective, there is often an emphasis on the evaluation of programs for pre-school aged students (Cross, 2011), or studies that focus on specific facilities.

However, The Canadian Red Cross and Life Saving Society have developed swim instructing programs that have been widely utilized by a number of facilities across Canada and are geared towards all age groups. The Canadian Red Cross approach provides their staff with access to online documents (*Red Cross Learn-To-Swim for Swimmers With Disabilities: Teaching People with Developmental Disabilities* and *Water Safety Instructor Resource: Learn-to-Swim for*

swimmers with disabilities) that present methods for teaching children with special needs, as well as providing information specifically geared towards teaching students with ASD (Canadian Red Cross, 2014).

The Life Saving Society has an additional program titled the *Inclusion Clinic*, which prepares instructors to create an inclusive environment for students with a variety of levels of performance. Programs such as these are necessary as coaches (coaches and instructors will be used interchangeably throughout this research) are expected to be inclusive of all students in their lessons, but are often not adequately trained on the strategies that are most successful (Hammond, Young, & Konjarski, 2014). This study will retrieve accounts from the experiences of swim instructors who have participated in The Canadian Red Cross training program or Life Saving Society Instructor training. These instructors will have the opportunity to discuss the strategies they deem most effective for teaching students with ASD and whether they have developed these strategies through their training, teaching experiences or other personal experiences. Preparing a repertoire of strategies of effective practice for instructors, would decrease the need for instructors to engage in a period of trial and error before acquiring effective strategies for creating inclusive lessons. A more comprehensive understanding of the influences that shape instructors development of successful swimming lessons is therefore important for discovering the strategies of effective practice.

A prevalent concern in coaching individuals with disabilities is a lack of appropriate training which limits the physical activities available to individuals with special needs (Smith & Sparks, 2012). This research enriches the repertoire of teaching methods and strategies available to aquatic coaches with the hopes of increasing the number of adequately trained personnel to teach

swimmers with ASD and thereby increase the opportunities of these students to safely participate in physical activity.

Focus of Study

In this study, the effectiveness of swim instruction strategies will focus on three elements: the enhancement of students' social skills, reductions in stereotypical behaviours and increased motor performance. Each of these three elements are described below along with an explanation as to why they are important for improving the quality of life for children with ASD.

Children with ASD often have a different understanding of appropriate social interactions when compare to those deemed meaningful by their peers. Children with ASD have difficulty decoding their peers' social cues and act on these misinterpretations (Webb, Miller, Pierce, Strawser, & Jones, 2004). On the other hand, when successful interactions occur, it reflects mutual understanding for both the child with ASD and their peers. These interactions may include engaging in games or activities that demonstrate successful communication, similar to those of typically developing peers.

As a result of sensory processing difficulties, children with ASD often display stereotypical behaviours such as flapping their arms and rocking (Joosten & Bundy, 2010). These behaviours are often repetitive and may lead to social isolation because it separates children with ASD from their peers. Reductions in stereotypical behaviours are counterbalanced with on-task behaviours in activities. When children with ASD are able to participate in activities which reduce stereotypical behaviours, it increases their opportunities to have positive interactions and effectively communicate with their peers.

The main goals of swimming lessons aim to increase students' motor performance within an aquatic setting, as well as to gain water safety knowledge. Students with ASD will have similar

motor enhancement expectations to those of their typically developing peers. Improvements in motor performance may include stronger endurance and greater range in physical motion when demonstrating appropriate stroke techniques.

Research Questions

In this section, I will describe the main research questions and sub-questions which will guide this research.

Although The Canadian Red Cross approach and Life Saving Society are often used for instructor training purposes across Canada, a search of numerous online journals, conference presentations, curriculum documents and educational texts failed to identify current studies of the experiences of trained swim instructors of students with ASD. This shortfall is especially notable in the context of elementary and high school age children. As discussed above, there is evidence that teaching children with ASD how to swim can produce a number of positive benefits and enhance their quality of life. Stephanie Jull, a PhD student at the University of British Columbia who completed her dissertation in 2012, developed an instructor training program which focused on meeting the needs of students with ASD and tested the program with six swim instructors. Jull's training consisted of a workshop and in-pool coaching program which proposed specific tools for teaching children with ASD that were rooted in literature. She mentions in her future research section, that there is a need to develop a "manualized training package" (Jull, 2002, p.140), in order to disseminate this program to multiple recreational facilities. To my knowledge, Jull's training was developed exclusively for her study and has not been disseminated at this point. The findings of her study indicated "...gains for the majority of instructors and children immediately following the training" (Jull, 2012, p.ii). She suggests that a similar study be conducted with other training programs and with more instructors. My study will aim to fill this gap by examining the influence that nationwide training programs have on the quality of lessons developed by instructors.

The Canadian Red Cross approach and Life Saving Society follow common criteria in the training of staff who work with individuals with ASD. For example, placing an emphasis on follow-up training (Jahr, 1998), as well as in-service and coaching-on-the-job training (Van Oorsouw, Embregts, Bosman, & Jahoda, 2009) are explicitly included. However, The Canadian Red Cross approach and Life Saving Society propose few practical strategies for swim instructors to apply in their swimming classes. They fall short in directing instructors to access information for teaching students with ASD. It is imperative that swim instructors acquire these skills and this study will delve into the experiences of three swim instructors along their journey to becoming confident teaching their students with ASD.

Two research questions guide this study: 1) What are the experiences of swim instructors who work with children with ASD? and 2) What practical teaching strategies in swimming lessons are effective for social skill development, reducing stereotypical behaviours and motor skill development in children with ASD? Sub-questions to further nuance the two main research questions are: How do swim instructors acquire knowledge to effectively teach students with ASD? and How do instructors become confident in their abilities to meet the needs of their students?

Chapter 2: Review of Literature

In this section, I describe current and relevant literature on aquatics with children with disabilities in physical activity programs. Literature in this chapter will have a specific focus on motor skills, social interactions and the behaviours associated with children with ASD.

I have consulted a variety of texts that discuss recent studies which focus on strategies that have proven to be effective in enhancing communication, reducing stereotypical behaviours and improving motor development for children with ASD. These sources touch on the positive effects that swimming and appropriate intervention have had on children with ASD, along with difficulties associated with finding suitable programming for this population of children.

Communication

To inform this section of my literature review, twenty two journal articles published between the years 2000 and 2012 were reviewed. I also examined texts from the National Research Council in Washington (2003), and the 2015 IASSIDD (International Association for the Scientific Study of Intellectual and Developmental Disabilities) conference proceedings in Hawaii, and documents from The Canadian Red Cross website published in 2014.

In order to foster the development of a child's social skills, it is important that the child learns effective and appropriate communication strategies. All children with ASD have some form of a communicative deficit that contributes to difficulties in interactions (Magiati & Howlin, 2003). Many children with ASD may also not develop speech, making an alternate system of communication a necessity for communicating with others (Noens & Van Berckelaer-Onnes, 2005). Along with verbal communication, children with ASD often have trouble understanding certain gestures, as well as abstract concepts. This creates further challenges in their ability to

communicate in a meaningful way (Panerai, Ferrante, & Zingale, 2002). A number of communicative tools have been developed for children with ASD (as well as other disabilities) which fall under the umbrella term of Augmentative Alternative Communication (AAC) systems. AAC include strategies such as sign language and the Picture Exchange Communication System (PECS) (Ganz & Simpson, 2004). It is important that children with ASD use an effective symbolic communication system (Lord & McGee, 2003) and PECS has proven to be an appropriate system to help many children with disabilities in their communicative skills (Canadian Red Cross, 2014). PECS is a non-verbal communication system which supports the development of meaningful communication (Bondy & Frost, 2001); it is a naturalistic form of communication for children with ASD that does not necessarily require prompts from an adult (Kravits, Kamps, Kemmerer, & Potucek, 2002). PECS may aid in the reduction of negative behaviours (Charlop-Christy, Carpenter, Le, Leblanc, & Kellet, 2002), as well as, accompany the development of speech. With the communicative enhancement that PECS encourages, there is an improvement in social interactions of children with ASD, when this system is utilized (Kravitz et al., 2002).

The implementation of PECS into a swimming lesson is also effective when used as a visual tool for schedules because swimmers with ASD thrive in routine activities. Therefore, displaying the order of activities in each lesson will improve students' abilities to understand the schedule and the transitions between activities (Bryan & Gast, 2000). It is crucial to note, however that PECS may not work for every student and a more personalized form of communication may be required (Palmer, 2015). The instructor must be aware of the needs of the student and adjust their language and communication accordingly (Iacono, 2015). With the appropriate use of

communicative systems and language, swim instructors have the tools to assist with the development of their students' abilities to communicate and socialize with their peers.

Social Skills and Interactions

When children with ASD interact with their peers, it is often an unsuccessful attempt (Attwood, 2000). Given the fact that social difficulties is an important aspect of ASD (Rogers, 2000), children often have difficulty establishing relationships because of their hindered development of social skills (Webb et al., 2004). The ability of a child with ASD to interpret behaviours differs when compared to their typically developing peers (Sowa & Meulenbroek, 2012). This is often the reason that children with ASD have fewer friends and are more frequently bullied by their peers (MacKay, Knott, & Dunlop, 2007). Interventions do exist that reinforce social interactions, and there is evidence that an aquatic setting may further support these interventions. This has been shown to be especially true when the student's peers are trained to mentor a child with special needs (Chu et al., 2012).

Typically developing children are often more interested in participating in social interactions with their peers that do not have ASD, however when children with ASD are provided with appropriate prompting for social engagement, their peers are more accepting of the interaction (DiSalvo & Donald, 2002). Positive reinforcement of social interactions between peers is an example of an effective way to encourage appropriate social interaction for a child with ASD. By including peers in the intervention of children with ASD, students are exercising their social skills (Kamps, Royer, Dugan, Kravitz, Gonzalez-Lopez, Garcia, Carnazzo, Morrison, & Kane, 2002). Although training students to interact with their peers with ASD will improve initial social interactions, it may eventually reduce unplanned interactions between peers who have not been trained (Whitaker, 2004). For this reason, it is important that adult prompts be limited, as

highly controlled settings often create limited positive results in children with ASD (Weiss & Harris, 2001). Typically developing children have shown that they do not need constant adult prompting in their interactions (Zercher, Hunt, Schuler, & Webster, 2001). Another effective strategy to boost social interactions is a focusing on a strong interest that a child with ASD may have and facilitating some sort of activity around it (Rogers, 2000).

There is a need for practical teaching strategies, such as those mentioned above, to be integrated into swimming lessons. This study aims to document effective strategies that may be adopted in future swim instructing training programs. The information presented here will help new swim instructors to successfully teach students with ASD how to swim, while encouraging the development of lifelong social skills.

Reducing Stereotypical Behaviours

Often recreational sports or community-based programs are rather competitive and not practical for children with ASD (Fragala-Pinkham et al., 2011) making it a challenge for parents to keep their children involved in activities with their peers. However, swimming lessons and aquatic activities have been deemed an optimal form of physical activity for students with ASD. The properties of water, such as buoyancy, provides a positive sensory stimulation for students with ASD. This creates an appropriate space for this population of children to engage in physical activity (Prupas et al., 2006). The natural effects that swimming has on students, such as a reduction in stereotypical behaviours (Vonder Hulls et al., 2006), is another alluring quality for parents and caregivers. Parents/caregivers of children with ASD frequently feel stressed when their children with ASD exhibit disruptive and unpredictable behaviours (Higgins, Bailey, & Pearce, 2005). By engaging children in physical activity, parents may experience less stress, as stereotypical behaviours are reduced. It is also recommended that teachers consult with

caregivers or parents to ensure that the goals of the family and student are met (Jannett et al., 2003). A similar strategy is suggested in The Canadian Red Cross documents (Canadian Red Cross, 2014). Parents and teachers should establish a partnership to exchange strategies and expectations to meet those goals (Palmer, 2015). Consistent dialogue between parents/caregivers and instructors will ensure families are a part of the progress and success of these students. Current literature provides evidence that swimming is beneficial for the well-being of swimmers with ASD and the well-being of their families.

An area that has been more thoroughly researched in terms of an increase in positive behaviours and a decrease of stereotypical behaviours manifested in children with ASD is aquatic therapy. In a survey administered to aquatic therapists, one hundred percent of the participants showed an increase in the amount of eye contact that their clients displayed, as well as a higher tolerance to touch (Vonder Hulls et al., 2006).

Physical activity minimizes stereotypical behaviours of children with ASD. Many of these stereotypical behaviours are the result of a need for sensory stimulation (Lang, Koegel, Ashbaugh, Regeher, Ence, & Smith, 2010). Physical activity can provide a sensory stimulation which increases attention span and helps children maintain focus towards on-task activities (O'Connor, French, & Henderson, 2000). Effective communication skills are often enhanced in swimming lessons and as a result, reduced stereotypical behaviours have been observed (Goldstein, 2002). Effective teaching strategies not only enhances the physical capabilities of children with ASD, but behaviours, social and communication interactions improve as well.

