Investigating a coach's facilitation of learning situations among Masters and youth athletes

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Abstract

This thesis aimed to uncover age-related differences in a coach's approaches to facilitate learning for Masters athletes (MAs) and youth athletes, using the Andragogy in Practice Model (Knowles et al., 2012) as a guide. Data in this instrumental case study were gathered from three semi-structured coach interviews, four focus group interviews (two with each cohort), and moderate participant observation (Spradley, 1980) to inform interview content. Results of qualitative analyses suggested, through the coach and athletes' perspectives, that the coach oriented her approaches differently between MAs (aged 27-70) and youth (aged 14-15). She allowed the MAs to self-direct and make decisions, and encouraged them to ask questions collaboratively. Comparatively, she held a directed control and structure for the youth's training influenced by highly competitive expectations. Despite differences, we acknowledge andragogy's usefulness with both cohorts, and suggest that coaches recognize nuances between age groups that may influence how they orient their approaches.

Key words: andragogy, coaching, learning, Masters athletes, pedagogy, sport, teaching, youth

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CHAPTER 1: REVIEW OF THE LITERATURE

Coaches play a prominent role in creating and fostering learning situations for their athletes. To ensure that effective learning is achieved in these situations, coaches are tasked with orienting their approaches in ways that depend upon a number of categorizations, possibly including the athlete's age. However, the majority of research studies considering age-based categorization and associated coaching implications have focused simply upon age differences within youth cohorts (Gilbert & Trudel, 2004), without outlining potential nuances that may exist in coaching adult (i.e., Masters) athletes.

Coaches of Masters athletes (MAs) work with sport participants who are generally (though there are exceptions for some sports) 35 years of age or older, formally enrolled in a sport club, and who engage in training to prepare for competition (Young & Medic, 2012). These coaches, like at other age levels, are responsible for facilitating learning in relation to their athletes' needs and preferences (Chelladurai & Reimer, 1998). However, emerging findings highlight that coaches of MAs may potentially need to take specific approaches when coaching adults. Callary, Rathwell, and Young (2015) reported that MAs have specific preferences regarding their coach's behaviours, attributes, and personal characteristics. Specifically, MAs want coaches with athletic experiences in the sport, who update and share their professional knowledge through formal training, who are reliable and hold athletes accountable to training, who foster mutual caring, who maximize the efficiency of the training through variation and autonomy, who provide personalized feedback and intellectual stimulation, and who act as role models in competition (Callary et al., 2015). This seminal research sets the stage for understanding why MAs prefer specific approaches and behaviours from their coach, and especially how these preferences relate to their learning processes in sport. However, there has

been no research to explore whether coaches of MAs acknowledge that they change their approaches in light of adults' learning preferences and various situational attributes relating to adult learners in sport. Therefore, the purpose of the proposed study was to understand a coach's approaches to facilitating learning situations for his/her MAs and youth athletes, and to examine whether and how these approaches differed between the groups.

The conceptual framework used in this investigation was the Andragogy in Practice Model (APM; Knowles, Holton III, & Swanson, 2012). The model is derived from andragogy, defined as the art and science of helping adults learn, and comprises six distinct adult learning principles. Knowles et al. (2012) contend that an understanding of these principles enables adult educators to develop meaningful and effective teaching approaches by providing more autonomous and decision-making opportunities in learning situations. The study assessed these principles and their links to coaching and learning processes within a sport domain. Despite its prominence in education, the application of andragogical principles to sport learning is an area for which no published empirical research exists. Thus, the current study explored this framework for adult learning within a sport context. The results investigated whether and how coaches, as teachers in sport, develop and orchestrate learning situations, and how approaches for coaching adults may be different than those for coaching youth.

Conceptual Framework: The Andragogy in Practice Model

Andragogy refers to helping adults learn. The characteristics of adults as learners result from the multiple meanings of what constitutes adulthood. Beyond the biological and legal definitions, an adult is one who, socially, assumes and performs various adult roles, such as the role of a parent, spouse, or full-time worker. Psychologically, adulthood is reached when one attains a self-directing nature, assuming responsibility for happenings that occur in one's life

(Knowles et al., 2012). Although arriving at a self-directing self-concept typically occurs progressively over time, it is the combination of all aspects of adulthood that result in characteristics that set adult learners apart from youth (Knowles et al., 2012).

Knowles (1970) coined the term "andragogy" as an antithesis to traditional teaching approaches, which he claimed were teacher-oriented and directive in nature. In traditional approaches, the teacher takes ownership in deciding the content to be delivered and the ways in which it is arranged and transmitted in sequence to the students. Teachers are granted full responsibility in deciding what is learned and how it is learned (Knowles et al., 2012). Students assume a dependent role and learn what the teacher tells them, driven by external motivators (i.e., marks) and they view learning as a means to an end (Knowles et al., 2012). Alternatively, through the APM, the teacher provides the learners with opportunities to become actively involved in acquiring information rather than simply transmitting it to them (Knowles et al., 2012). Involving the learners as active participants in their learning is what sets andragogy apart from traditional approaches; it complies with adult learners' needs by allowing for mutual engagement in the planning, delivery, and evaluation stages of the learning process, which is expected to result in a more rewarding experience for adult learners (Knowles et al., 2012).

Knowles, Holton III, and Swanson (1998) realized that andragogy could potentially be applied across multiple domains of adult learning. The APM (see Appendix A) was designed as a conceptual framework to integrate andragogy's six core principles with individual and situational differences present in specific contexts, as well as with individuals' goals and purposes for learning (Knowles et al., 1998). Via interaction of these three dimensions, the model acknowledges the heterogeneity among adult learners and their learning processes, allowing adult learning to be considered as a flexible construct highly dependent upon individual and

situational differences across various domains. Thus, adult educators may use aspects of this framework to facilitate appropriate learning situations for each respective individual (Knowles et al., 2012).

Andragogical Principles. The characteristics of adult learners have been conceptualized and presented as a set of six distinct principles. These core principles are: (1) the learner's need to know, (2) self-concept of the learner, (3) prior experiences of the learner, (4) readiness to learn, (5) orientation to learning, and (6) motivation to learn.

To effectively create learning situations for adults, adult educators should be mindful that many adults have a *need to know* why they need to learn something before undertaking to learn it. Knowles et al. (2012) claim that adults often want to know how the learning will be conducted, what types of information will be learned, and why learning the content is important. Research that has supported this premise suggests that, as a method to enhance learning effectiveness, it may be important for adult educators to engage adults in a collaborative planning and facilitation process for their learning (Knowles et al., 2012).

Adult educators are also tasked with structuring the learning situation in ways that attend to adults' *self-concept*. The principle stipulates that, generally, adults seek to be regarded as being capable of self-directing their learning. There exist two conceptions of self-directed learning, each highlighting adults' disposition for taking control of the situation to pursue effective learning (Knowles et al., 2012). The first dimension is that of self-teaching, which means that adult educators should look to afford opportunities and resources to the learner in such a way that he/she can then exercise his/her capability to teach oneself the subject matter. The second dimension is personal autonomy, meaning that adult educators should provide adults

with the freedom to choose their own learning strategy and to take ownership of the learning process (Knowles et al., 2012).

The third principle suggests that adult learners benefit from learning situations that allow their *prior experiences* to be used as both resources for learning and methods of shaping their self-identity. Adults' ability to draw upon an often rich reservoir of prior experiences that have accumulated across their lifespan establishes a wide range of individual differences and ultimately has the potential to shape the ways in which they intend to learn (Knowles et al., 2012). Knowles and colleagues (2012) contend that adult educators may nurture the most effective learners by enabling them to reflect upon prior experiences and to compare these past experiences with content/tasks confronted in the current situation, thereby helping learners to realize when their previous knowledge is no longer appropriate or is inadequate for the current situation.

Next, adults generally become ready to learn when they require learning to understand how to cope with certain life situations or to effectively move from one developmental stage to another (Knowles et al., 2012). Pratt (1998) posited that this *readiness to learn* is a situational construct, conceptualized in terms of direction and support. Direction refers to the extent that learners need others to assist or guide them in the learning process, while support is the extent that learners need affective encouragement from others. Knowles et al. (2012) suggest that learning situations afforded by adult educators that are timely and consonant with adults' needs for direction and support will likely be fruitful for learning.