Motor Skill Development

Children with ASD are often at higher risk for passive behaviours due to complications associated with ASD. Along with a lack of physical activity opportunities, these children often

have difficulty enhancing motor skills, and therefore, have limited core body strength (Fragala-Pinkham et al., 2011). Adults play a fundamental role in the motor skill development of children (Benelli & Yongue, 1995). They provide children with opportunities for developing physical competency. Learning is not an isolated process for children but rather one that must be mediated (John-Steiner & Mahn, 1996).

Swimming lessons are an effective activity for children to engage in physical activity. As indicated by Morrongiello, Sandomierski, Schwebel and Hagel (2013), “Drowning is a leading cause of death and disability for children” (p. 1169). By placing children in swimming lessons they will learn to become physically competent individuals and engage in a potentially lifesaving exercise. The participation in aquatic activities encourages physical fitness and improves posture and muscle tone in children (Torlakovic, Muftic, Avdic, & Kebata, 2013). Aquatics create an optimal space as, “the body is almost weightless in water, swimming is one of the most appropriate sports for persons with disabilities” (Chatard, Lavoie, Ottoz, Randaxhe, Cazorla, Lacour, 1992, p.1276).

Previous research has noted that children with ASD demonstrate an increase in flexibility as well as grip strength when participating in aquatic lessons (Yilmaz et al., 2004). One study suggests that the parents of children with ASD have noticed that their children are making gains in their motor performance, as well as enjoying their experiences in water (Prupas et al., 2006). Swimming is an ideal activity, as the motor skills that each student learns may be geared towards their needs and preferences. Many sports are competitive and not appropriate for some children with ASD. In a pilot study conducted by Fennick and Roayle (2003), a child with ASD gradually began jumping into the pool on his own. The child also started to kick and float on his back. The

gains made by this child specifically, showed an improvement in his motor development. This illustrates how effectively swimming lessons enhances the physical needs of students with ASD.

Aquatic Interventions

In order for swim instructor training programs to be efficient, instructors should know appropriate strategies for teaching students with ASD that is, to plan for and execute lessons and evaluations. For example, the use of strategies such as a time delay has proven to be a successful prompt in swimming lessons for children with ASD (Hwang & Hughes, 2000). It is particularly effective in instances when students are provided with choice, as it is essential to provide an appropriate amount of time between asking a question and the time that the child requires to process and respond to an option (Iacono, 2015). Studies have found that time delays can encourage social interactions and motor skill development (Yilmaz, Birkan, Konukman, & Erkan, 2005). Using this procedure with recording devices seems to be a valuable and effective method to involve parents in the monitoring process of their child's development (Rogers, Hemmeter, & Wolery, 2010).

Aquatic interventions must meet the needs of all students and shared effectively to track their progress, by way of assessment tools. If only one assessment is used, this may underrepresent typical behaviours (New Jersey Department of Education, 2004). Beginning a session with some form of baseline assessment is also an effective way to compare on-going evaluations of progress (Huettig & Darden-Melton, 2004). The knowledge and application of appropriate intervention strategies into weekly swimming lessons, will not only improve the quality of lessons students receive, but will provide the swim instructor with a greater sense of confidence in their ability to effectively instruct students with ASD.

Chapter 3: Theoretical Framework

In this chapter, I will examine the theoretical framework chosen to conduct this study. A sociocultural lens will unpack the experiences of the swim instructor participants. I will examine how culture has influenced the ways in which instructors execute their swimming lessons and how they have acquired strategies of effective practice. As described by McMaster, Culver, & Werthner (2012), culture heavily influences disability coaching practices. It is therefore necessary to understand the cultural influences which have guided the experiences of swim instructors, more specifically, their journeys of coaching swimmers with ASD. Culture is transformed by the relationships that develop between coaches and their athletes, as well as coaches and their environment. Current literature has noted the importance of both researchers and coaches alike to be aware of their pre-conceived assumptions towards teaching individuals with disabilities (Townsend, Smith, & Cushion, 2016). A sociocultural lens is a framework which creates a backdrop to explore the mediators that guide human development. For the purposes of this study, there will be a focus on the development of swim instructors' practices, with an emphasis on influential contexts which have contributed to swim instructors' experiences. This is an appropriate lens for researching instructors who teach students with ASD.

Sociocultural Theory was originally founded by Vygotsky and delves into the influences and mediators in culture which are responsible for human development (Lantolf, 2000). Vygotsky's key concepts such as *Zone of Proximal Development (ZPD)* served as background knowledge. Vygotsky theorized about children's typical development and the development of children with a disability. He explored both the primary challenges that a disability may have on an individual's development, as well as the ways societal and cultural beliefs inhibit or aid in the development of

children with special needs. In this study, an example of a primary challenge may be a child's inability to verbally communicate. The instructor's assumptions regarding the student's swimming abilities because of their lack of verbal communication, is a constraint that can give the impression that this child cannot learn to swim (societal context). Vygotsky's concepts of mediation, and Zone of Proximal Development will act as a reference point to analyze the learning and development of swim instructors in their practice and how this, in turn, affects the learning and development of their students. Another area that will be examined are the sources for effective practice, as context is an important factor in the instructors' development.

Vygotsky (1986) asserts that mediation guides interactions between humans and objects. Semiotics are the tools which act as facilitators in mediating this learning (John-Steiner & Mahn, 1996). In the context of this study, rather than exclusively focusing on language as a dominant semiotic mediator to guide the social interactions and cognitive development of children, other mediators such as water will be noted.

In order to account for the individual gains of children through interactions with their more competent peers, Vygotsky developed the concept of *Zone of Proximal Development*. This concept suggests that one way that children may reach their full potential, is through engagements with adults and more advanced peers to acquire new skills and increase competencies (Kozulin, Gindis, Ageyev, & Miller, 2003). It is important that instructors choose their instructional strategies according to their students' needs to create opportunities for their development. Every instructor will favour instructional strategies over others and there is no set of strategies for teaching every child with ASD.

Along with Vygotsky's concepts, Barbara Rogoff's texts will be guiding the framework for this study. Rogoff is a leading researcher in sociocultural theory and is an appropriate reference,

as much of her research is influenced by Vygotsky. During a small scale pilot study that I undertook for a course in my MA program, I discussed my findings from interviews with a therapist and swim instructor that had experience working with children with ASD in aquatics. I used Barbara Rogoff's *The cultural nature of human development* (2003) as a guide for the analysis. The pilot study examined the positive effects that the therapist and instructor observed during swimming lessons with their students or clients. Rogoff's observations and writings acted as a facilitator for my analysis of the sociocultural influences in the study. This experience allowed me to become familiar with the main theorists and concepts proposed by Rogoff.

For my current study, I will once again use key concepts from Rogoff, as well as other sociocultural texts to guide the research. Rogoff noted that, "*Understanding one's own cultural heritage, as well as other cultural communities, requires taking the perspective of people of contrasting backgrounds*" (Rogoff, 2003, p.11). Her description of the process for examining culture supports my current study, as I will be exploring the experiences of instructors with different histories and influences. She also examines the notion that culture is everywhere. Although individuals may not have a self-reflexive awareness of their culture, culture is everywhere and therefore possible for researchers to study. Finally, Rogoff has determined that, "*There is not likely to be One Best Way*" (2003, p.12). In terms of discovering strategies of effective practice for swimmers with ASD, there will likely not be a set of strategies that will work for every child. However, researching strategies which inspire and have been proven effective seems to be a good starting reference for a positive intervention. Rogoff (2003) explains, it is the awareness of, "...which strategies are helpful in what circumstances (p.253), which is necessary for the facilitation of successful lesson. The development of a child is a result

of guided participation. This guidance will be examined through the mediating strategies instructors use to guide their students' participation.

A final reference that will serve as a guide is Lave and Wenger's *Situated Learning: Legitimate Peripheral Participation* (1991). The key principles from Lave and Wenger are particularly appropriate in terms of analyzing the contexts in which the instructors have gained their knowledge for effective practice. Lave and Wenger discuss such concepts as "legitimate peripheral participation" which explore interactions and social learning that enrich one's practice and construction of knowledge. Lave and Wenger explore the journey from new-comer to old-timers in order to gain competence through community participation. This fits well with Vygotsky's *Zone of Proximal Development*, as novice coaches often increase their expertise through more experienced others. However, it is made clear that this learning is not a linear process, as knowledge is cyclical and in a constant state of change. These principles will be applied to the individual learning situations of the instructors' within their communities, to determine effective learning contexts for instructors teaching individuals with ASD. Lave and Wenger's texts are also a result of Vygotskian influences, as their main research focuses on the ways individuals influence each other through social learning.

Not only does a disability affect a child's primary abilities, but also their interactions with society (Kozulin, et al., 2003). In fact, swimming lessons are a unique environment to observe how students with ASD are perceived by their instructors. Coaching knowledge amongst disability coaches is often cultivated through experiences (Duarte & Culver, 2014). The cultural influences of each instructor will affect their repertoire of teaching strategies and views towards coaching students with ASD. With a sociocultural lens guided by Vygotsky, Rogoff, and Lave & Wenger, I will be able to analyze the cultural influences that have informed The Canadian Red

Cross training program and Lifesaving Society training programs. This will be compared to the experiences of swim instructors and the cultural influences which have guided these instructors in their formulation of the lessons that they conduct to meet the needs of swimmers with ASD.

A sociocultural framework and the concepts discussed above, create an opportunity to explore the influences and experiences of swim instructors. A visual articulation of these concepts and texts can be found in (Appendix A). Every instructor will have an individual journey and preferences in terms of coaching strategies, due to the contexts of their learning. The use of this framework will result in a more transparent understanding of swim instructor experiences which are hopeful to resonate with other instructors through the dissemination of this study.

Chapter 4: Methodology

In this chapter, I will describe the methodology for conducting this research, strategies of data collection and analysis, as well as the recruitment process. I have also indicated the process which was undertaken to receive ethical approval.

Recruitment/Case Study

Recruitment began in the spring of 2015 and continued into the spring of 2016. Several sites were contacted and approved for participation in this study. Two sites were available for recruitment, one location in Ottawa and the other in the Toronto area. Each site recommended instructors that were eligible to participate. Swim instructor participants were required to have undergone Canadian Red Cross swim instructor training or Life Saving Society Instructor training and need to be currently teaching at least one child with an ASD diagnosis. Three swim instructors who are Canadian Red Cross or Life Saving Society certified were recruited to participate in case studies. All of the names of the instructors' in this study have been changed to pseudonyms to maintain the anonymity of the participants. Four students between the ages of five and nineteen were observed throughout the study; however they were observed as students in the swim instructors' lessons, rather than as participants in this study.

A descriptive case study was chosen in that "thick" descriptions of the experiences of three swim instructors are discussed (Merriam, 1988). Literature also indicates that descriptive research promotes transparency (Aanstoos, 1983). According to Willig (2001), descriptive case studies aid in the process of making sense of data collected through description. This particular type of case study aligned well with a sociocultural lens, as it is grounded in the context of the activity examined which creates a rich understanding contextual influences. The use of

methodological triangulation is appropriate for case studies, as several methods of data collection are utilized in order to uncover multiple perspectives and compensate for any limitations that may have occurred with a singular method of data collection (Guion, Diehl, & McDonald, 2011). These data collection methods include a document analysis, questionnaire, observations, and interviews. The multiple sources of data collection will provide a range of information (Creswell, 2013), as transactional contributions to this study.

Ethics

Ethical approval was obtained from the University of Ottawa's Office of Research Ethics and Integrity in December 2016 (see Appendix B). This approval allowed me to collect data from two private swim schools. Due to a lack of available instructor participants, four more ethics modification forms were submitted and approved. The two locations in which instructors were successfully recruited from included one instructor from a private swim school and two instructors from a recreational centre, both in the Toronto area. Each instructor received two consent forms (see Appendix C), one signed copy was kept by the instructor and one for myself. A letter of information (see Appendix D) was given to the parents of the students as well. This letter informed parents of the study and the reason their child's lesson was being observed. The consent forms describe the purpose of the study as well as the goals of the study along with the anticipated benefits. Swim instructor participants were accepted based on their organizations' recommendation. Participation was completely voluntary, and participants were made aware of the time frame and commitment required of them in order to participate in this study. The consent forms submitted to the swim instructors ensured the anonymity of their participation in the study. My contact information was offered on both forms should the instructors or parents/guardians have required clarification.

Participant Profiles

In this section, I will introduce the three swim instructor participants in this study. These descriptions will provide a context for their experiences and the lessons that they taught during this study.

Adam

Adam is a Canadian Red Cross certified swim instructor. He has been certified for five years and has been teaching students with ASD for one year. He has taught three to four students with an ASD diagnosis over his instructing career. In the lessons that were observed in this study, Adam taught one nineteen year old student with ASD.

Jennifer

Jennifer is a Life Saving Society certified swim instructor. She has been a swim instructor for a year and a half, but had prior experience working as a volunteer in an adapted swimming program before receiving her formal certification. She has been teaching students with ASD for six months. Jennifer taught one twelve year old student with ASD during the observations of this study.

Jason

Jason is a Life Saving Society certified instructor. He has been swim instructing for two years, but had experience volunteering in an adapted swimming program prior to receiving his instructor certification. Jason has been teaching students with ASD for eight months. In Jason's class, two students, one five year old and a nine year old with an ASD diagnosis were observed.

Procedures

Data collection took place at the swimming facilities (questionnaires, observations, interviews) between February and April of 2016, with the exception of one interview with the swim instructor at the private swim school (Adam) who completed his interview via Skype, the same day as the first observation period. Data collection was completed within two consecutive weeks of each other [(Adam) – February 28th, March 6th and (Jennifer and Jason) – April 16th, April 23rd]. The privately owned pool is located in Thornhill, Ontario and the recreational centre is located in a community centre located Richmond Hill, Ontario. The swim instructor participant at the private school taught a private lesson with one student and the two instructors at the recreational centre taught lessons with four students.

Data Collection Strategies

An initial collection strategy a demographic questionnaire (see Appendix E), provided information about the participants' swim instructing experience and training. This questionnaire consists of both descriptive questions to retrieve information that the instructors' deem important, to gain a sense of what is necessary for quality instructing (Cote, Salmela, Trudel, Baria, & Storm, 1995). Closed questions were used as well, to gain further information (Opie, 2004).

An observation period followed regarding the strategies that the swim instructors utilized in their lessons. Observations were chosen as another form of data collection, so that I could examine the practical applications of the instructors' strategies. According to Lave et al. (1991), it is important to talk both *about* and *within* practices (p.109). This encourages communities to discuss both essential information as well as stories. Through the observations of lessons, I could note significant aspects of the swimming lessons to prompt instructors during their interviews.

These observations were taken by hand written notes. The note taking was an opportunity to identify any interactions that I personally deemed significant and would follow-up in the interviews. My role remained as an observer rather than a participant. My observations were not focused on the specific presence or absence of particular swim instructing strategies, but rather a more naturalistic recording of my personal observations that would guide the interviews with the swim instructors.

Following the observational period, follow-up interviews were conducted at the end of each lesson. I facilitated a discussion on the teaching strategies the participants employed during their lessons as well as relevant information regarding their personal experiences teaching their students with ASD. Examples of interview question can be found in (Appendix F). These interviews consisted of primarily open-ended questions. As discussed by Smith and Sparkes (2012), open-ended questions encourage the conversation to cover the *hows*' and the *whats*' of instructor experiences (Culver, Gilbert, & Sparkes, 2012). Such questions included, "What is your experience teaching children with Autism Spectrum Disorder?" and "Can you tell me about your training and how that has impacted how you teach your children with ASD?" Each interview was audio recorded and then transcribed for analysis. This study recognizes the value of a teacher's Personal Practical Knowledge (Connelly, He, & Clandinin, 1997). Although the participants may not be experts on ASD, their experiences working with swimmers with ASD in aquatic settings and their practical knowledge are recognized as important. Both interviews and observations are used in this study, as Culver et al. (2012), identify that there are often discrepancies between what coaches mention in their interviews and what happens in practice. Using both data collection strategies provides a more holistic understanding of the swim instructor practice.

Lave and Wenger suggest that new-comers and old-comers of a particular practice will have varying experiences and ways of constructing knowledge (Lave et al., 1991). These open-ended interviews were chosen, as the instructors had the space to discuss the importance of their unique experiences and to delve into their personal journeys. Probes played a valuable role in leading the interview into a discussion of instructors' strategies of effective practice, rather than simply discussing the strategies. Finally, a document analysis allowed me to become familiar with the current texts of Canadian swim instructor certification programs and examine how these programs translate into actual coaching practices. As discussed by Bartholomae & Petrosky (1986), literature has transitioned from, "...*getting* static meaning out of a text to constructivist approaches requiring readers' active making of meaning" (Miller, 2004, p.289). Through the exploration of the text in the document analysis, I became familiar with the swim instructor training programs. This enable my examination of how effectively these programs are serving instructors in their practice.

Data Analysis

In order to effectively analyze the various forms of data collected through the document analysis, questionnaires, observations and interviews, I consistently referred back to my guiding research questions: What are the experiences of swim instructors who work with children with ASD? What practical teaching strategies in swimming lessons are effective for social skill development, reducing stereotypical behaviours and motor skill development in children with ASD?

I conducted a document analysis of current Canadian Red Cross and Lifesaving Society documents that are geared towards meeting the needs of swimmers with ASD. Previously, I had the opportunity to have an informal interview with Dr. Ivan Brown, who has brought further

information to light that guided my analysis of these documents. Dr. Ivan Brown is a former professor from the University of Toronto who is cited in several of the Canadian Red Cross documents. With the use of a sociocultural lens, I analyzed the ways in which culture, time, and space rooted these documents. Details such as the use of such terms as, “*swimmer with disabilities*” were examined to determine the role this terminology may have on the practices of instructors who teach students with ASD. This analysis further informed the structure of my interview questions, as well as guide the ways in which I observed the swimming lessons.

Through the exploration of the individual case studies and reflecting on reviewed literature, the results of this study determined which strategies are effective in enhancing children with ASD's abilities to socially interact with their peers, reduce stereotypical behaviours and improve their gross motor skills. Using Creswell (2013) as a guiding text, I analyzed the data through a coding process to retrieve significant information regarding the swim instruction strategies that the participants used during the swimming lessons. Consistent strategies and common experiences between instructors aided in the development of categories. These initial categories were further delimited into themes through the constant comparison of the initial categories to determine which swim instructing strategies are used by successful swim instructors (Cote et al., 1995).

A sociocultural lens will guide the analysis of the collected data so that cultural experiences can be examined in terms of their influence on the strategies swim instructors use in their swimming lessons. The routes swim instructors have taken to acquire knowledge to effectively teach their students with ASD will also be analyzed to determine which experiences have enabled swim instructors to feel confident with their teaching strategies. Case studies have the advantage of providing the opportunity to analyze the ways setting and space influence the

findings of the research (Opie, 2004), further informing the cultural influences on instructing documents are developed and swimming lessons are conducted.

Trustworthiness

To ensure trustworthiness, I have used triangulation in the data collection strategies (Guba & Lincoln, 1985). However, in more recent literature, Sparkes (2002), suggests that the trustworthiness of data is also relative to time and place characteristics. The choice of collecting data for each instructor two weeks in a row and in the same facility, allows for the data collected to be consistent, as the students, instructors, time and place were observed in two consecutive lessons. The use of instructor participants from different facilities, with different instructor certifications, further supports the trustworthiness. The strategies the instructors are utilizing as well as the experiences of these instructors will vary based on their certifications and workplace.

As a former swim instructor with experience working with students with ASD, I am adding credibility to this study. I have the knowledge to unpack the data from this research in a meaningful way because I am familiar with the terminology and certification programs that the instructors have undergone to become swim instructors. To limit my personal biases, I employed a reflexivity exercise which has been suggested as an effective tool by Culver et al. (2012), and will be discussed in the following chapter. According to Culver et al. (2012), strategies such as providing the reader with information about the researcher, is effective in reinforcing trustworthiness. I have included both background information about myself as a researcher and swim instructor to create transparency within the study.

Chapter 5: Document Analysis

In this first section of the chapter, I will be discussing my analysis of Canadian Red Cross and Lifesaving Society documents. These documents will be analyzed for their relevance to instructor training programs. Following the examination of these manuals, the subsequent chapters will: 1) compare the findings gleaned from the observations and interviews with RC and LSS instructors and 2) determine the effectiveness of the CRCD and IC in terms of their relevance to coaching. These multiple data sources will delve into the experiences of swim instructors and the trainings they have undertaken.

The Canadian Red Cross has a number of additional resources for their certified instructors. These are accessible to swim instructors online through the Canadian Red Cross instructor network upon completing their swim instructor training. The items chosen through the instructor network that contribute to this analysis focus on instructing individuals with ASD. This analysis includes: *Water Safety Instructor resource for Red Cross Swim Learn-To-Swim for Swimmers with Disabilities* (May, 2014) and *Red Cross Swim Learn-to-Swim for Swimmers with Disabilities Technical Information Sheets Teaching people with Developmental Disabilities* (June, 2014). I will refer to these documents as Canadian Red Cross documents (CRCD) from here on in.

For a comparable document from the Lifesaving Society, Perry Smith (a program director for the Lifesaving Society), provided me with a program entitled, *“Inclusion Clinic: Notes for Instructor Trainers”* (September, 2005). To my knowledge, there are no other current manuals which the Lifesaving Society offers that prepare instructors to meet the needs of students with ASD. The *Inclusion Clinic* manual is an overview of what is to be included in an additional

training course. This course is catered to instructors to enhance their understanding of inclusion within swimming lessons. From here on in, I will refer to the *Inclusion Clinic* as (IC).

Although content analysis is typically seen as a quantitative data collection method, Smith (1975) and Abraham (1983) argue that content analysis informed by a sociocultural frame in an open coding process of meaning seeking. Strauss (1987) suggested a four step open coding process, "... (1) ask the data a specific and consistent set of questions, (2) analyze the data minutely, (3) frequently interrupt the coding to write a theoretical note, and (4) never assume the analytic relevance of any traditional variable such as age, sex, social class, and so forth until the data show it to be relevant" (p.30). The question I asked myself in reading the CRCSD and IC documentation was: **How do the Canadian Red Cross documents and *Inclusion Clinic* inform the strategies that instructors are using to teach their students with ASD?** Following the completion of the open-coding process, patterns within the codes were identified, followed by the development of themes. To further describe this process, I initially created a table and placed each new code into the table. As suggested by Creswell (2013), distinct patterns were identified when there appeared to be clear evidence of consistent statements or strategies noted within the codes. Themes were then created by developing titles that best articulated groups of patterns with similar content. Six main themes emerged from this process: Proactive Planning & Positive Behaviour, Able-bodied Language, Communication & Social Strategies, Physical Strategies, Caregiver Involvement, and Document Accessibility. These themes were then unpacked for their influences on swim instructors' philosophies and teaching preferences with their students with ASD. Many of the strategies suggested by the manuals are from behaviourist traditions and are discussed in terms of their integration into a sociocultural context.

Specific precautionary steps have been taken to validate the coding and theme building process. As a former swim instructor, I used a researcher reflexivity activity to bracket my biases and presumptions of instructional practices (Creswell & Miller, 2000). I reflected on what I brought to the analysis. With this being said, my knowledge of swim instructing has given me a better understanding of the terminology in this field, further supporting my ability to develop appropriate themes and codes for this study.

Proactive Planning and Positive Behaviours

Patterns and distinct regularities are quite evidently woven into culture (Rogoff, 2003). For children in particular, their personal experiences in cultural participation are guided by their families and histories (Gutiérrez & Rogoff, 2003), ultimately influencing the patterns and regularities they are exposed to. The cultural patterns children encounter will vary according to each individual's experience. Children with ASD are not only affected by cultural patterns, but there is evidence that distinct routines and regularities in their lives that are aligned with what is proposed in the manual (Hendriks, 1998). CRCDD discusses the importance of integrating both a routine and emphasizing the importance of remaining consistent in establishing rules in swimming lessons. Instructors may be inclined to facilitate their lessons in a predictable manner since they have been brought up in a culture that thrives on regularity. The CRCDD provides examples of effective strategies to encourage routine geared towards meeting the needs of swimmers with special needs, "Keep the basic rules and routines the same when planning theme days (e.g. getting in and out of the pool in the same place), and give swimmers and their parents advance notice of changes if possible" (p.7).

Proactive planning and creating a routine are important characteristics in lesson delivery for children with ASD (Prupas et al, 2006). According to Kosnik & Beck (2011), it is particularly

important for preservice educators to begin planning in advance, as each student is unique and planning to meet each student's needs is necessary, as learning is not predictable. CRCD encourages the involvement of parents and caregivers in the students' lessons, as they will be well informed of routines and practices most frequently used for their children with special needs. Instructors may think of routine as a natural occurrence within lessons, given the fact that routine is such a distinct characteristic in everyday life (Rogoff, 2003). According to Vygotsky, a child's development is the result of mediation, as a child does not develop alone (Karpov, 2004, p.138). The CRCD manual highlights that routine serves the student's development and is not innately obvious to the student. For individuals with ASD, transparency is a key element in establishing routines (Hendriks, 1998), so it is up to the instructor to ensure their students are aware of the routine. The CRCD indicates that communication with parents/caregivers and using explicit routines and schedules are effective strategies to facilitate lesson delivery.

Integrating routines into lessons encourages predictability, and often stabilizes the behaviours of students. The CRCD manual emphasizes proactive strategies for reinforcing positive behaviours. An example of a strategy includes, "setting limits and sticking to them" (CRCD, p.10). Discussing and demonstrating the behaviours that the instructors *do* want to see, rather than focusing on what they *do not* want to see is recommended. According to Albert Bandura's Social Learning Theory (1977), the direct result of an action (i.e. punishment or praise) will determine whether this action is repeated. An example from the CRCD (p.10) is telling students that it is important to *walk* on the deck rather than *not running* on the deck. These practical hands-on strategies prepare instructors with practices that encourage positive behaviours with their students with ASD.