The fifth adult learning principle claims that adults often have an *orientation to learning* where they prefer having information presented as being meaningful to a real-life context (Knowles et al., 2012). Thus, the notion of experiential learning is important, whereby their

interest in learning is driven by the relevance of that learning to their current experiences (Knowles et al., 2012). Learning occurs as an interaction between the content delivered and the experiences of the individual, each transforming one another so that what is learned can be applied beyond the learning environment in order to solve or overcome real-life problems through a problem-based approach (Knowles et al., 2012). Knowles and colleagues (2012) claim that adult educators who are able to provide learning situations with a life-centred orientation will be better able to enhance learning among adults.

Finally, effective andragogical practices should consider adults' *motivation to learn* to properly facilitate their learning. Knowles and colleagues (2012) suggest that the most influential motivators for adults are those that satiate personal growth, including improved quality of life, satisfaction, and self-esteem. Wlodowski (1985) posits that adults have a need to be successful learners, to have volition in their learning, to learn something valuable to them personally, and to experience enjoyment in the learning process, which are all aspects of intrinsic motivation. Wlodowski asserts that adult educators should work to demonstrate characteristics of expertise, empathy, enthusiasm, and clarity in their practice in order to intrinsically motivate adults in their learning endeavours.

Individual and Situational Differences. Over time, individuals are exposed to life situations and occurrences that result in a rich accumulation of experiences (Knowles et al., 2012). Adults progressively shape their self-identity through these experiences, to the point where they become representative of who they are as individuals (Knowles et al., 2012). Further, as life experience is unique to each individual, there exists the potential for a wide range of individual differences among a group of adult learners; for instance, in their cognitive abilities, prior knowledge, and personality (Knowles et al., 2012). Knowles and colleagues suggest that

having an understanding and awareness of individual learner differences may allow adult educators to recognize which andragogical principles are applicable to certain individuals and allow them to adapt teaching in ways that adhere to the learners' characteristics. This approach, with regard to the uniqueness of individual learners, lends to the flexibility of the principles within the APM. For example, a high degree of self-directedness afforded to adults may not always be practical, depending on the individual. An adult who is already well versed in the subject matter and who has strong learning skills would likely be apt to perform well in a highly self-directed environment. However, an adult learner who is inexperienced in a content area and who often seeks guidance and direction in their learning would probably not thrive in the same environment (Knowles et al., 2012).

The flexibility of the model is also a function of interactions occurring between the various principles. Using the same example, adult learners with prior experiences in the subject matter would be more likely to engage in and seek out opportunities for self-directedness. Individuals with a greater wealth of prior experiences in a content area are often more highly committed to the subject, and are likely more confident in their abilities. Because the degree of support needed is a function of what is appraised to be the learner's level of commitment and confidence (Knowles et al., 2012), these individuals' readiness to learn would be such that they would likely require less affective encouragement, and they would likely prefer self-directed learning situations from the adult educator. Adult educators who understand their adult learners' individual characteristics and tendencies and the interactions between them in a particular setting would thus be better suited to provide appropriate and effective learning situations (Knowles et al., 2012).

Knowles et al. (2012) also asserted that situational differences within a specific learning event or environment can alter preferred learning processes and associated teaching approaches. Variables such as the size of the learning environment and group, social and cultural influences, and location within which the learning takes place, are all factors that could potentially affect learning and a teacher's subsequent structuring of the learning environment to comply with these preferences (Knowles et al., 2012). For example, it may be difficult for adult educators teaching large groups to tailor learning situations to relate to each individual's life situation. Likewise, it might be difficult for adult educators in these groups to provide individualized support and guidance, forcing the learners to be more self-directed (Knowles et al., 2012).

Investigating differences between teaching adults and pre-adults in a non-sport context, Beder and Darkenwald (1982) found group differences that aligned with andragogical principles. Notably, adults required less direction from the teacher, engaged in more group discussion, and related learned material to life experiences, but these andragogical principles were not entirely exclusive to adult learners. The authors noted that the purposes and conditions for learning often govern which teaching methods are most effective for a situation (Beder & Darkenwald, 1982).

Consequently, we see that interactions occur between andragogical principles and situational characteristics. Brookfield (1991) noted that both traditional content-based models of teaching and andragogical practices may be appropriate at different times within different contexts. Thus, a critique of andragogy is that both content-based and andragogical approaches may be useful with children and adults depending upon the situation (Merriam, Caffarella, & Baumgartner, 2006). This highlights Knowles' (1984) assertion that the APM can be adapted, in-whole or in-part, to flexibly fit a particular situation on the basis of the characteristics of that situation and the individuals within it. Knowles (1990) further contended that adult educators are

responsible for realizing which principles are realistic for a certain situation and then orienting their practice respective of that situation.

Goals and Purposes for Learning. Forming the outer ring of the APM, the goals and purposes for learning are presented as developmental outcomes, shaping the ways in which adults engage with the learning experience (Knowles et al., 2012). The goals of participating in an adult learning context may fit within three general categories: (1) individual, (2) institutional, or (3) societal growth. In terms of individual growth, the APM dictates that andragogical principles are being effectively applied when they are adapted to fit with the goals of the individual. This means that instructors have properly considered how learning situations can be tailored to accommodate individuals' reasons for participating, suggesting, for example, that adult educators should consider whether adults are interested in learning to foster competitive achievement goals, social affiliation goals, or whether they have personal goals oriented towards mastery (e.g., improvement, giving effort). If institutional performance is a priority for adult education, learning situations need to be effectively facilitated such that the goals for learning become shared between the individual and the institution at large. For example, if an institution's mandate or philosophy is very competitively oriented (i.e., to beat competitors, outperform peer organizations), it will likely thrive if they create learning situations that instill the same competitive goals in their members. Finally, societal growth involves engaging in learning to apply knowledge for societal transformation (Knowles et al., 2012). To emphasize such a goal, adult educators are asked to consistently relate the learning material to ways it could be used to create a better world beyond the specific realm of application (Knowles et al., 2012). In sum, the interaction of all rings of the APM highlights the flexible nature it maintains respective of each individual learner.

Application to Sport. Recently, sport has been conceptualized as an educational process, in which the complexities of coaching and the importance of holistic athlete development have been aptly compared to the intricacies of teaching students (Jones, 2007). Armour (2010) suggested using educational research to further understand coaching, and Lyle (2007) noted that coach educators are often unaware of theoretical frameworks in education that could potentially guide their practices. There are clear correlations between the facilitative roles of a teacher and a coach (Gilbert & Trudel, 2001), as well as between the learning roles assumed by both students in education and athletes in sport, which potentially allow the APM to be applied to the sport domain. However, this remains merely a speculation predicated upon across-domain assumptions, as to date there are no published empirical works that have examined the applicability of andragogical principles in sport coaching.

Coaching Masters Athletes

Young, Callary, and Neidre (2014) proposed that MAs represent a unique cohort that may require approaches that differ from traditional methods employed with other groups, such as youth. In reviewing the broader psychosocial literature on Masters sport, their purpose was to create an "emerging blueprint" that guided coaching researchers in four content areas where different coaching approaches may be warranted when coaching MAs. These areas included: (a) tailoring of the sport environment to fulfill adults' involvement opportunities to heighten athlete commitment; (b) helping adult athletes maximize their limited time for doing sport; (c) guiding athletes to use strategies for negotiating age-related decline; and (d) fostering self-determined and engaged learners in the Masters sport context. Although Young and colleagues (2014) did not explicitly address andragogy in their review, the content areas they provided appear to emulate aspects of the APM, especially in the authors' acknowledgement of the need to tailor the

environment to fit to the athlete's needs and self-concept, which is consistent with the recognition of individual difference variables. They also spoke of the need to foster self-determined learners, which resonates with Knowles et al.'s (2012) principles of the *self-concept of the learner* and *motivation to learn*, and the importance of rationalizing workouts for athletes and asking for athletes' input on workout planning, which captures aspects of Knowles et al.'s *learners' need to know* principle. Thus, it appears that some of their recommendations relate to aspects of the APM, suggesting the potential applicability of andragogy in a coached sport setting.