As humans, we often become accustomed to our day-to-day lives and take our routines for granted. However, every child's abilities and experiences are unique and it is important that swim instructors are aware of their students' needs. According to Quinn (2011), routines are often created, "... by the logical necessity of what must follow what..." (p.215). For a child with ASD, initial swimming lessons will not be a part of their regular routine and instructors are responsible for accommodating this new setting. To address this phenomenon, IC identifies potential barriers that may be present on a pool deck and lists them. Instructors must become mindful of their surroundings. It is the responsibility of coaches to create an equal opportunity environment that fosters their students' achievement (Penney, 2006), making these steps necessary for an effective learning environment. As an assignment in the IC, instructors are asked to create maps of the pool and identify specific areas that may require attention to meet the needs of their students.

To ensure students' success, the IC stresses the importance of effective communication with the parents/caregivers of the student. The IC goes one step further in affirming that clear communication between the students themselves as well as any other potential instructors/volunteers should be a priority.

Able-Bodied Language

In her book *Sociologies of disabilities and illness*, Carol Thomas (2007) writes about the social oppression that comes along with disability, limiting the opportunities that individuals with disabilities have to engage in activities. The CRCD manual often uses language which focuses on "disabilities" rather than "abilities", using phrases such as, "wide range of various disabilities" (CRCD, p.16). This non-inclusive language narrows the lens for instructors in their interventions with students. Nevertheless, the CRCD does use some able-bodied language to

encourage instructors to strive for success for all of their students, “The swimmer’s abilities may be presented differently than you are currently aware of and call on you to use your swimming knowledge in a way you have not done before” (p.4). However, this positive language is scarce, especially when compared to the use of non-inclusive language throughout the manual.

A child’s development is a result of guided participation (Rogoff, 2003). Instructors’ interactions with their students is shaped by the perception on the students and their preference in instructional strategies. It affects the ways their lessons are structured and therefore, the ways in which they guide their student’s learning. The CRCED goes as far as using the term “disabilities” in the title of a file, alluding to the notion that the content is specifically for people with disabilities. Although these resources describe tools to teach effectively, this is not reflected in the terminology of the manuals. Instructors are ultimately prepared to teach with pre-conceived notions of their students and their expectations. As indicated by Penney (2006), a persistent issue in sports and physical education, is the lack of equal opportunities. Due to certain biases, individuals feel unwelcomed within the sporting community and limits their opportunity to engage in physical activities. Through the perpetuation of non-inclusive language, this issue has not been resolved.

In contrast, the IC manual use a more “able-bodied” approach in their terminology. Using “people-first language” (IC, P.13) and referring to the abilities of students rather than focusing on student’s disabilities, instructors are encouraged to view their students with an untainted lens. Fostering “acceptance” and “respect” is reflective of the culture the LSS promotes. This inclusive lens orients instructors to meet the needs of their students, without assumptions. The director of *Inclusion Club*, an online forum for sharing practices for athletes with disabilities, clearly articulates the importance of having an inclusive attitude in coaching, “Sure they want to

see their athletes improve. But fundamentally, they aim to get more people involved in a safe and enjoyable way” (Downs, 2015).

As coaches develop their knowledge through interactions with colleagues and through their own experiences (Cushion, 2011), the IC integrates activities into their training, encouraging peer exchange. In one of the proposed activities, instructors discuss their pre-assumptions regarding individuals with special needs, “Brainstorm common perceptions candidates have about participants with special needs. Identify the myths and realities” (IC, p.8).

Dialogue on the misconceptions and myths about individuals with special needs ensures that instructors are entering their swimming lessons with an accurate understanding of how to appropriately and effectively teach their students. An instance where the IC refers to “disabilities” (IC, p. 7), is noted but it is in reference to instructors’ assumptions surrounding disabilities. A reference to literature which discusses, “The Ontarians Disability Act”, provides instructors with other resources to access. In sum, the IC frames open-mindedness and inclusivity.

Communication and Social Strategies

All children with ASD have some form of communicative deficit associated with their difficulties in interactions (Magiati et al., 2003). Children with ASD may not develop speech, making an alternative form of communication a must for their well-being (Noens et al., 2005). It is therefore, necessary to develop an effective, alternative communication system to interact and teach these students. Edward Sapir (1939) stresses the importance of language in our culture and how it mediates our societies.

“ Human being do not live in the objective world alone, nor alone in the world of social activity as ordinarily understood, but are very much at the mercy of a particular language

which has become the medium of expression in our society” (Whorf, Carroll, Levinson, & Lee, 2012)

The strategies instructor use, as well as the cultural expectations, will deeply influence how their students with ASD will perform. A number of communicative tools have been developed for children with ASD (as well as children with other communicative challenges) which fall under the umbrella term, Augmentative and Alternative Communication (AAC) systems. An example of such a system is sign language and the Picture Exchange Communication System (PECS) (Ganz & Simpson, 2004). The CRCDD provides specific symbols for an aquatic environment, conveying effective visual communication strategies for their students with ASD. Other non-verbal communication strategies such as verbal communication paired with demonstrations are suggested by the CRCDD,

“Language may progress from concrete (the actual thing) to abstract (a symbol of the thing). An example of concrete language is holding and touching a lifejacket/PFD. An example of abstract language is looking at and understanding a picture symbol of a lifejacket/PFD” (p.10).

Although these communication tools are valuable, in terms of developing social interactions between children with ASD and their peers, instructors are not taught how to facilitate these exchanges between their students with ASD and their peers. For swimming coaches, creating an environment that fosters a community spirit has been proven to contribute to swimmers’ abilities to achieve their goals (Jones, Potrac, & Armour, 2003). As indicated by Leontiev (1978), peer and adult mediation fosters new motivation in children (Karpov, 2004, p.140). However, if instructors are not facilitating this mediation, students are not guided in the pursuit of these goals. The one socially focused suggestions from the CRCDD, is to ensure that forms are sent

home to all students. More specifically, if a form is given to a student with ASD (i.e. an intake information form), instructors are told to send a form home for all students in the class in order to limit exclusion and to receive information back from all of the swimmers.

Many forms of communications compensate for verbal communication. Specifically for children with ASD, there is evidence that using non-verbal communication systems lead to positive behaviours (Ganz, Earles-Vollrath, Heath, Parker, Rispoli, & Duran, 2011). The IC acknowledges this and lists a number of systems of communication to encourage positive behaviours including: “voice-tone, verbal, non-verbal, symbols, sign language, facial expression, body language and touch” (IC, p.13). The IC refers to websites (www.Pdictionary.com or www.dotolearn.com) that include a wide range of pictures which can be used as a helpful resource when communicating with students. The first website introduces words that you may click on to access a picture representation of it. The second website shows pictures with a written description underneath. An example from the website is a photo of a child in a lifejacket, with the caption “Wear Your Lifejacket”. These are examples of practical tools instructors can integrate into their lessons. The IC provides communicative strategies, but does not indicate concrete examples of strategies for encouraging social interactions for students with ASD.

There is limited content on how to encourage social interactions between students in these manuals. A few activities however, are modeled to encourage interactions between instructors. The IC has instructors practice modifying strokes and teaching each other skills with the aids available to them on the pool deck, allowing instructors to become familiar with practical ways of modifying programs to meet the needs of their students. They are learning from other coaches which has been proven to be an effective form of knowledge transfer (Culver & Trudel, 2006). Cushion, Armour, & Jones (2006) critique the practice of coaches who merely focus on the

achievement of their students and teaching by set modules. Coaches should engage socially with other coaches and transfer knowledge in a meaningful way to effectively apply coaching strategies in a contextual manner (Stoszkowski & Collins, 2016).

Physical Strategies

Recreational sports or community-based programs for children with ASD are often competitive and less collaborative (Fragala-Pinkham et al., 2011). Keeping children with ASD involved in activities then becomes a challenge; however, swimming lessons and aquatic activities are often an optimal activity. Children with ASD often display stereotypical behaviours as a result of a need for sensory self-stimulation. Physical activities such as swimming help children become more active and develop their motor skills, while providing the needed sensory stimulation (Lang et al, 2010). Children with ASD are usually at a higher risk for limited opportunities in physical activities, as there is a lack of available programming to accommodate children with special needs (King, Lawm, King, Rosenbaum, Kertoy, & Young, 2003). With appropriate strategies and programming put in place, children with ASD can benefit from swimming lessons. Vygotsky explains that a child with a disability may develop differently from their peers, but this does not indicate that this development is of any less significance (Gindis, 2004). It is simply that the appropriate mediated strategies must be used. Studies have demonstrated the use of effective strategies in water, such as time delay, have aided in social and motor skills development in children with ASD (Yilmaz, Birkan, Konukman, & Erkan, 2005).

In the CRCDD documents a discussion on utilizing assistive tools, such as floating devices to help children with disabilities is introduced. However, there is no information regarding the modification process that instructors should be applying in the use of these tools. One example of a modification includes, “this skill could be modified to a sitting entry for an individual who is

unable to stand” (CRCD, p.13) in reference to modifying a stride jump. This is a clearly an appropriate strategy for this exercise, but it is one of the only examples in the entire document addressing this issue. Instructors are not being given the information and understanding of how to modify skills. According to Owen (2007), educators are often so ingrained into the culture of their teaching that they are no longer able to see the changes that need to be made. However, if instructors are not being taught how to modify and change their curriculum, they will not use the tools to support their students’ development process.

In the introduction to the IC manual, the following is stated: “prepares the participants to adapt teaching strategies to meet the needs of individuals of various ages, skill levels and abilities” (IC, p.4). A large majority of the content of the IC document is left up to the discretion of the facilitator running the training program and as a consequence, a fair amount of variation in individual training sessions is manifested. The trainer documentation does explicitly state, “Trainers may add appropriate content, but not delete any” (IC, p.5). It is implied that the training will provide instructors with the tools and/or experience to appropriately adapt their lessons to meet the divergent needs of students. The activities in this manual should prepare the instructor. The emphasis is placed on the trainer to facilitate the activity and develop the curriculum, suggesting that each IC may vary greatly from session to session.

The IC manual encourages instructors to adapt activities and prepare maps of the pool in order to identify physical barriers. Coaches are more interested in their training when there is a clear link to coaching practice (Lemyre, Trudel, & Durand-Bush, 2007), making the above an effective practice. However, there are few examples of ways to adapt activities specifically for students with ASD. Once again, it is up to the facilitator to orient the instructor in adjusting their activities. There are no practical teaching strategies to guide the motor performance of students

with ASD in this document, or any other child with special needs. For there to be explicit discussions regarding the adaptation of skills for teaching swimmers with ASD in this training, it would be up to the training facilitator.

Caregiver Involvement

The CRCD stresses the importance of involving parents/caregivers into the programming of lessons for students with ASD. According to Rogoff (2003), “children everywhere learn skills in the context of their use and with the aid of those around them” (p.69). When parents/caregivers collaborate with the instructor in lesson planning, the instructor can better adjust their intervention. The caregivers are a valuable source of information in preparing lessons. The CRCD provides a number of practical strategies for involving caregivers in the lesson planning stages. The use of tools such as the *Swimmer Information Intake Form* and the *Program Evaluation Forms* (CRCD, p.6-7) completed at the beginning and end of the session, provides instructors with the feedback to improve their lessons. When instructors are partners with the caregivers, the instructor is no longer solely responsible for interpreting the students’ needs.

Another area of emphasis in the CRCD manual is the continuous evaluation of students’ so ensure their needs are being met. Ongoing evaluation is an effective strategy as it allows instructors to monitor the performance of their students and, “recognizing (that) all achievements is crucial” (CRCD, p.8). Keeping caregivers informed of their child’s progress is made possible by way of evaluations. Vygotsky asserts that standardized testing is an ineffective practice for assessing a child, particularly in the case of a child with a disability (Gindis, 2004). The need for multiple evaluations, to assess a child’s development is more appropriate. However, the accessibility of these evaluation forms for swim instructors is lacking and therefore, needs to be added.

The Lifesaving Society encourages their instructors to use intake forms at the beginning of sessions in order to establish a baseline. In the IC, a learning activity is informed by intake forms that orient the instructor, “what information should be included (in the intake form)?” and “How would you solicit the information you need from parents?” (IC, p.13).

Instructors engage in conversations with their peers regarding effective methods of obtaining information from the parents/caregivers of their students in the IC training. Parents with children with ASD as well as other developmental disabilities develop high levels of stress (Rivard, Terroux, Parent-Boursier, & Mercier, 2014). There is a need for instructors to be appropriately prepared to speak to the caregivers of their students to reduce this stress. Parents and caregivers have identified that transparency with instructors is important (Renty & Roeyers, 2006).

Access to Documentation

As a former swim instructor and shift supervisor for over 10 years, I did not personally come into contact with a *Swimmer Intake Form* or a *Water Assessment Form* to assess a swimming session. I worked at five different swimming facilities which required their instructors to be either RC or LSS certified. Relevant documentation would have helped in the delivery of quality service, but it seems that they are not used. The book *Sports Coaching Cultures: From Practice to Theory*, discusses some of the most relevant concerns in swim coaching and the challenge to ensure instructors are informed on the most salient strategies (Jones et al., 2003). Do the instructor’s access and read these texts? The following paragraphs examine how much these documents do play into instructors’ practice.

The content of these documents is carefully selected, as the information included or withheld is a result of an organization’s view towards coaching (Cushion et al. 2006). Therefore, coach training programs, as described in the documentation, are criticized because the information

being passed down to new instructors seems unchallenged and decontextualized. The accessibility of these documents also influences the dispositions of instructors in their preparedness to instruct. Although the documents produced by the Canadian Red Cross and Lifesaving Society have a wealth of information, if they are not being used by instructors, they are not influencing their practice. There is a need for instructor's practices to be examined in order to determine which strategies are most effective in practice and not simply in training. An exploration of how these strategies have been chosen is necessary, considering access to documents may be limited. Instructors are exposed to a number of experiences, but there is clear inconsistency in training and quality of lessons for students with ASD. As noted by Penny (2006), "...in order to be effective, coaches, as teachers (in both senses of that phrase), have to be open and committed to lifelong learning" (p.35).

Penny indicates the need for coaches to access quality training in order to increase preparedness for practice.

In March 2016, I attended the Eastern Canada Sports and Exercise Psychology Symposium (ECSEPS), at McMaster University. A fellow graduate student from the University of Toronto approached me following my presentation on my thesis proposal. She explained that the Canadian Red Cross was in the process of developing modules for the instructor network, which focused on teaching swimmers with ASD. I was informed that they were due to become public through this online network in April 2016 (Wolfson). During a recent search, I have discovered documents that have been recently added network and are available for public access. These documents include: *Teaching People with Sensory Impairments*, *Water Safety Instructor Resource for Red Cross Swim Adapted*, and *Aquatic Communication Book for Red Cross Swim Adapted*.

With regards to the IC manual, I obtained a copy by directly contacting the Lifesaving Society. To my knowledge, this document is not available to the public. I had never previously heard of the IC, nor could I locate a current training program or resources online. Access to documentation and links to websites that instructors may consult and should be easily accessible. These websites showcase practical resources such as PECS and information about disabilities for instructors. The training also includes a document entitled “Welcome to Holland” by Emily Perl Kinglsey. This is a wonderful story of a parent who is raising a child with special needs. Introducing instructors to analogies such as this will expose them to a preliminary understanding of the experience of working with children with special needs and an opportunity to begin reflecting on the needs of their students and coaching practices. Taylor, Werthner, Culver, & Callary (2015) stress the importance of reflection while working with individuals with disabilities. Along with the reading of “Welcome to Holland”, the IC document encourages instructors to share and reflect on their experiences of working with students with special needs.

The IC is a very comprehensive document, but if instructors do not consult this manual, then key information is simply not accessed. It is the duty of pre-service educators to be continuously seeking new opportunities to learn, as Owen (2007) noted, “I would go as far as to say that when an individual stops learning they stop being a leader” (p.109). She emphasizes how crucial continuous participation is, but it is equally as important for training programs to be accessible to these educators.

Although documentation and training program manuals offer significant information, relevant literature suggests that the ways in which coaches facilitate their teaching is a direct reflection of who they are as a person (Wragg, 2000). Some find that certification is necessary for an introduction to coaching practice, while others find them rather restrictive (Cushion et al. 2006).

Coaches also gain knowledge through a number of unregulated means, such as personal experiences, the internet and through other instructors, not exclusively through formal training (Camiré, Trudel, & Forneris, 2014). The case studies of three swim instructors that follow will examine the instructors' process of decision making on strategies and whether these documents have indeed played a role in the instructors' journeys to becoming confident in their practices. There are conflicting views towards the influence that certification programs have had on coaches, particularly youth coaches.

Chapter 6: Five Strategies of Effective Practice

“Adam and his student are always moving, “Circles, circles, good just like that” he calls out as his student swims front crawl. There is a clear partnership in the execution of this lesson. Adam empowers his student throughout the class by asking what he wants to do next “Do you want to do breaststroke?” This swimming experience seems very positive and Adam is consistently praising his student for his achievements, “You’re doing it!”
(Observational notes from Adam’s swimming lessons, February 2016).

In this section of the findings, I will describe the findings stemming from answers to the questionnaires, observations, and interviews conducted with the three instructors participating in this study. The instructors both demonstrated and discussed the strategies that were most effective for teaching their students with ASD as well as their experiences cultivating this knowledge. Although the training that these instructors undertook and the certifications each of these instructors holds do vary, there appears to be clear evidence of consistent and preferred strategies of these swimming coaches. Five strategies of effective practice have been uncovered: Positive Practice, Gestural Communication, Contact Communication, Complexities of Choice, and Encouraging Independence & Confidence. The instructors discussed a number behavioural strategies, similarly to the manuals, as these strategies are an evident and important aspect of coaching children with special needs. These behaviourist strategies are noted in terms of their integration into a sociocultural context.

Positive Practice

Positive reinforcement is a strategy used quite frequently with students with disabilities. The consequence or feedback that follows a particular behaviour will directly affect how the student interprets the behaviour (Watling & Schwartz, 2004). As a strategy in an aquatic setting the instructors affirm that positive reinforcement in a stimulating environment, inspire students to better perform their swimming activities.

Adam frequently gives his student a high five after a successful routine. Adam will also use verbal reinforcement throughout the lesson by explicitly stating which skills are being reinforced through statements such as, “Good job keeping your foot up”, “Bend and whip, good job”, “Circles, circles, good, just like that”. By using positive reinforcement after a routine that is performed well, Adam’s student is aware of where the praise is directed. The parents of Adam’s student also explained to him at the beginning of the session, that he should only be using positive language. Adam continued to use positive language, even when correcting a movement. He will use encouraging language, while mentioning what corrective action will improve the movement. The student is made aware that he is being praised for his effort and remaining on task, all the while making corrections to improve the action.

Jennifer also uses verbal praise to encourage her students, but also places an emphasis on reward systems. In her class, Jennifer often uses a First-Then system which acts as a clear example of the positive result that will come following a set behaviour/skill/action etc.

“I love reward systems. It works so well, because like with these kids, they always want something to benefit out of it. So if they aren’t doing something good, it’s good for them to learn that if we’re doing something bad that you’re not rewarded for it. But if you’re

doing something good then they get a good thing out of it. That's good. And it motivates them to actually do the skills that we're doing".

She states that positive reinforcement not only improves skill development, but also makes her students proud of themselves.

"I always use it (positive reinforcement), because I feel like when they're getting told that they're doing something great, their confidence level will go up. Then they feel happy coming to swimming lessons".

Similarly to Adam, Jason likewise attempts to make swimming an overall positive experience for his students with ASD.

"If they're not really used to something, try to make it seem like a positive experience with that person. So they kind of get used to that feeling of, this person's nice or they enjoy doing this, with this person".

Jason also utilizes reward systems in the same manner as Jennifer to boost performance.

"I find like... if they're doing something well and reinforcing that idea, they kind of get more used to doing it in that way, Because if you don't say anything, I find that sometimes they assume that they're not doing it right. Or they don't really pay attention at that point. Kind of giving that attention and that positive reinforcement helps out everything with them".

Positive language and positive reinforcement encourage students to do their best and have proven effective as strategies.

Gestural Communication

As previously mentioned, using bodily cues as a form of communication is an effective strategy for mediating skill acquisition with students. However, communication with swim

instructors does not end there. Due to the fact that children with ASD have challenges communicating verbally (Magiati et al., 2003), it is essential that instructors employ alternative means to communication. Whether it be acknowledging that a student is performing well, or whether it be a means to correct a stroke movement, communication plays a key role in these three instructors' lessons. As discussed by Maxine Sheets-Johnstone (1994) in *The Primacy of Movement*, communication (including verbal) is not limited to the sound of words, but the perception of gestures plays a role in the communication as well. Instructors must be creative in their choice of communicative strategies to ensure their students are grasping the meaning of their chosen communication in its intended form.

Adam creates a very positive and encouraging environment for his students. He is always actively expressing how proud he is of his students through communication that is not always verbal. In Adam's class, he often will use a high five as a way of showing his students that he is proud of the student's progress. He uses this strategy as both a communicative tool, as well as a reward system, as his student thrives when he receives a high five. Adam will also use physical gestures to communicate when introducing a new skill. He will physically demonstrate the skill himself before having the student attempt to mirror the skill. Lave et al. (1991) concur that, "Quite simply, if learning is about increased access to performance, then the way to maximize learning is to perform, not talk about it" (p.22). By modeling the skill first, Adam is able to provide his student with a visual cue of his expectations in the execution of a skill.

Jennifer will sometimes use pictures along with physical cue with her students. She has been introduced to the use of pictures which are similar to PECS to encourage visual communication during additional training.

“I feel like it helps them understand better, what they’re doing. Because sometimes if you’re just talking to them, they’re confused...So it’s good to have that physical manipulation and also give verbal cues. Sometimes we bring out, we have these cards that will say exactly what they’re doing...”

She will also often physically use a gesture along with a verbal explanation. When encouraging a student to blow bubbles, Jennifer will point to her mouth and blow bubbles in the water and follow this demonstration by saying “blow bubbles”.

Jason will use mirroring to teach his students. When introducing treading water to his student, Jason decomposed the stroke and physically showed the student an example of the correct posture and movement prior to having the student practice the new skill.

“If they’re non-verbal kids themselves, instead of just saying “keep kicking”, I just start doing whatever it is and try to put that emphasis there and just try to get their attention towards what I am doing, to try to get them to copy me”.

Each instructor displayed a slight variation in the way they communicated with their students, however, communication which did not include verbal cues, consistently facilitated a successful lesson. Through pictures or teacher centered demonstrations, each instructor modeled the exercise for their students.

Contact Communication

Although a hands on approach is a form of gestural communication, the prevalence of this strategies was highly evident throughout every the lessons. It will therefore be introduced separately, as this strategies holds value on its own.

To maintain the engagement of a student with ASD in a lesson, it is suggested that contact communication be used to keep students actively participating (Leach & Duffy, 2009). This

strategy is used in a number of ways to encourage student learning as well as their engagement. The instructors would physically cue students, so that they could feel the physical motion of the practice of a stroke or skill. Along with these bodily cues, instructors also decompose skills into separate parts (often referred to as “chunking”) to practice the stroke in more manageable chunks.

For example, Jason suggests the use of physical cues, as they are effective for familiarizing students with a new body position, “Generally for skills like floats and stuff, trying to get like the form down... So using physical manipulation to get them used to the feeling for like the positioning of a float...” Adam also favoured using physical cues in his lessons. He would hold on to his student’s hands and move them in a circle motion to practice the arm movements. Along with this, he would call out, “pull, breathe, whip, glide”, repeatedly with each circle of the arms. Adam’s physical intervention on his student’s arms along with his verbal cues accompanying the stroke action, reflects a hands-on approach in skill development. Adam used this strategy for front crawl as well. He would move his students arms back one by one in a circular motion and call out, “arm and arm and arm” to ensure his student achieved the correct movements and its sequence.

Along with verbal breakdowns of strokes, Jennifer often utilizes various tools to help with chunking in her lessons.

“Yeah I like to do progressions. I do that a lot with kicking. So I’ll start with kicking with a flutter board or noodle. Then I’ll go to a small pool buoy. Then use the bricks, the small bricks and then eventually they’ll be able to do it by themselves.”

Jennifer will also use physical cues to support her verbal communication. When practicing a skill (such as flutter kick on the student’s back), she will move her student’s head gently with her

hands so that the student will begin kicking their legs, as the slight physical cue would encourage the student to re-engage in the lesson and task at hand.

Jason will break down strokes as he finds this strategy will guide his student's skill development, "Usually, I'll try to break down the stroke. Almost every lesson, going to the very basics to what's expected. Just that, it's a little easier for them to process, to get used to the different steps to it".

Each instructor may break down a stroke in a different way, whether it be through the use of tools or through physically guiding the expected movement. These instructors have a very clear preference for using physical cues.

Complexities of choice

Providing students with choice positively affects the learning experience. Too much choice can make it challenging for the instructor to guide the lesson delivery. Offering choice is one of the strategies discussed by all three instructors, however, it seems as though choice can either encourage or inhibit performance.

Adam uses choice in a fashion that is meticulous. He typically gives his student a choice because it awakens an active and joyful engagement. He carefully invites his student to make choices, but at specific points in the lesson when it will benefit the student. He will ask his student, "Do you want to do breast stroke?" which encourages the student to feel in control of the lesson while still allowing Adam to maintain the structure of the lesson. Once Adam's student has demonstrated the skills that he would like him to practice, he will ask the student, "What do you want to do now?" He is creating a collaborative environment which gives his student responsibility, but still allows him to facilitate the class effectively.

In contrast, Jennifer does not think that choice is an effective strategy as it provides students with the opportunity to engage in activities that are not always conducive to their progress. Other strategies are more useful for her students.

‘I’ve done it a couple times (used choice). I feel like it does help, but also it doesn’t because they have the choice of just playing with the rings, then that’s what they’ll want to do. I do like seeing them progress and they have, but that’s why I like the first and then better’.