Further, Callary, Rathwell, and Young (2015) interviewed five male and five female Masters swimmers (MSs) aged between 45 and 65 years who were formally registered in competitive events, and who trained regularly with their coach. The purpose of the study was to explore the lived experiences of MSs with coaches to understand what they wanted from their coaches. The authors explored benefits that the MSs wanted to obtain from their coaches, how they wished to be coached, and what they liked about their coaches. Results indicated that the MSs wanted coaches with experience as an athlete and coach in the sport, who engage in formal coach training and share this with their athletes, who are reliable and relatable, who hold athletes accountable to their training through an individualized approach, who provide variation in practices and autonomy through structured programs, and who both support their athletes and act as role models in competition (Callary et al., 2015).

Rathwell, Callary, and Young (2015), using the same participant sample, described the contextual factors at play in coaching MSs within the broader social-psychological climate. The authors noted the heterogeneity of MSs as they created three vignettes representing different athlete profiles; these profiles varied in terms of their motives for swimming, their perspectives

on competition, their experiences specific to being a Masters swimmer, and their perspectives on being coached. Findings suggested that it is especially important for coaches to tailor their approaches to the preferences and needs of MSs. In addition, MSs in the study discussed the importance of maintaining a shared leadership between athletes and coaches.

Although these findings were not analyzed through an andragogical lens, many emergent themes appear to resonate with andragogical tenets. Most prominent is the breadth of preferences expressed by the group of interviewed MSs. These preferences for coach behaviours and attributes may be related to the specific characteristics of the individual athlete or situation. Depending upon various facets, including previous experience in the sport or personality type, a diverse and varied array of learning situations might expectedly be preferred by the athletes. The current study sought to more explicitly further this line of work by investigating whether a coach's approaches were reflective of andragogical principles, as interpreted through the lens of the coach and his/her athletes, and not just the athletes alone.

Only one study, which remains unpublished, has considered andragogy within a coached sporting context. Morris-Eyton (2008) used purposive sampling to identify and select a Masters coach who was knowledgeable about the intricacies of coaching, and also recruited 11 swimmers who were older than 25 years of age and had been swimming with the coach for no less than three months. Morris-Eyton used a mixed-method approach including the following methods: questionnaires with both the coach and her swimmers regarding adult learning principles, a semi-structured interview with the coach, two focus group interviews with four selected swimmers, and pool-deck observations recorded in a research journal highlighting the coach's interactions with her swimmers. Morris-Eyton, in her description of the coach's practices and the athletes' perceptions of such, discussed findings in light of andragogy. For example, the athletes

recognized that the coach acted as more of a facilitator than a directive coach, and the coach discussed a flexible approach that she implemented when coaching adults, mentioning that her strategy was dependent on the individual as well as the situation. Although these findings highlight tenets of the APM, the study did not clearly define which principles were prominent in the coach's practice and how they impacted the learning processes of her athletes. To fill this gap, the current study outlined how each principle was used by the coach in her approaches with both MA and youth cohorts, and if and how the principles were utilized differently between the two age groups.

On a broader level, understanding the degree of coherency of all or some andragogical principles, and how they manifest in a coached adult sport setting has been an area previously unexplored. Despite correlations between teaching and coaching practices (Cushion, Armour, & Jones, 2003; Jones, 2007), sport learning situations created by coaches for athletes, MAs especially, might be slightly different than learning situations created by teachers for students. For example, MAs are often not expected to have regular, consistent attendance as students are, but rather come and go as they wish (Young et al., 2014). MAs are not graded like students but are judged and ranked in competitive events (Callary et al., 2015). While students in education often have a definitive course or program completion date, MAs are often given the option of training with their coach indefinitely (Rathwell et al., 2015). The goals and purposes for students to engage in education may be different than the motives of athletes to engage in sport. Thus, it was important in the current study to explicitly outline which of andragogy's principles, if any, manifested in both a coached adult and youth sport environment, how they were evidenced in the coach's approaches when interacting with athletes in these cohorts, and how they translated to the coach's approaches to facilitating learning situations.

Traditional Teaching Approaches in Sport

Traditional, oft-referenced pedagogies in sport coaching are conceptualized as those that place the teacher as the 'expert' of knowledge, one who transmits pre-determined information linearly to athletes (Vinson, Brady, Moreland, & Judge, 2016). The high degree of teacher-direction laden in the planning and delivery aspects of traditional approaches has been critiqued as limiting athlete involvement and their opportunities to autonomously problem solve in learning situations (Rink, 2010; Siedentop & Tannehill, 2001). Such directed approaches (e.g., Cassidy, Jones, & Potrac, 2009) have been predominant in youth sport coaching. Particularly, youth coaches have been found to deliver a wealth of information in a top-down manner, while refraining from using learner-centred questioning to stimulate conversation (Wulf & Shea, 2004). As a result, youth programs are often very drill-focused, and resultantly promote coaches' control over the content and progression of sessions, whereby coaches dictate how athletes are to perform certain techniques within sessions, and sometimes fail to acknowledge the individual athletes' learning apart from the collective group (Ford, Yates, & Williams, 2010). The traditional pedagogical approach has been criticized as sometimes being so skill-focused that it becomes decontextualized from broader contexts of application. For example, Williams and Hodges (2005) noted that authentic game-play situations are often not introduced in training sessions until the athletes reach high skill and age levels.

Coaching researchers (e.g., Ford et al., 2010; Light & Dixon, 2007) have begun to problematize traditional approaches for their inability to foster critical thinking and problem solving orientations. In response, contemporary coaching science has begun to place precedence on athlete-centredness (Kidman, 2005), whereby athletes' learning is believed to flourish when coaches help them self-guide as opposed to autocratically directing program content (Ford et al.,

2010; Ollis & Sproule, 2007). Although coaches often recognize the utility in adopting these athlete-centred approaches, they do not appear to be comfortable shifting completely from their default mode of traditional coach-directed guidance (Ford et al., 2010). Thus, there is some question about the degree to which and how such approaches manifest in youth training situations, especially in light of how wholly adopting these approaches may better facilitate athletes' learning in contrast to traditional methods. The aforementioned studies of MAs' needs and preferences for coaching approaches (e.g., Callary et al., 2015; Ferrari, Bloom, Gilbert, & Caron, 2016; Rathwell et al., 2015) have described how adult sportspersons seek opportunities for self-directedness and problem solving, and are eager to intellectually appraise the content of training tasks. Interestingly, these findings are in close parallel with the advocated-for elements of contemporary coaching approaches for youth.

CHAPTER 2: OVERVIEW OF THE STUDY

Purpose

The purpose of the proposed study was to garner an understanding of a coach's approaches to facilitating learning situations for his/her MAs and youth athletes. The study examined whether and how these approaches differed between the two groups respective to age and other individual and situational characteristics, and with respect to the six andragogical principles. Specifically, the study's research questions were: (1) what are a coach's approaches to facilitating learning situations for MAs and youth athletes?; (2) how are those approaches dependent upon the individual learners, situational characteristics, and the goals and purposes for learning?; and (3) which andragogical principles, if any, are considered by the coach when coaching MAs compared to those, if any, considered when coaching youth?

Methodology

Instrumental Case Study

In the current study, I employed an instrumental, single case study design (Punch, 2013), to explore the perceptions and practices of one individual coach. In an instrumental case study, a particular case is examined in detail to provide insight regarding a specific issue or refine a theory (Stake, 2005). I explored a coach's practices to understand if and how she considers andragogical principles, and used multiple methods (Punch, 2013) to provide a rich depiction of the case within this particular sport context. Specifically, I conducted (a) three semi-structured interviews with a coach, (b) a total of four focus group interviews (two with each of a MA and youth group of athletes who were regularly working with the coach at the time of the study), and (c) observations of the coach's training sessions with the two groups on four separate occasions (two with each of the cohorts).

Participant Criteria

Coach. Due to the single case study design, it was important that I selected a suitable coach for the study. Purposive sampling techniques (Higginbottom, 2004) were employed, meaning that the coach who I felt best satisfied a set of specific criteria was selected. First and foremost, I knew our selected coach had to be one who, at the time of the study, worked with both MAs and youth athletes. I aimed to find a coach who coached each of these cohorts separately in training, and devoted approximately equal time to coaching each. This proved to be difficult as youth athletes old enough to discuss their coach's approaches (14-15 years old) trained for more hours than MAs. I thus made every possible attempt to screen for a case study participant who shared time equitably between both cohorts, understanding that the coach would typically spend more hours per week with the youth than with the MAs. I thought that having a coach with experience (i.e., five years or more) coaching athletes in each of the two age cohorts would be important to ensure that he/she could aptly explain various approaches in situations that occurred over time. Finally, I was interested in securing a coach who was well versed in areas of coach knowledge and practice, and who valued their own commitment to learning.