Jennifer does not see that choice benefits her students.

Jason seemed to have a less definitive opinion towards offering choices in his lessons. During the observations of Jason’s lessons, I noted that he asked his students what they wanted to do, but did not seem to explicitly give choices in the lesson in any particular way. Similarly to Jennifer, Jason will often use reward systems over choice, but does offer some choices.

The instructors’ opinions on the use of choice within lessons were not necessarily consistent, however, each instructor used or discussed choice.

Encouraging Independence & Confidence

Swimming lessons are an ideal environment to foster challenges with children with ASD (Lee et al., 2013). Challenging children teaches independence, confidence and skills in a unique way. The benefits of working on independence lie in the enjoyment that students express in the lessons.

Adam noticed that his student enjoys swimming. He is doing an activity without the presence of member of the family. This is one of the few times that his student is able to participate in an activity independently from his family, ‘I think it’s because he’s away from his parents (why he likes swimming lessons) and a lot of people who are always in his life’. At the end of Adam’s

class, his student spontaneously asked if he could jump into the water from the side of the pool which he had not done throughout the session. Positive language, patience and consistently giving his student high fives has boosted his confidence, "... that was actually one of the first times I can actually remember him saying 'I want to do this'". In an interview with Adam he mentioned that he often noticed that his student initiated social interactions with other students in the class as an example of increased confidence.

Jennifer taps into her students' preferences in order to foster their independence,

"... just making sure that if a kid doesn't want to do something that you want to try to work around it to make them more comfortable in the water because we're not trying to force them to do something. We want them to enjoy swimming and learn something out of it".

Although the student may not be performing the skill unaided, she emphasizes the importance of having the student attempt the skill on their own,

"For my class most of them wear a belt, so it's a lot easier for them to actually float and do the skills. I'm not particularly looking for a certain technique. As long as they are kind of doing the motion, then they're getting something out of it".

She notes that her student is often accompanied by his family outside of the pool but he now interacts with peers by himself during lessons,

"Socially it's very good (swimming lessons), because they're learning how to interact with other people, whereas most of the time they're just at home with their family.

Physically it's getting them active, whereas again they're probably sitting at home and stuff, so it's good for their physical and mental health".

Her student's confidence and independence has enriched their social interactions with others, "I feel like they have more confidence approaching other people and like they seem more happy when they're in water enjoying themselves, very friendly".

Jason emphasizes the importance that water plays in students' independent development of skills. Physical development may not be achieved independently outside of an aquatic environment. Swimming lessons is an ideal place for swimmers with ASD to develop skills autonomously, as the water supports this achievement, "...just more mobility in water. Some of them are able to do skills a bit more independently..." Jason credits the newfound confidence in his students to their positive experiences within the water. This has increased the instances of social interactions.

"I feel like it (water) can help them with social skills, and like developing those social skills because they're in a place with other people and they enjoy what they're doing. So they'll start to laugh or talk with other people or express that there is enjoyment in what they're doing."

Jason discusses his patient attitude which has contributed to the gains that his students have made throughout the session, "Just being overall patient because nothing is going to change in a day, it's going to take time for anything major to happen",

Each instructor found that their students' independence and self-confidence developed in different circumstances (physical development, social development and through the initiation of attempting new skills), but they unanimously found that aiding swimmers in their development of independence and confidence in the water is beneficial. The range in preferred strategies to achieve this progress may vary between instructors, but these discussions describe the richness of each approach, providing insight into the instructor experience.

Chapter 7: Instructors' Experiences of Constructing Knowledge

In this section, I will discuss the additional themes which have emerged with regard to the ways instructors have chosen strategies they find effective in practice. Four themes tap into the instructors' knowledge construction: Peer Learning and Mentorship, Parental/Caregiver Participation, The Value of Certifications and Training.

Peer Learning and Mentorship

Taking on a new experience or engaging in unfamiliar territory is often quite daunting. Exchanging knowledge of coaching practices between peer coaches is quite helpful (Culver et al., 2006). For the swim instructor participants, learning from peer coaches as well as mentors is an important component of developing confidence in their swim instructing practices.

Adam greatly credits his "bosses" as well as other instructors who have previously worked with his students with ASD as important contributors to his success in developing effective instructional strategies. In the following quote, Adam discusses how he went about determining which strategies would be most effective for teaching his student with ASD, "Having my bosses and the parents telling me how to best approach teaching the specific child with ASD and what strategies work". He also mentions how previous instructors who have worked with his student have shared relevant information, "If another instructor has taught a child I have, they'll maybe tell me something to do as a tip or strategy".

Jennifer, like Adam, shared that communication with peer instructors was instructive,

"When I did volunteering, I learned a lot from that, because they're teaching me how to deal with them because they are a lot different than teaching a normal class. So I've gained that from other instructors. I definitely... because these kids have been here a lot,

for over four years probably. So I do communicate with the other instructors who have them, to get some tips on what I can do with them”.

Jennifer is aware that working with students with ASD requires adaptive strategies. Her interactions with other instructors did often provide relevant information.

Jason uses input forms that other instructors have completed for insight into which teaching strategies work for each individual child, “We do feedback kind of stuff at the end of every class or session. So just looking over that stuff to see more about the kids if I’m missing anything”.

Jason has also had experiences outside of the swimming environment with children with ASD. He notes that some of his mentors in his school have suggested relevant strategies,

“Part of it is in my schools. I’ve done stuff working with special... like Autistic kids. So I’ve seen like teachers and teaching professionals that actually know how to do stuff. So I kind of see what they use”.

Whether it be a peer coach or a valued mentor, each instructor relied on more knowledgeable or inspiring others.

Parental/Caregiver Support

The development of skills of children with ASD is reinforced by parental involvement in interventions (Crockett, Fleming, Doepke, & Stevens, 2007). All three interviews with the swim instructors stress the importance of parental/caregiver input.

Adam indicated that the parents of his student shared specific helpful, strategies. The parents proposed certain words that were “trigger” words for their child. Jason appreciated open communication with parents/caregivers, “Yeah so we contact the parents and ask them questions. Kind of like an interview kind of thing, they answer questions and we write stuff down to get an idea about the kids”.

Intake forms replete with information from parents are shared from one instructor to another on ways to work with their swimmers. Jennifer comments,

“We have these forms that, every session we call the parents and we have them answer all of these questions and we sort of jot it down, so for the first day I have like an idea of a lesson plan that I can do for them. And then on the first lesson, I can get a better understanding of what is better for them”.

These interactions with parents/caregivers support instructors in preparing to meet the needs of their students before the session has even begun.

The Value of Certifications and Training

Each swim instructor participant in this study has undergone a basic certification program from either the Canadian Red Cross or Lifesaving Society. However, we uncover that the basic swim instructor qualification is not enough to adequately prepare these instructors to meet the needs of their students with ASD. All three instructors discuss that they have either never heard of or never utilized the supplementary documents or trainings offered by the Canadian Red Cross or Lifesaving Society to cultivate their knowledge for teaching students with ASD.

Adam indicates his awareness of the Canadian Red Cross sources, but never felt they would help his intervention. He was not convinced he needed this information, especially since his student who is in “*Rookie Patrol*”, one of the highest levels a student can achieve.

“I just haven’t found a need for it (Canadian Red Cross documents). For my older child with ASD, I’m not even sure the resources would go that high. He’s technically in *Rookie Patrol* and the younger kids I teach don’t have the need for it...”

Jennifer and Jason, who are both Lifesaving Society certified, were not aware of the *Inclusivity Clinic*. Both are swim instructors in the same facility and both appreciated the additional

adaptive training they received. This particular adaptive training was optional and offered by their swimming site. Jason explains that the training program facilitated the process of solving skills, “From volunteering in the adapted aquatics program, just volunteering in general. I have learned so many different methods of teaching drills, ways to just approaching a problem”. This training focused on both in-water experience as well as peer to peer learning amongst instructors. Jennifer touches on her adaptive training which facilitated peer coaching.

“...we have training for the staff and volunteers who are working with the adaptive program. So we go over lesson plans, how to created them, we go over our folders here that just help keep track each week. Just so that when we make the lesson plans it’s the students and they’re improving”.

This training not only provides instructors with hands-on experience, but equips instructors with effective tools and strategies for children with ASD.

The instructors’ initiatives to seek parental guidance, engage with peers and mentors and participate in additional training have all contributed to their practice. These experiences have allowed the instructors to gain the knowledge they require to meet the needs of diverse students to ensure a safe and effective swimming lessons.

Chapter 8: Discussion

This research pursued two main goals: 1) to determine the swim instructing strategies which are most effective for teaching children with ASD how to swim and 2) to examine the experiences of swim instructors who teach children with ASD. To conduct this research, Canadian Red Cross documents which are accessible to individuals with a Canadian Red Cross instructor's certification and the *Inclusion Clinic* for Life Saving Society instructors were analyzed. Three swim instructors who have been teaching students with ASD for a minimum of six months, and hold a RC or LSS certification, were observed and interviewed. These sources of data were collected to explore the experiences of these instructors in their journeys to adjust their teaching strategies for their students with ASD. In this chapter, I will be discussing the findings from the document analysis, as well as the observations, and interviews. These findings were compared and contrasted to uncover effective practices and resources for teaching students with ASD. Cushion et al. (2006) express concerns that training programs for coaches are rarely challenged. To my knowledge, these two training programs have not been analyzed in terms of their relevance in teaching swimming to students with ASD. I will discuss the following main themes: Partnership in Planning for Positive Behaviours, Communication and Confident Interactions, Physical Progression, Assumptions about ASD, Parental Participation and Accumulation of Knowledge.

Partnership in Planning for Positive Behaviours

One of the most notable distinctions uncovered in the findings of this study, are the types of planning used to conduct lessons. The content analysis largely emphasized that instructors

should choose proactive strategies and routine to reduce the stereotypical behaviours of students. The instructors however, did not always follow a prescribed routine.

The CRCD manual suggest a behaviourist routine with limited deviation from the plan should be applied, “For those who have difficulty with change, teaching skills in the same order and in the same part of the pool using the same words or phrases can help with the learning process” (CRCD, p.7). If all lessons were conducted in a systematic manner it would not be conducive to real life situations. As discussed by Jull (2012) in her doctoral dissertation, swimming lessons are seen as a day-to-day activity, such as a trip with their family, and it is desirable for children with ASD to behave naturally in their daily life. If students act in a highly predictable manner, this strategy is not preparing them for unstructured periods which will occur. By consistently placing children with ASD in an environment that is too closely structured, positive behaviours are limited (Weiss et al., 2001).

The swim instructors often took a student-centered approach in their planning, rather than developing lessons that follow a strict routine and rely on repetition. Mediation guides a child’s development (Karpov, 2005). By focusing the lesson on the child’s progress, rather than on the consistency of the class, the instructors are acting as the mediators between the students and their development. Rogoff, Goodman Turkanis, & Barlett (2001) acknowledges that children, “... thrive in an environment that allows curriculum to emerge naturally with support from other children, co-oping parents, and teachers around their needs and interests” (p.91). Adults can act as motivators for children (Schaffer, 1992) and through collaboration with students, instructors can modify their lesson according to the response of the child. Strategies such as first-then steps in an activity and choice allow for flexibility in the delivery of the lessons, while informing students of the plan, so they are prepared for transitions.

A positive reinforcement strategy both predictable and explicit informs students that their performance is appropriate. The instructors cater the reinforcement to the preferences of the students, encouraging students to have control over their learning. Children with ASD have more intense responses to reinforcements for tasks than their peers (Groen, Wijers, Mulder, Waggeveld, Minderaa, & Althaus, 2008). A recent study with four male children with ASD, found that giving choice to the participants in activities resulted in positive behaviours (Ulke-Kurkcuoglu & Kircaali-Iftar, 2010).

Although only two of the three instructors provide students with choice as a strategy, the instructor who did not, did acknowledge the relevance of choice. Every instructor's cultural background and experiences will influence what they find suitable for their lessons. Rogoff (2003) expresses that conflicting perspectives of cultural influences are an important part of researching culture. Therefore, divergent views of the instructors in their feelings about allowing choice are essential in this research. Although certain strategies may be effective, the context and the students will determine the relevance of the strategy in each unique lesson.

All three instructors found effective for encouraging positive behaviours was through the use of positive language. In line with other research in this area, the use of positive language has been proven to be successful in encouraging individuals with ASD to participate in activities that they previously avoided (Schmidt, Luiselli, Rue, & Whalley, 2013).

In summary, the instructors use a student-centred approach in planning their lesson so that the experience is more joyful. The use of reward systems, choice, and positive reinforcement facilitated the delivery of more successful lessons.

Confident Communication and Fostering Interactions

Developing an effective communication system is an important aspect of teaching students with ASD. The inclusion of a number of different systems including symbolic systems have more recently been highlighted as mediators within sociocultural dialogue (John-Steiner & Mahn, 1996). One item in particular that is mentioned by the instructors as well as described in the two training programs is the use of PECS to communicate effectively with students. This system is an important tool for social development in children with ASD (Didden, 2012; Kravitz et al., 2002). Along with this system of alternative communication, the instructors named a number of other effective strategies to encourage communication. The CRCO clearly articulates that there are a number of ways in which communication can take place,

“Communication doesn’t have to mean language – behaviour and body language are also forms of communication. Swimmers may simply point at an object (“I want that”) or turn away from an instructor (“Please don’t touch me”). As long as we are “listening” to all parts of communication we are likely to still “hear” the message they are sending” (p.10).