With these criteria in mind, I contemplated various sports for which both MA and youth competitors trained separately but at the same venue and were in competition at the same point in season. After discussing potential participants from several sports amongst our research team, I decided to contact a female, 30-year-old canoe/kayak coach, who we knew was educated in the field of coaching, had competitive experience in the sport she coached, and was coaching both age cohorts at the time of the study. This coach voiced her interest in our study during informal conversations. Thus, I followed up by contacting this coach's club commodore by e-mail for permission to regain contact with the coach and collect data at the club. A letter of endorsement

from the Director of Coach and Athlete Development at CanoeKayak Canada was included in the e-mail, which outlined the study's merit and potential value for coach and athlete development in the sport. The commodore provided written consent to conduct the study at the club and permission to organize data collection dates and procedures with the coach of interest. This coach was then contacted and signed a letter of consent to take part in the study.

I asked the coach to complete a coach personal information survey (see Appendix B), based on Werthner and Trudel's (2009) catalogue of five important coach learning situations, to confirm her credentials. This screening tool delved into aspects of the coaching situations that were currently experienced (e.g., age and number of athletes within each cohort, number of hours coached per week with each cohort), and also helped to determine whether the coach was interested in learning and developing as a coach. Upon completion of the survey, we learned that the coach had 14 years of experience coaching MAs and 9 with youth, held a master's degree in sport psychology and coach education, attained Coach-Development National Coach Certification Program accreditation in Canada, readily reflected on her training sessions, and engaged in various methods and with social networks to improve her coaching craft.

Athletes. Athletes from each of the coach's MA and youth group were asked of their interest in participating in two separate focus group discussions. The coach sent a recruitment letter and consent forms through e-mail to each cohort, and asked the athletes to return these forms to me directly at the training site. By doing so, the coach was not made aware which athletes chose to participate and which did not. Consequently, the athletes did not feel pressure to participate nor did they think that choosing not to take part would jeopardize their reputation in the eyes of their coach. Twelve MAs between the ages of 27 and 70 years consented to

participate in the study and nine youth athletes (all either 14 or 15 years old) provided both their own and their parents' consent to participate.

Data Collection Methods

The data collection process spanned a total of 19 days, and followed a structured timeline (see Appendix C).

Semi-structured interviews. In-depth interviewing, as outlined by Marshall and Rossman (2006), represents an efficient method for gathering rich and extensive data, allows for immediate probing or follow-up, and provides a degree of interpretation on the part of the researcher to elicit the meaning attributed to various phenomena by the participants. A total of three semi-structured interviews were conducted with the coach. The justification for conducting multiple interviews with the same individual was so that I could first gather information specific to the coach's perceptions and experiences, and then compare this information to that observed in her interactions with the athletes in training, in order to inform the specific questions that were used in subsequent interviews.

In the first coach interview, I asked questions that aimed to elicit a broad, but in-depth understanding of the coach's experiences and perceptions of coaching both youth and MAs (see Appendix D for the interview guide). The interview began with questions that asked the coach to explain her general coaching approaches and philosophies; first with MAs and then with youth. Probing questions followed on the basis of the coach's responses to these questions and to the potential distinctions drawn between the approaches she explained with regard to each cohort. These probing questions were developed with the APM in mind. Therefore, I looked to elicit the coach's perceptions of her athletes' goals and purposes within the sport, the individual,

situational, or subject-matter influences on her approaches with each cohort, and her perceptions of whether her coaching approaches were commensurate with andragogical principles.

The questions in the second and third interviews (see Appendices E and F for their respective guides) were informed by prior observation of various learning situations during practice sessions, documented through the use of field notes. These situations included the types of drills facilitated by the coach, her interactions (both verbal and non-verbal) with the athletes, and the athletes' responses to the coach's approaches during the session. Field notes were organized categorically on the basis of how I interpreted their relation to one of the six andragogical principles. These field notes on observed situations were shared with the coach to prompt her recall of the situations during the subsequent interview. After each situation was prompted, I asked probing questions in light of the specific andragogical principles. For example, for a situation in practice during which I observed a high degree of athlete autonomy, I asked how the coach may have utilized athlete self-direction in setting up learning situations. Thus, questions in the second and third interviews were predicated upon observed situations during the coach's practices, and only included those andragogical principles that applied to the observed learning situation. This procedure was followed for both the youth and MAs groups.

All questions within each of the guides were open-ended to allow the coach to speak freely and openly (Rubin & Rubin, 2012). To further enhance contextualization of the dialogue, the coach was asked to provide specific examples to support her answers as much as possible. Finally, the interviews were conducted with a conversational style in mind, where probing questions were provided in a way that facilitated a comfortable dialogue; I worked to maintain a friendly persona and encouraged the coach to speak as the expert on what she explained during the interview (Rubin & Rubin, 2012).

Each coach interview was transcribed verbatim in following days, and the resulting transcript was sent to the coach via e-mail. The coach was asked to review the document and provide any comments or edits that she deemed necessary. This allowed the coach to reaffirm all or rescind any aspect of the transcript and provided her the opportunity to add information after reflecting upon the content (Creswell, 2014).

Observation. Dewalt, Dewalt, and Wayland (1998) posit that observation is a generally unstructured method of collecting data in naturalistic settings. In this study, I observed the coach in training with her athletes on four separate occasions; two with the MA group and two with the youth athlete group. Spradley (1980) identified and described the degree of 'participation' and 'observation' as occurring on a continuum. At one end of the continuum is 'nonparticipation', in which the researcher engages in no interaction with participants. At the other end is 'complete participation', where the researcher becomes a member of the studied group, engaging fully in the lives and culture of this group. Along this continuum, but closer to the 'nonparticipation' end, is the role I assumed in the current study. As a 'moderate participant observer', I was present at the training site, and thus had potentially limited impact on the participants, but did not actively participate with members of either cohort during training sessions (Spradley, 1980). Consequently, I acted as a bystander in the coach's motor boat on the water and took field notes of observations, but did not interfere with the coach's direction or interact with the athletes during their training session.

Field notes of observations (Spradley, 1980) with specific attention to the learning situations created by the coach for her athletes were documented. All field notes were organized categorically in a tabular format based on their fit with any of the six andragogical principles (see Appendix G for the template of the table I used to write about particular observed learning

situations), in preparation for the upcoming interview. These notes purposefully informed the questions that comprised the second and third coach interviews, and were not used as part of the data analysis.

Focus groups. Kamberelis and Dimitriadis (2005) define focus groups broadly as collective conversations or group interviews. They typically focus on the communication between six to ten participants who are representative of a particular group, often selected on the basis that they share a common characteristic of relevance to the study (Kitzinger, 1995). These participants are encouraged by the researcher to converse amongst one another and share their thoughts and opinions regarding specific matters posed by the researcher (Kitzinger, 1995). In the current study, I conducted four focus groups; two separately with athletes from the MA group, and two separately with athletes from the youth athlete group. The focus groups were conducted directly following observation of a particular training session to allow the athletes to reflect more readily upon situations that just occurred.

The format of the focus group interviews was similar to that of the second and third coach interviews (see Appendix H for focus group guide). I presented learning situations that I observed during the practice in order to generate discussion among the athletes, and asked probing questions that resonated with andragogical principles applicable to that specific situation. Specifically, these questions were structured to elicit the athletes' perceptions of their coach's approaches in light of the principles. The focus group interviews were structured the same way for both the MAs and youth athletes. I worked to ensure that the athletes were comfortable during the interview, by sitting with them in a circle and stressing to them the intent to treat it as a conversation amongst one another, and to freely voice their perceptions without waiting for me to address each athlete individually (Kitzinger, 1995).