The IC manual lists a number of communication forms and encourages the use of websites with additional strategies to further support instructors in their repertoire of strategies to stimulate communication.

Unfortunately, both training programs fall short in terms of taking communication one step further and teaching students to use these communication skills to enhance social skills with their peers. A reason that children with ASD face social challenges is related to interpreting intent in communication (Hobson, 1986). The manuals indicate ways that instructors can encourage their students’ communication, but simply do not consider social engagement. The instructors, however, raise the point that it is the student’s level of confidence which boosts social

interactions with peers. For students with ASD, simply providing communication tools is not enough to stimulate social engagement. The students need an environment which will aid with the decoding of social interactions and build students' confidence.

The instructors provide students with the tools and the environment for social engagements. Students with ASD are out of their typical comfort zone in the pool, but with an instructor's encouragement, they are more confident to initiate conversation with others. A student-centered approach, which instructors believe is most effective in their lessons, helps to increase this comfort and ultimately their student's confidence. As mentioned by Jason, his students express their enjoyment for swimming, which increases their comfort level. Previous research has indicated that a child's enjoyment of an activity is an essential component of their participation and children with ASD favour swimming in particular, more so than other children (Eversole, Collins, Karmarkar, Colton, Quinn, Karsbaek Johnson, Callier, & Hilton, 2016).

Physical Progression

Physical activity and participation in recreational activities are important conditions in the learning experiences of children with ASD. However, children with ASD as well as children with other disabilities are less involved in these kinds of activities compared to their peers (Law, Anaby, Teplicky, Khetani, Coster, & Bedell, 2013). One of the reasons swimming lessons are an effective way to involve children with ASD is the high intensity of physical movement that this activity requires (Rogers, Hemmeter & Wolery, 2010). This high intensity dimension stimulates motor skills and level of participating with peers.

In order for this participation to be a successful experience, it is important that instructors adapt their lessons accordingly in order to meet the needs of their students (Duquette, 2013). Children with ASD often have difficulty in group sports (Miltenberger & Charlop, 2014). In the

CRCD manual, it is suggested that instructors use assistive tools to improve the delivery of their lessons. The limited practical information in the documents available raises a concern for the instructors with limited experience, as there is no practical guidance for the instructor to implement these assistive tools in the lesson.

In terms of motor development, all three instructors used specific strategies that they found effective for their students with ASD. Interestingly, the use of breaking down strokes and teaching in steps, as well as relying physical cues are used by all of coaches. In previous research, cues (Yilmaz et al., 2004) as well as physical prompting have proven to be an effective strategy for motor learning in children with ASD (Coe, Matson, Fee, Manikam, & Linarello, 1990).

Children with ASD have difficulty processing motor sensory input (Rogers & Ozonoff, 2005), making it a must for instructors to use the proper strategies to account for this weakness. The IC does provide effective information for adapting strokes, but it is the instructors who have indicated specific strategies such as contact communication for improved motor development of their students.

Assumptions about ASD

A theme that consistently appears is the effect that assumptions towards students with ASD has on the quality of lessons. Although this may not directly influence the strategies instructors are using, it is the duty of educators to provide equal opportunities and meet the needs of each individual in sports education (Hargreaves, 2003). Vygotsky proposed that a child's learning is a direct result of their social integration (Rieber & Robinson, 2004). If instructors approach their lessons or practices with firm assumptions regarding their students, then this may limit the opportunities that they will provide to their students. As discussed by Tom Bentley (1998),

“ ... It requires a shift in our thinking about the fundamental organizational unit of education, from the school, an institution where learning is organized, defined and contained, to the learner, an intelligent agent with the potential to learn from any and all of her encounters with the world around her” (p.1).

It is the responsibility of educators, regardless of their discipline, to encourage student learning so that students can give their best performance. According to Rosenthal and Jacobson (1968), if an educator has pre-determined expectations for their students, then the students respond accordingly.

All three instructors encouraged their students to be successful as they believed the swimmers were capable of completing the swimming activity. Although this study aimed to observe instructors' strategies specifically geared toward meeting the needs of students with ASD, these strategies focused on helping these swimmers perform well socially and physically. This is not possible if instructors do not believe that their students can perform well. Adam explains that because a student does not progress immediately does not mean the student is not able to complete the skill. In line with Kidman (2005), coaches must view athletes as a whole person. She emphasizes the importance of using a 'holistic' approach.

Floden (1989) expresses that there is a gap in coach education, on the ways in which a coach's strategies are understood by athletes. Coaches are too quick to assume that it is not their coaching which is the issue, but rather the athlete (Jones, 2006). Coaching strategies need to be examined for their effectiveness. The CRCSD manual suggests that, “the more fun *you* have, the more fun *they* have” (CRCSD, p.9). Unfortunately, this is a very superficial suggestion on the important aspects of working with children with special needs.

It is the instructor's responsibility to adjust and modify their lessons to meet the needs of their students with ASD rather than placing the blame of a lack of progress on their students. An optimistic outlook coupled with effective strategies at hand, will ensure quality learning experiences.

Parental/Caregiver Participation

Parental/caregiver involvement in the educational planning process with children with ASD is of high importance (Lake & Billingsly, 2000). However, when parents of children with ASD feel as though professional educators are not meeting the needs of their children, there is a loss of trust (Stoner, Bock, Thompson, Angell, Heyl, & Crowley, 2005). It is important for swim instructors, as educators, to establish a partnership with parents/caregivers in order to maintain continuous communication with them. Parental/caregiver involvement is based on, "...need for frequent, honest, and open communication" (Stoner et al., 2005, p.47) between parents/caregivers and educators.

Both the CRCDD and the IC manuals recommend the use of intake forms to gather information on the profile of their swimmers. Another strategy as mentioned previously in the CRCDD manual is the need for consistent evaluation. Both training documents propose strategies for reaching out to parents. Stoner et al. (2005) mention the benefits that occur when educators, "foster communication with parents by recognizing and valuing parental expertise..." (p.49). The CRCDD manual invites instructors to, "encourage the parents to work with you..." (CRCDD, p.11). The instructors unanimously credit the parents/caregivers as contributors to the success in their swimming lessons.

A difficulty that parents face in terms of their child's education is a lack of transparency (Renty et al., 2006). As the relationship between the coach and parents/caregiver affect the

child's lessons, it takes time to cultivate trust (Rogoff et al., 2001). A large number of parents/caregivers of swimmers with ASD find that their child's involvement in swimming lessons to be of high importance (Mactavish & Schleien, 2000) and thus, are willing to collaborate with the instructors.

Acquisition of Knowledge

One of the main focuses of this study was to delve into the experiences of instructors who teach children with ASD in order to ascertain how they accessed new knowledge (Camiré, Trudel, & Forneris, 2014). The instructors credit additional training, peer and mentor interactions and parents/caregivers as the most important contribution for learning. The three instructors have clearly expressed that they have not consulted the CRCD or the IC manuals for information on instructional strategies.

We have discussed that coaches often choose additional training courses when coaching athletes with disabilities (Jones, Potrac, Armour, 2003). Two of the instructors in this study credit additional courses as sources of knowledge. As well, volunteering in actual lessons with students with disabilities in order to have the hands-on experience of how to apply these strategies was beneficial. To recapitulate, "...there is agreement among coaches that learning from experience plays an important role in their development" (Culver & Trudel 2005, p. 97).

Mentorship and peer interaction have also enriched the experience of the instructors. Other instructors shared strategies, as well as provided information about students. In a study conducted by Stoszowski et al. (2016), it was revealed that coaches prefer knowledge building in formal or informal learning situations where social interactions are encouraged. According to Lave et al. (1991), "Legitimate peripheral participation is proposed as a descriptor of engagement in social practice that entails learning as an integral constituent" (p.35).

The participation in social interactions is an effective way for knowledge to be gained. It has also been suggested that individuals are more inspired when they connect with other individuals they can relate to (Deci & Ryan, 2001). These interactions are especially important as it grounds knowledge into a context. Abraham and Collins (2011) stress strategies used by one coach can be used by another. The IC manual encourages such exchanges between instructors in training as these exchanges prepare instructors to better meet the needs of their students. However, instructors did not read the two manuals.

Social interactions and additional training and consultations with parents/caregivers, are the main sources of knowledge used by the instructors. Each individual will have a unique experience in their knowledge building.

Contributions to Research

Research on the training programs of instructors of children with ASD are scant (Jull, 2012; Cross, 2011). This study contributes to this field, as it explores the experiences of swim instructors which are not geared towards a specific age group or location. Specific intervention strategies reinforcing social interactions (Chu et al., 2012), motor performance (Yanardag et al., 2013) and a reduction in stereotypical behaviours (Vonder Hulls et al., 2006), were reviewed. This study describes strategies which also enhance these three areas through the delivery of swimming lessons. Significant strategies can be noted in terms of their relevance to key sociocultural concepts in (Appendix G).

This study contributes to coaching pedagogy. Additional training is an important aspect of coaching (Camiré et al., 2014; Jones et al., 2003). Informed coaching practice improves teaching by way of new learning and critical reflection (Stoszkowski et al., 2016). Experiential learning is an important tool in coaching (Stoszkowski et al., 2016; Culver et al., 2005).

Previous studies have indicated that the involvement of parents/caregivers with children with ASD in their educational journey is important for the success of these children (Lake et al., 2000). The instructors in this study emphasize the importance of consistent communication and transparency with parents (Stoner et al., 2005; Renty et al., 2006). The findings of this study do bring a unique lens to the education of students with ASD in aquatic settings.

Limitations

Due to the time constraints of a master's thesis, limitations were apparent. Only three instructors were successfully recruited to participate. The comparison of experiences and preferred strategies were specific to these individuals. A significant number of sites were contacted over several months and five sites agreed initially to participate, but at the end only

two followed through. One of these sites is a privately owned swim school and the other is a public recreational centre. Access to a larger number of sites would have offered more diversity and representation.

The variation in the amount of experience of the three instructors could have an effect on this study. Instructors with a greater amount of experience could have fostered more diversified experiences in instructing swimmers with ASD. As observations of instructors were completed over a two week period, this particular time frame limited the time taken to choose strategies. With a longer observation period, a greater number of strategies could have been identified.

I did not obtain consent from the students in the lessons, their ideas would have helped in discerning strategies of effective practice. The informants who run the Canadian Red Cross and Life Saving Society certification programs were not consulted. Obtaining information from trainers would have contextualized the document analysis. The document analysis is analyzed strictly on the information in the documents. However, trainers who have had experience with these materials in a practical application may have other opinions on the content.

Future Directions

This is the first study conducted on the strategies of effective practice for students with ASD, as defined by Canadian Red Cross or Lifesaving Society manuals. No prior research has explored the experiences of these instructors. Future research with a similar methodology is suggested with a greater number of participants in order to enrich the spectrum of strategies to use for children with ASD. Similarly, more research should be conducted in diverse aquatic facilities. Conducting research of this nature comparing more recreational facilities and private swim schools may yield interesting results, regardless of whether the instructors have undergone the same basic instructor qualification training.

Research which focuses on the trainers informed by the RC and LSS certification programs should be conducted, to delve into the experiences and views of these facilitators and the quality of certification programs. The RC has recently added new information for swim instructors to use in their swim instructor network. Research which examines the quality of these new documents and how they are influencing instructors' lessons should be conducted.

Lastly, research on a more diversified level of functioning should be considered of the children with ASD. The strategies that are most effective for a child with ASD may vary depending on their levels of functioning.

Conclusion

Physical activity is an essential component of a healthy lifestyle for children (Fragala-Pinkham, 2011). However, for children with ASD, there are often a limited number of informed coaches to facilitate appropriate physical activity programming for this youth population (Mische-Lawson et al., 2013). With the notable increase in the number of children diagnosed with ASD (Keyes et al., 2012), it is important that good quality intervention research be conducted in the field of wellness and physical activity for children with ASD. Aquatic based lessons have been proven to be a particularly positive form of physical activity for children with ASD (Lee et al., 2013). No study has examined how effective, basic certification programs in Canada have trained swim instructors to teach students with ASD. The aim of this study was to identify swim instructing strategies which enhance the social interactions, and motor performance, all the while, reducing stereotypical behaviours of children with ASD. Rogoff (2003) expresses that there is not an individual or correct way for knowledge to be transferred. However, the experiences of these instructors have provided insight into strategies which have been successful in their lessons.

Although certification programs and basic training are important for new coaches, they often access other resources to enhance their practice (Lemyre et al., 2007). This study has identified that the participation in additional training programs specific to coaching individuals with special needs and engaging with mentors or with peer instructors are knowledge building. Instructors have also credited communication with the parents/guardians as a valuable source for learning which strategies are effective for their child with ASD. The instructors in this study have not found that the additional resources offered by RC and LSS have been helpful in their construction of knowledge for instructing students with ASD. Through this comprehensive discussion of effective instructional strategies and resources for further instructional support, instructors will have the tools to teach their students with ASD confidently and improve their students' participation in physical activity and quality of life.

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Definitions of Key Concepts in a Sociocultural Lens (Appendix A)

Key Concepts/ Texts	Theorists	Definition
Zone of Proximal Development	Vygotsky	<ul style="list-style-type: none"> - Vygotsky's Zone of Proximal Development is the cognitive space that can be developed through interactions with educators and peers (Kozulin, Gindis, Ageyev, & Miller, 2003) - This concept suggests that one way that children may reach their full potential, is through engagements with adults and more advanced peers to acquire new skills and increase competencies (Kozulin, et al., 2003). - Vygotsky explains that a child with a disability may develop differently from their peers, but this does not indicate that this development is of any less significance (Gindis, 2004).
Mediation	Vygotsky	<ul style="list-style-type: none"> - Vygotsky asserts that mediation guides interactions between humans and objects. Semiotics are the tools which act as facilitators in mediating this learning (John-Steiner & Mahn, 1996). - Symbols may not have meaning until properly mediated through interactions (Kozulin, 2003). - According to Vygotsky, a child's development is the result of mediation, as a child does not develop alone (Karpov, 2004, p.138). - He proposed that a child's learning is a direct result of their social integration (Rieber & Robinson, 2004), implying that without a child's exposure to experiences, they may not have access to mediated learning situations.
The Cultural Nature of Human Development	Rogoff	<ul style="list-style-type: none"> - Rogoff proposed that development is a result of guided participation (Rogoff, 2003) and for children in particular, their personal experiences in cultural participation are guided by their families and histories (Gutiérrez & Rogoff, 2003). - Rogoff noted that, "<i>Understanding one's own cultural heritage, as well as other cultural communities, requires taking the perspective of people of contrasting backgrounds</i>" (Rogoff, 2003, p.11). - She expresses that conflicting perspectives of cultural influences are an important part of researching culture (Rogoff, 2003). - There is not an individual or correct way for knowledge to be transferred, but rather it is the awareness of, "...which strategies are helpful in what circumstances

		<p>(p.253), as “<i>There is not likely to be One Best Way</i>” (2003, p.12).</p> <ul style="list-style-type: none"> - Rogoff, Goodman Turkanis, & Barlett (2001) acknowledges that children, “... thrive in an environment that allows curriculum to emerge naturally with support from other children, co-oping parents, and teachers around their needs and interests” (p.91). - Rogoff (2003) describes that, “children everywhere learn skills in the context of their use and with the aid of those around them” (p.69).
Legitimate Peripheral Participation	Lave & Wenger	<ul style="list-style-type: none"> - Lave & Wenger discuss such concepts as “legitimate peripheral participation” which explore interactions and social learning that enrich one’s practice and construction of knowledge. Lave & Wenger describe the journey from new-comer to old-timers in order to gain competence through community participation. - Lave et al., (1991), “Legitimate peripheral participation is proposed as a descriptor of engagement in social practice that entails learning as an integral constituent” (p.35). - They suggest that new-comers and old-comers of a particular practice will have varying experiences and ways of constructing knowledge (Lave et al., 1991).



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Ethics Approval Notice
Social Sciences and Humanities REB

Principal Investigator / Supervisor / Co-investigator(s) / Student(s)

<u>First Name</u>	<u>Last Name</u>	<u>Affiliation</u>	<u>Role</u>
Raymond N.	LeBlanc	Education / Education	Supervisor
Erin	Kraft	Education / Education	Student Researcher

File Number: 11-15-13

Type of Project: Master's Thesis

Title: Exploring the experience of coaching children with Autism Spectrum Disorder in Canadian Aquatic Programs

Approval Date (mm/dd/yyyy)	Expiry Date (mm/dd/yyyy)	Approval Type
12/17/2015	12/16/2016	Ia

(Ia: Approval, Ib: Approval for initial stage only)

Special Conditions / Comments:
N/A



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Project title: Exploring the Experiences of Coaching Children with Autism Spectrum Disorder in Canadian Aquatic Programs (Appendix C)

Names of researcher and supervisor with contact information

Ms. Erin Kraft
Faculty of Education
University of Ottawa

Dr. Raymond Leblanc
Faculty of Education
University of Ottawa

Invitation to Participate: I have been invited to participate in a research project conducted by Ms. Erin Kraft under the supervision of Professor Raymond Leblanc as part of a Masters of Arts in Education thesis paper, at the University of Ottawa.

Purpose of the Study: The purpose of the study is to examine swim instructors teaching children with an Autism Spectrum Disorder (ASD) diagnosis, to identify which swim instruction strategies are most congruent with the needs of children with ASD.

Participation: My participation will consist of participating in a demographic questionnaire regarding my experience as a swim instructor. I will also be recorded through written observations over the period of two swimming lessons, so that these recordings can be used during a stimulated recall to help inform an interview that will take place following each lesson. The time needed for this is approximately 30 minutes for the initial questionnaire and approximately 30 to 45 minutes for the interview. This will take place at the location of my swim school and these will occur over a two week period.

Assessment of risks: My participation in this study entails no foreseeable risks. However, if I experience any discomfort, Ms. Erin Kraft has assured me that she will make every effort to minimize this discomfort. I may decide to stop my participation at any time.

Benefits: By expressing some personal ideas about the most effective swim instructing strategies for children with an ASD diagnosis, I will contribute to an enlarged understanding of how to most effectively meet the needs of this youth group during their participation in swimming lessons. Participants will also receive a \$10 gift card to show our gratitude for their participation in this study. Participants may keep the gift card, regardless of whether they remain as participants throughout the duration of the study.

Privacy of participants: I have received assurance from Ms. Erin Kraft that the information I share will remain strictly confidential. My identity will be protected. The contents will be used only for her thesis work.

Confidentiality and conservation of data: The data will be used for the purpose of the MA thesis. If I give my permission, the data may also be used as part of the future work of the student researcher. I have been assured that the written recordings and transcripts will be kept in a secure manner at the researcher's home or office during the research, and upon completion of the project will be stored by Professor Raymond Leblanc. In five years, all material data will be shredded and electronic data will be erased. If used as part of the student researcher's later work, all data will be securely safeguarded by the student researcher and/or his/her thesis supervisor for a minimum of five years along with the other data collected for the thesis; and when research is complete, all material data will be shredded and electronic data will be erased.

Voluntary Participation: I am under no obligation to participate and if I choose to participate, I can withdraw from the study at any time and/or refuse to answer any questions, without suffering any negative consequences. If I choose to withdraw, all data gathered until the time of withdrawal will be destroyed.

Acceptance: I, _____ [*Name of participant*], agree to participate in the above research study conducted by Ms. Erin Kraft as part of her Masters of Arts in Education thesis paper, at the Faculty of Education, University of Ottawa under the supervision of Professor Raymond Leblanc.

I also AGREE that the data may be used for the future work of the student researcher.

YES

NO

If I have any questions about the study, I may contact the Ms. Erin Kraft or Professor Raymond Leblanc.

If I have any questions regarding the ethical conduct of this study, I may contact the Office of Research Ethics and Integrity, University of Ottawa, Tabaret Hall, 550 Cumberland Street, Room 154, Ottawa, ON K1N 6N5

Tel.: (613) 562-5387

Email: ethics@uottawa.ca

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

Participant's name

Signature:

Date:

Researcher's name

Signature:

Date:



Letter of Information (Appendix D)

Project title: Exploring the Experiences of Coaching Children with Autism Spectrum Disorder in Canadian Aquatic Programs

Ms. Erin Kraft
Master's Student
Faculty of Education
University of Ottawa

Dr. Raymond Leblanc
Acting Dean
Faculty of Education
University of Ottawa

Office of Research Ethics
and Integrity
University of Ottawa

Hello,

My name is Erin Kraft and I am a student at the University of Ottawa in the Masters of Arts in Education program. If you are receiving this letter, it is because your child's swim instructor will be participating in my master's thesis research. The goal of this research is to observe swim instructors teaching children with ASD, to discover the swim instructing strategies which are most effective in meeting the needs of children with ASD.

Your child will **not** be observed during this research. I will strictly be taking notes regarding the teaching strategies that the swim instructors are using to meet the needs of their students. Although I will be present during the swimming lessons, it is for the purpose of collecting data to develop a repertoire of teaching strategies that are effective for teaching students with ASD to contribute to the field of education.

Should you have any questions or concerns regarding this research, please do not hesitate to contact me.

Thank you,

Erin Kraft

Appendix E- Swim Instructor Questionnaire:

Exploring the Experience of Coaching Children with Autism Spectrum Disorder in Canadian Aquatic Programs

Time of Questionnaire:

Date:

Place:

Participant:

Position of Participant:

1. When did you become a certified swim instructor?
2. How long have you been swim instructing?
3. Have you taught children with an Autism Spectrum Disorder (ASD) diagnosis?
4. If yes, did you feel prepared? (yes/no) and please explain:

The purpose of my study is to learn about your experience of teaching children with ASD and to discover what strategies have worked and have not worked for you.

Appendix F- Sample Questions for Discussion with Instructors:

1. Can you tell me about your training to become a swim instructor?
2. After you completed your initial swim instructor training, did you feel adequately prepared to teach children with ASD?
3. What is your experience teaching children with Autism Spectrum Disorder?
4. Can you tell me how your training has helped you teach children with ASD?
5. Can you speak to how you went about accumulating your knowledge for how to teach children with ASD?
6. How did you go about finding what strategies work best?
7. Are there any other resources that you have used to help teach with your children with ASD?
8. What other ways have you gone about deciding which strategies are most effective?
9. What kinds of forms have you used in order to help facilitate your lessons?
10. What was your perception going into teaching children with ASD? Did you have any prior assumptions about teaching children with ASD?
11. Which strategies, if you have any specifically, do you find most effective for teaching children with ASD?
12. How do you go about modifying strokes so that your children with ASD can be successful achieving them?
13. How do you find water plays into the child's development?
14. Can you speak to the use of non-verbal cues? Do you ever use any of those for your classes?
15. How do you find non-verbal cues help in your students' ability to show their skills?
16. How do you use physical manipulation in your lessons?

17. The skills that you work on, are these things you have chosen to work on with your students, or are those based on the parent's expectations?
18. Are there any strategies in particular that you find effective to help with these social interactions?
19. How do you use reward systems in your lessons?
20. What do you personally do to re-direct behaviours?
21. Do you find that you have learned any of the techniques that you use, from other instructors?
22. Do you have any else that you think would be important to help other instructors teach children with ASD? Any strategies that you find useful?
23. Do you have any else that you want to add about your experiences?

Key Sociocultural Concepts in Swim Coaches Experiences (Appendix G)

Key Concepts/Texts	Theorists	Evidence of Concepts in Findings
Zone of Proximal Development	Vygotsky	Adam used physical cues throughout his lessons to introduce new skills and build on his student's previous knowledge. He would hold on to his student's hands and move them in a circular motion to practice the arm movements. Along with this, he would call out, "pull, breathe, whip, glide", repeatedly with each circle of the arms. Adam's physical intervention on his student's arms along with his verbal cues accompanying the stroke action, reflects a hands-on approach in skill development. Through this interaction, Adam was imparting his expertise to increase the student's motor competencies and cognitive development. As described by Vygotsky, the ZPD may be accessed through educators and their interactions with children.
Mediation	Vygotsky	Through the use of tools such as Picture Exchange Communication Systems (PECS), instructors are showing evidence of symbolic mediators for the enhancement of student learning. The Canadian Red Cross Documents were also supportive in their use of PECS and provided instructors with specific pool related examples to further prepare instructors for a successful lesson. As discussed by Vygotsky, symbols may not have meaning until they are mediated through interactions. Through the instructors' integration of PECS into a swimming context, they are mediating these tools to guide the learning of their students.
The Cultural Nature of Human Development	Rogoff	The instructors in this research discuss the importance of including students in the planning of a lesson to limit their assumptions towards their students' capabilities. The inclusion of a child's opinion through strategies such as choice, allows the student to be a collaborative partner in the planning of an effective lesson. Rogoff suggests that there is no one way to effectively transfer knowledge. She discussed how evidently culture is woven into an individual's upbringing, and how we come with our own unique set of experience and assumptions about cultural regularities. She also expresses that curriculum is

		<p>most effective when it emerges naturally, rather than planning with our own expectations. So rather than planning in advance, the instructors include their students in the facilitation of an effective lessons to meet each individual's needs.</p>
<p>Legitimate Peripheral Participation</p>	<p>Lave & Wenger</p>	<p>The instructors credited their “bosses” and other more experienced mentors as main sources for accessing swim instructing knowledge. Jennifer and Jason participated in a volunteer program where they would observe and engage socially with other instructors to gain instructing strategies specifically for their students with ASD. Lave & Wenger promote social learning between new-comers and old-comers to transfer knowledge. This is a particularly effective informal learning tool for instructors who coaching children with ASD, as formal training opportunities are limited.</p>