Data Analysis

Data obtained from the semi-structured interviews and focus groups were audio-recorded and transcribed verbatim using basic transcription computer software, InqScribe (InqScribe, 2015). The transcripts were imported into QSR NVivo10 computer software for organization and subsequent analysis (NVivo, 2008). Minor edits were made to the transcripts to correct for grammatical errors and to remove any identifying information. The data were thematically analyzed using both deductive and inductive approaches (Braun & Clarke, 2006).

A strength of conducting an instrumental, single case study design with one coach who coaches both MAs and youth athletes was in providing a contrasting analysis of the coach's approaches taken with one cohort versus the other. The data collected from the coach interviews followed the six-step deductive thematic analysis process described by Braun and Clarke (2006). First, the transcripts were read and re-read to become familiar with the data and to generate initial ideas explained by each method. Specific pieces of the data were identified and then deductively organized into categories corresponding to one of the six andragogical principles. Resulting codes within each category were reviewed and refined on the basis of how well this coded data fit together, and upon how distinct the data were between each deductive category (Braun & Clarke, 2006).

Data from the athletes' focus group interviews followed an inductive analytical approach. We used the APM as a broad guiding lens, and initially developed codes in relation to the six deductive andragogical principles. We acknowledged overlap across each of the six categories, and thus inductively collapsed codes into potential themes based on their overlap that better articulated their convergence and divergence. These themes were then combined and organized into higher-order themes that fitted individual, situational, and contextual categories.

Credibility and Trustworthiness of Data

To enhance the credibility and trustworthiness of the study's findings, important steps were taken prior to and during data collection. First, prior to the actual collection process, I conducted pilot interviews of both Interviews 1 and 3 (following their respective interview guides) with four coaches (Masters coaches in ski, track and field, and CrossFit; and youth soccer coaches), in order to learn the mechanics of navigating through each guide efficiently. I also familiarized myself with taking field notes by conducting four observation sessions with Masters CrossFit and youth soccer groups and then organizing these field note observations in tabular format according to andragogical principles, in order to translate these observations into probing questions. Following the observations, I held focus groups with the respective athlete cohorts. All pilot interviews, observations, and focus groups were debriefed with my thesis supervisors during and after completion. The entire pilot process helped develop my ability to effectively conduct the methods, and helped me gain confidence developing questions that viably captured andragogical principles and reflected observed learning situations in practice.

During data collection, an important step that I took to enhance credibility and trustworthiness was to use observations of the coach's learning situations for her athletes in training to formulate the questions of the second and third coach interviews and all focus group interviews. Further, these questions were related to andragogical principles predicated upon observations of the coach's practice. Therefore, credible findings were gathered that related to actual approaches in specific situations that the coach, the athletes, and I all experienced (Creswell, 2014).

By reviewing her transcripts, the coach had the chance to modify any of her responses (Creswell, 2014). Moreover, triangulating methods, that is, checking the consistency of findings

generated by different data collection methods, also contributed to the verification and credibility of qualitative analysis (Patton, 1999). As a form of comparative analysis, triangulation was used to decipher the degree of convergence of data elicited from multiple methods (Patton, 1999). Thus, credibility was enhanced by comparing the coach's answers to questions about situations that were observed in practice with the athletes' answers to questions about those same situations.

Significance of the Study

From a conceptual perspective, the goal of this study was to discern which andragogical principles were utilized by the coach in her practice, and how, specifically, the principles translated to approaches taken to facilitate learning. By cataloguing and describing evidence of the principles in her approaches, this study aimed to explore andragogy's usefulness within the sport coaching domain.

From a practical perspective, the aim of this study was to better understand if and how a coach's approaches to facilitating learning situations were dependent upon individual learner or situational age-dependent differences, and how those approaches in learning situations aligned with andragogical principles with each group. The purpose was to elicit findings that could be used to understand if and how certain coaching approaches were specific for MAs versus youth, how elements of the APM compared between age cohorts, and how those coaching approaches translated to the facilitation of learning for each of the two cohorts.

Presentation of Manuscripts

To address the study's research questions, two journal articles are presented entitled: *Investigating a coach's perception of her approaches to facilitate learning for Masters and youth canoe/kayak athletes*

and

Investigating Masters and youth canoe/kayak athletes' perspectives of their coach's approaches to facilitate their learning.

MANUSCRIPT 1: ***Investigating a coach's perception of her approaches to facilitate learning for Masters and youth canoe/kayak athletes***

Investigating a coach's perception of her approaches to facilitate learning for Masters and youth canoe/kayak athletes

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Abstract

Research has indicated that Masters athletes (MAs) feel that coaches should orient their approaches differently when working with them as opposed to younger athletes (Callary et al., 2015; Ferrari et al., 2016). MAs' preferences for coaching approaches align with key learning principles of the Andragogy in Practice Model (APM; Knowles et al., 2012). The purpose of this instrumental case study was to understand if and how each of the six andragogical (i.e., adult learning) principles were evidenced in a 30 year-old, female, canoe/kayak coach's perceptions of her approaches to facilitate learning with the MA and youth groups she coached, and whether these principles manifested differently between the groups. Three semi-structured interviews, each lasting 90-120 minutes, were conducted with the coach. Field notes of learning situations documented during observation of separate MA and youth training sessions informed questions comprising Interviews 2 and 3. Interview data were transcribed verbatim and deductively analyzed using the six andragogical principles as deductive categories. The results showed that the coach's approaches with MAs were largely andragogical, especially in her ability to respond to MAs' inquisitive nature, provision of self-directedness, and recognition of the athletes' largely intrinsic motives. The coach's approaches with youth more closely followed traditional pedagogy, whereby she directed information delivery, limited the youth's autonomy and decision-making in training, and considered more extrinsic, competitive motives important to their commitment. Despite these contrasts, aspects of both andragogy and pedagogy were evident in the ways the coach described her approaches with the two cohorts. Thus, findings suggest that the APM in this specific sport context may be flexibly applied, and its principles adapted in ways that respond to both youth and adult athletes' learning needs depending on the situation.

Key words: andragogy, coaching, learning, pedagogy, sport

Investigating a coach's perception of her approaches to facilitate learning for Masters and youth canoe/kayak athletes

Masters athletes (MAs) are adult sportspersons who represent one of the fastest growing sport cohorts in many Westernized countries (Weir, Baker, & Horton, 2010; Young, Bennett, & Séguin, 2015). MAs' participation in sport is often competitive and is enhanced through involvement with a coach in training. Consequently, recent work has begun to investigate coaches' influence on MAs' sport experiences, with reference to the unique psychosocial profile that MAs encompass as mature adult beings.

Research has indicated that MAs have preferences for specific coaching approaches that may be considered unique to this cohort. Young, Callary, and Niedre (2014) suggested four main content areas for coaches of MAs to navigate when attempting to offer nuanced practices for their adult athletes: 1) building involvement opportunities into the sport environment; 2) helping athletes maximize their limited time for doing sport; 3) guiding athletes to use strategies for negotiating age-related decline; and 4) fostering self-determined and engaged learners in the Masters sport context. Subsequent research exploring MAs' perspectives in working with their coaches uncovered certain needs and preferences, including coaches providing organized but flexible practice schedules, fostering an accountability to sport, and appreciating their differences in motivations in order to understand to whom, when, and how to give feedback (Callary, Rathwell, & Young, 2015). Additionally, Ferrari, Bloom, Gilbert, & Caron (2016) noted Masters' preferences for coaches to communicate motivational feedback, and provide very technical and detailed instruction in an athlete-centred manner. The athletes in the study felt that having their coaches meet these ideals helped them attain the social, health, and performance benefits to which they placed great value (Ferrari et al., 2016).

These findings appear to emphasize MAs' desire for coaches to recognize and accommodate their obligations as adults while still holding them accountable to the demands of competitive sport. Previous work has indicated that MAs feel their coaches' provision of technical feedback and competitive approaches need not be compromised (Callary et al., 2015; Ferrari et al., 2016), but MAs have stated a need for coaches to assume different approaches with them than those employed with younger cohorts, on the basis of their psychosocial profile (Callary et al., 2015). Paralleling this notion is adult learning literature not specific to sport, which contends that adults may benefit if they are given room to self-guide, use and analyze prior experiences, and approach learning with a problem-based focus (Merriam, Caffarella, & Baumgartner, 2006), highlighting what are deemed indirect or learner-centred methods of instruction.

There exists a plethora of literature in physical education that supports the notion that directed, teacher-centred instructional styles have been and remain predominant. It has been noted that these methods allow the teacher to inevitably decide what is to be learned, how the content will be delivered (Siedentop & Tannehill, 2001), and provide learning activities that are highly structured and strictly monitored (Rink, 2010). However, the advantage of adopting learner-centred and indirect teaching approaches has gradually been embraced in youth educational contexts given learners' enhanced involvement and more meaningful engagement in their own learning process (Rink, 2010).

In youth sport coaching, teacher-centred methods of instruction have also been the predominant choice (Light & Dixon, 2007; Ford, 2010). Studies (e.g., William & Hodges, 2005) have described how the nature (i.e., structure and progression) of training sessions is dependent on the age of the athletes and their skill level. As a result, coach-directed approaches are often

evidenced in youth sport because coaches become reluctant to hand over decision-making opportunities largely on the basis of their athletes' immaturity (Ford et al., 2010). Thus, youth's training is often emphasized with coach-directed drills and a scarcity of actual gameplay scenarios (Ford et al., 2010).

We do not currently know which instructional styles are used by coaches of MAs, as there has yet to exist any published work on the topic. However, in unpublished master's research, Morris-Eyton (2008) sought to understand a Masters swim coach's strategies with a group of Masters swimmers (MSs) through use of video and non-participant observation, questionnaires, one coach interview, and two athlete focus group interviews. Findings suggested that the coach in her study used teaching methods that were more indirect and learner-centred in nature, which Morris-Eyton linked to fundamental principles of adult learning.

The work of Malcolm Knowles and colleagues suggest that adult educators may provide influential learning experiences by utilizing six distinct adult learning principles in their teaching practice: 1) satisfying the learners' need to know; 2) recognizing the learners' self-concept by affording autonomous and self-directed opportunities; 3) valuing the learners' prior experiences; 4) fostering a readiness to learn; 5) facilitating a problem-centred and contextual orientation to learning; and 6) helping the learners remain motivated through finding intrinsic value and personal payoff in the learning process (Knowles, Holton III, & Swanson, 2012).

Knowles et al. (2012) operationally defined each principle with reference to an educational domain. With regard to *the learners' need to know*, adults seek to understand how their learning will be conducted, what will be learned, and why learning the content is important. To allow the learners to understand the significance of what is taught, adult educators may engage them in a collaborative, mutual planning process for their learning (Knowles et al., 2012).

Within *self-concept of the learner*, adults generally want to be seen and treated by others as being capable of self-direction and autonomy. Therefore, they seek opportunities that allow them to assume control and ownership of the learning process (Knowles et al., 2012). Thus, adult educators may create situations that provide learners with opportunities to self-guide and transition from dependency to self-directedness. Adult educators should be mindful of the *prior experiences of the learner*, including the great volume and different quality of past experiences that adults bring to a learning environment. Although these experiences serve as a rich resource for learning, they may also act as biases that impact the ways in which adults seek to learn the content (Knowles et al., 2012). Adult educators, therefore, may help learners examine their habits and biases while still placing emphasis on the value of such experiences. Adults have a *readiness to learn* when responding to a deficit in knowledge presented within a specific life situation (Knowles et al., 2012). Adult educators are tasked with creating learning situations that support the learners' needs while helping them bridge their knowledge deficit (Knowles et al., 2012). Adults have an *orientation to learning* that is life- or problem-centred, as opposed to a subject-centred approach. Adults learn most effectively when they understand how learning can help them deal with problems or improve personal weaknesses (Knowles et al., 2012). Adult educators may orient learners' attention towards task-solving activities that are relevant in broader authentic and meaningful situations. Finally, the *motivation to learn* is largely driven by internal pressures, and can be conceptualized as the sum of four factors: success, volition, value, and enjoyment (Knowles et al., 2012). Adult educators who are cognizant of the importance that adults attribute to these factors may facilitate situations that incorporate elements of each.

These principles together encompass the larger theoretical concept termed *andragogy*: the art and science of helping adults learn (Knowles, 1984). Andragogy reflects learner-centred

teaching approaches that have been documented in educational literature, representing a movement away from the directed, teacher-mediated styles of traditional pedagogical approaches. Knowles et al. (2012) differentiated the two concepts. These authors noted that in the pedagogical model, the learner has a dependent personality and the teacher takes responsibility in choosing all aspects of the learning content and its delivery. Pedagogical assumptions hold that the learners have little to no experience, they are ready to learn to advance in standing or level, and they are motivated to learn by external pressures such as grades or certification. Contrarily, andragogy holds that the learners yearn to be responsible and self-directed in their learning, they have a wealth of experience of value for current learning, they are ready to learn to respond effectively to a gap between where they are and where they want to be, and are motivated to learn on the basis of internal pressures such as the quest for a better quality of life (Knowles et al., 2012).

Although primarily developed for adults, Knowles et al. (2012) asserted that younger learners might also benefit from being taught in ways that coincide with andragogical principles. In deciding when to implement learner-centred, andragogical approaches, educators may analyze the situation and the individual learners within it. Along the continuum from teacher- to learner-centred styles (Byra, 2006), educators are tasked with understanding the degree of autonomy and decision-making that are realistic and beneficial for learner success within those situations (Knowles et al., 2012). For example, adults tasked with learning new content without any related experience to aid in the learning would likely be quite dependent on the educator, favouring a pedagogical approach within that situation. Similarly, young people may learn better by self-directing in situations where they feel comfortable and do not seek guidance. An essential feature of andragogy is its accommodation for flexibility, allowing some or all of the principles to be

applied depending on the nature of the situation and the learners. Understanding how and when to implement andragogical principles may allow educators to facilitate more meaningful and effective situations for the learners they work with.

To more systematically apply andragogical principles within various learning situations across multiple domains, Knowles, Holton III, and Swanson (1998) developed a conceptual framework termed the Andragogy in Practice Model (APM). Within the model, the six principles are presented along with individual and situational variables, as well as the learners' goals and purposes within those situations (see Appendix A). Although the APM has only been considered within educational settings, we saw it as a potentially useful tool in understanding coach-facilitated learning situations among MAs in sport, given its natural fit with emerging findings suggesting that adult sportspersons require approaches to sport coaching that account for their unique psychosocial profile as matured adult beings (Callary et al., 2015; Ferrari et al., 2016; Morris-Eyton, 2008; Rathwell, Callary, & Young, 2015; Young et al., 2014).

Within sport, psychosocial elements involved in coaching adult athletes have remained largely unexplored. Moreover, there exists an implicit assumption that it is acceptable to apply similar coaching approaches with MAs and youth athletes irrespective of their age, and that coaches working with both cohorts need not consider ways to differentially orient their coaching approaches (Young et al., 2014). In contrast, emerging literature considering MAs in coached sport suggests that differential approaches might need to be considered. We suggest that the APM represents a pertinent framework that could structure an understanding of such differences. Thus, the purpose of this study was to understand if and how each of the andragogical principles were evidenced in the ways a coach perceived she facilitated learning situations for both MAs and youth athletes, and whether these principles manifested differently between the two groups.

Method

An instrumental, single case study methodology (Punch, 2013) was followed to attain rich detail related to one coach's approaches to learning facilitation. Ethical approval for all procedures was granted from the host university's Research Ethics Board before participants were recruited.

Participant

Deliberate thought was attributed to the process of recruiting and selecting a suitable coach for the study who satisfied specific criteria. First, the coach needed to presently coach both youth/adolescent athletes and MAs, interacting sufficiently with each group separately at different times. Additionally, we sought a coach with at least five years of experience working with each age cohort, and one who was committed to the process of learning. We agreed that this devotion could be evidenced through formal coach education training, engagement with communities of practice or mentors, or acknowledgement of practice reflection.

Our participant, who was well known within the sport-coaching community, completed a personal information survey during recruitment to ensure she fit the above criteria. At the time of the study, Janice (pseudonym) was a 30 year-old canoe/kayak coach at a club in Eastern Canada. She had competed in the sport as a youth/adolescent athlete for 10 years, and was currently competing in her fifth year as a MA. With regard to her coaching knowledge and experience, she was a certified Competition-Development coach, through the Canadian National Coaching Certification Program (NCCP), and held a master's degree in sport psychology and coach education. She had coached MAs intermittently for 14 years, and youth athletes for 9 (full-time for the four most recent years). At the time of the study, Janice was coaching 15 MAs, aged 27 to 70 years, for eleven months of the year, one to three times per week for a total of two to six

hours. She coached fifteen U16 youth athletes (aged 14 and 15 years) for 12 months of the year, eight to ten times and for an average of 10 hours per week.

Janice's club advertised competitive, structured training for both youth and MAs. However, she had different perceptions of competitiveness for the groups she coached. On a scale of 1 (not at all competitive) to 5 (very competitive), Janice described the competitiveness of the training climate within which she coached as being a 5 for her youth and a 2 for her MAs (although both cohorts attended national competitions). She coached youth at six regattas and one national championship, while only coaching at two competitive events with her MAs.

Finally, Janice described how she would often reflect upon each training session. She would gauge the workout's appropriateness through her evaluation of the athletes' technical execution of the drills, level of fatigue, and attitude toward training. To improve her coaching craft, she asked for feedback on her program from other coaches within the club, sought resource books, and took part in a female mentorship program as a method of building a network of influential and likeminded leaders. In sum, Janice was a suitable candidate for our instrumental case study because of her coaching experience and background, the cohorts of athletes with whom she worked, and the club context to which she was affiliated.

Data collection

Data collection occurred in-season and included three in-depth interviews each lasting between 90 and 120 minutes. The principal investigator (PI) also engaged in four participant observation sessions where he watched coached training sessions; two with the Masters and two with the youth group. Specifically, Interview 1 was conducted in-person and commenced the data collection process. Subsequently, the PI engaged in two participant observation sessions (one MA group and one youth group) to inform Interview 2. Those observation sessions

occurred on the day following Interview 1, with Interview 2 conducted on Skype five days later. The two remaining observation sessions occurred one week later, followed by Interview 3 on Skype five days after those sessions.

The interview process followed a progression from a very open-ended approach in Interview 1 to a mix of both observation-governed questions and structured ones based on the APM's conceptual framework in Interviews 2 and 3. This progression initially allowed Janice to speak freely and openly about her most general coaching approaches and philosophies to yield rich and expansive data inductively, before explicitly questioning on elements of the model in later interviews. The questions comprising Interview 1 were thus very open-ended, affording Janice the opportunity to speak about her broad coaching styles with her MAs and youth athletes, the types of drills she chooses to run with each group, and what it is about these cohorts that propels her towards various coaching decisions.

Prior to conducting Interviews 2 and 3 with Janice, participant observation was used to make notes of the types of learning situations she facilitated in her practices. Thus, assuming the role of a moderate participant observer (Spradley, 1980), the PI sat with Janice in her motorboat, documenting observations of specific situations she was facilitating, thereby potentially impacting the coach's approaches. The PI organized the notes categorically on the basis of how they aligned with Knowles et al.'s (2012) six andragogical principles. The Interview 2 guide was constructed following participant observation, using the PI's field notes of observed learning situations to inform the types of probing questions. For example, all observations that the PI saw as related to the *learners' need to know* were housed within this category, and the interview questions were organized sequentially to ask all questions within one category before moving to the next.

Interview 3 followed another set of participant observation sessions, again using field notes to guide the probing questions. Thus, these observation-governed probes were key to uncovering Janice's justification for taking such approaches and probing whether she used the same approach with the other age cohort of athletes. Interview 3 was then tail-ended with questions that probed directly about Janice's utilization of each of the six principles to saturate all information within each deductive category.

Each of the three interview guides was piloted with four coaches prior to data collection to test their sequence and content. The translation of field notes to interview questions was also piloted and refined based on participant observation sessions of MA and youth groups prior to two of the pilot interviews.

Data analysis

Interview data were audio-recorded and transcribed verbatim using the software program, InqScribe (InqScribe, 2015). After minor edits for grammar and removal of identifying information, the transcripts were imported into QSR NVivo8 software (NVivo, 2008) for analysis. Data were deductively analyzed using a six-phase thematic analysis process (Braun & Clarke, 2006). First, the transcripts were read and re-read to become familiar with the data, and notes were made in the margins to highlight interesting features of the content, especially with regard to how the data related to the APM. Thus, the formulation of coded data into themes was predicated on their fit with one or more of the six andragogical principles. Quotes placed in multiple categories were returned to for discussion among our research team to reach consensus upon which principle it best represented. After all data were initially coded, they were reviewed to ensure a clear storyline could be derived within each theme and the entire data set, with respect to the conceptual framework.

Credibility and trustworthiness

Credibility and trustworthiness of the data were enhanced following Creswell's (2014) recommendations. The pilot work ensured that the PI could aptly navigate through each guide to elicit data pertaining to the andragogical principles. Secondly, the use of documented field notes of actual learning situations to construct questions ensured that these situations were each experienced by Janice, the athletes, and the PI and that the questions accurately pertained to these shared situations. Thirdly, Janice was provided with each interview's transcript and was given the opportunity to modify any responses. For all three transcripts, however, she specified no changes. Finally, following analysis, the coding of quotes within each deductive category was discussed between the three researchers until consensus was reached.

Results

Six higher-order categories pertaining to each of the six core andragogical principles are presented with quotes that illustrate Janice's approach with her MAs and with her youth athletes. Certain quotes directly compared the MA cohort and the youth cohort, and so we juxtaposed the two cohorts in those instances to illustrate the explicit between-group differences.

The learners' need to know

Janice explained that her MAs consistently sought a wealth of information from her regarding proper skill execution. In return, she provided much individualized direction that was tailored to the fitness and skill level of the adults:

> The other day, (name of athlete) took me aside and was like, 'How do I do a 500 [meter sprint]? So I explained it and I broke it down. These MAs start a sport later in life, and that's pretty amazing. Of course they want to become more confident, so they want to know everything. They ask me about race plans all the time. Each race plan is very

individual.

Janice often clarified and repeated specific procedures to her MAs because she felt they used her restated explanations to validate whether their approaches were sound. Janice also directed questions back upon the MAs to gauge their level of understanding: "When MAs ask me questions, they want to know if they were doing it properly, and if they weren't, I'll explain how they can execute it. Sometimes I'll ask them, 'What did you think I meant?'" Janice was mindful of the difference in each MA's need for technical direction, briefing instruction, and clarification regarding training prescriptions. In particular, she worked to satisfy the athletes' need to know on the basis of their personal goals.

Janice explained how she anticipated questions from her youth athletes while introducing novel elements to their training. She understood the youth's need to know as being correlated with what they had already learned: "I'm just thinking about Saturday. I was going over different changes and they were like, 'Wait, I didn't know that', and they're all [suddenly] listening and talking. So if it's something new, they want more [clarification]." However, in situations within which the information was not new, she stated: "I ask the athletes to perform drills every practice and I don't always explain why. But I have before. If it's the fifth time they're going to do that drill in the week, I won't explain why."

Moreover, Janice noted that youth rarely engaged in mutual conversations with her because they were uncomfortable approaching her with questions. Cognizant of this, she did not wait for their prompt. Instead, she dictated their need to know by actively intervening with information she felt they required:

> I have to pull [their thoughts] out of the youth. They don't come up to me as much. Their parents will tell me, 'Oh my gosh, he's been so nervous'. So then I really make a note to go up to the individual and see what I can do to help.

In comparing the approach Janice used with the two cohorts, we see some distinct nuances in how she navigated the athletes' need to know. She used key directive points with MAs to remind them about what they should focus on for proper technical execution. This informational approach was used to respond to their inquisitive, detail-oriented nature: "[MAs ask], 'Why am I doing the pause drill?', and I'll let them know that, 'You were rushing your set up', or, 'Your timing is off and I want you to slow things down'. It's an education piece." Alternatively, Janice appeared to give information to her youth athletes in a strategic, motivational manner. She provided explanation for training prescriptions to remind the athletes why a commitment to the training program was key to their success:

> With youth, I say, 'This is why we're doing what we're doing. We're going to train eight times a week all year round because everyone else [in competitive clubs] is doing it, so we have to keep up. And we're going to take advantage of eight practices a week to try to touch on every single pillar of performance'. Motivation runs thin in the middle of the winter, and that's when explanation of why we're doing things comes back into play. Those days where they don't want to do it, they remind themselves, 'Oh yeah, this is why we're doing this'.

Janice was careful not to provide MAs with instruction beyond the boundaries of the sport unless they asked for it. She viewed MAs as independent individuals, and thus placed the onus on them to approach her with any questions or concerns not directly related to her coaching duties. However, with youth, she did not hesitate to volunteer her advice directly:

> I would not have conversations [about issues outside of the sport] with MAs. If they ask me something that's outside of paddling, it's because they came to me. Like, 'I've really been trying to gain [weight]; can you help?' I'm like, 'Alright, let's do an extra smoothie a day with protein, it's an extra 1000 calories'. With kids, I'm giving them that advice before they ask.

Janice considered her MAs as 'deliberators' who reflected comprehensively upon their learning and what she asked of them in training, and therefore she fielded questions to satisfy their need to know. She recounted how some MAs deliberated and realized they were not comfortable performing all drills, and thus sought information from her to execute the drill effectively and safely. Contrarily, she acknowledged her youth as being far less reflective, often responding to her direction through immediate action without question:

> For example, some MAs didn't understand the 'wobble' drill. They said, 'You're telling me to wobble, but what does that mean?' And I'm like, 'Just slide around on your seat'. And they said, 'But I'll tip'. So they think so much about things, whereas kids are like, 'You asked me to do that, ok, I'll do it'.

On the whole, Janice described how MAs more actively approached her for information especially in sport situations that pushed them to the margins of their comfort zone. Whereas she perceived that MAs needed to know technical information based on their questions, Janice often opted for a motivational approach with youth athletes whereby she gave information as a means to keep these athletes driven to meet the demands of their training. Within the boundaries of sport, Janice actively exchanged information with MAs to meet their need to know, yet acknowledged reluctance from youth that curtailed such frequent exchanges. Beyond the boundaries of sport, Janice believed she needed to lessen her informational role with respect to

MAs' need to know, yet she offered advice openly to youth even when she was not asked.

Self-concept of the learner

Janice worked to accommodate what she saw as the MAs' desire to be autonomous in their decisions to train:

> The [MAs] were like, 'We're not paddling in that cold weather', and we're like, 'Ok'. It was a really long winter. We write a plan in September for the whole year but the reality is that winter carried on too long, and we want them to keep coming, we want their membership, and we also want them to be happy. I'm not going to force a grown 60 year-old to paddle. They don't have a problem telling me they don't want to do something when their safety comes into play.

During training, Janice noted that a portion of the MAs followed her guidance, while others did not:

> Yesterday, I encouraged the Masters to execute a start or two up to a race speed because they had a specific time control workout. So this was mock racing. A handful of athletes were really appreciative and valued that guidance. However, a couple just pushed off the dock and went straight to the start line. I just watched and I was like, 'Alright, whatever works for them'.

MAs varied in their interest to follow direction, and Janice noted that some athletes were keen to simply derive the workout's fitness benefits while others valued her detailed instructional guidance.

With her youth athletes, Janice was able to authoritatively execute her training plan without athlete input, but within that plan, athletes were self-directed at times, notably during off-season training:

> In the Fall, I'm [in the boat] at the top by the swim dock, and [the other coach] is down by the bottom of the islands. We just have kids paddling around us, and when they paddle by, we will yell a command. We just tell them to switch gears every half lake. So, yes, I had to teach them how to do that [at some point in the past] and I always have to remind them to 'turn early'. But for Fall and Spring, I'm mostly a safety boat (laugh). I'm coaching, but it's totally self-directed. [I say], 'Guys, the workout is 12 or 15k'. And these kids do it [on their own].

Janice also reinforced to her youth athletes the importance of taking initiative in training. She taught them to assume a more self-directed approach in learning situations by reminding them that they are not always required to wait for her prompt before carrying through with training procedures:

> What I have been seeing more is athletes taking initiative and, at the end of a workout, doing their cool-down without me saying, 'Alright guys, cool down'. I think they're starting to figure out that they can [work] on their own time. They can actually be learning and making changes to their performance.

Despite granting them room to self-direct in certain situations, Janice felt as though youth athletes lacked the maturity to do so in unsupervised environments. She acknowledged, "I don't think I could trust my [youth] group entirely to run a practice. Would they do it properly? No, not really. They're self-directed [but only] when we're watching them." Thus, Janice provided opportunities for her youth athletes to be self-directed, but only within specific situations of the training program that required less demand and supervision from her.

Janice took a different tact in the development of her training plan depending on the age cohort with which she worked. She more readily invited feedback from MAs in her planning

because their training recommendations were realistic and often in line with her expectations for the group. Janice could not permit the same degree of latitude with her youth because she predicted that the athletes' proposed modifications would not respect the integrity of the competitive program she had set forth:

> If I let kids decide what they wanted to do, they'd play 'kick the can' and 'capture the flag' all day. Nothing would get done. And Masters do want things to get done, so I let them [choose what to do] sometimes. Their feedback is heard. Like, in the middle of the winter, they said, 'We've been doing a lot of circuits, could one day we just do hypertrophy styled weights?' And I was like, 'Yeah, sure'.

Working to respect the MAs' mature and capable self-concept, Janice was keen to offer the MAs rationale for her decisions, which she believed allowed them to assume a degree of shared control over the planning of their training program. For example, when making "crews", or teams of athletes who paddle together in the same boat, she said: "We'll be sure to explain to them why [we've made those decisions] and if they say, 'We don't work well together', we'll listen to that." On the other hand, Janice noted an absence of the same collaborative conversational approach with her youth athletes. She often provided all directives up front, which resulted in a very controlled and dictated dialogue, within which the youth had no decisions to make:

> With youth, their questions are 90% the same: 'How hard?', 'How much rest?', 'How many sets?', and 'Where do we meet?' So, I tend to try to just make sure I cover all those points. If it's all explained [up front], they don't have any questions.

In sum, Janice expected MAs to have the maturity and ability to self-direct, and thus allowed them to do so to a greater extent than she did the youth. She also worked to include MAs

collaboratively in conversation and decision-making, applying a flexible approach to training that was not evident within the youth's very structured program.

Prior experiences of the learner

Janice considered her athletes' prior experiences as being entirely derived from motoric domains. There were real contrasts in the ways she valued and utilized these experiences with respect to each of the age cohorts.

Janice recounted the level of motor experience or competency that MAs brought into various learning situations. She described how some of the MAs' prior sport experiences made it difficult for them to presently change their paddling technique. She explained, "When the Masters learned to paddle, they developed certain habits and they're hard to come out of. And also they just can't change their habits because they don't have the skill; they'll just tip." Moreover, she believed that many MAs lacked adequate prior motor experience and were therefore unable to transfer the coach's direction to technical paddling execution. She felt their lack of prior motor skill meant they could not make strides of improvement as readily as their youth counterparts.

With youth, Janice did not describe a lack of prior motor skill to be a concern. Instead, she noted that, on occasion, she needed to consider motor skills they had learned from working with previous coaches. Without contradicting their prior learning, Janice used these experiences to help them better understand technique. She highlighted alternative ways to achieve similar skill mastery, allowing the athletes to recognize the value of their experiences within learning situations:

> Youth tend to be coached by different coaches [prior to working with me]. So I made a note to never contradict another coach, but to ask an athlete, 'Hey, do you want to explain

> to me what it is that you were working on and how you came to have that skill?' They'll say, 'Oh, this coach told me to do it'. And I'll say, 'Alright. Do you know why?' We'll just have a dialogue. Eventually I'll say, 'Well, that's good, but it's not working for you so we're going to try this', and they're like, 'Oh, ok!'

Holistically, Janice appeared to assume very low estimations of the transferable, prior motor skill that MAs bring to learning situations. She did not describe any strategies to tap into her MAs' motoric history, nor did she appear to explicitly value their prior motoric experiences, and often saw these experiences as hindrances to be overcome. Further, she did not appear to use their knowledge derived from other non-motoric (e.g., cognitive or emotional) experiences to help them learn. On the other hand, she did take steps to recognize her youth athletes' experiences and considered them rich resources for current learning.

Readiness to learn

Janice equated readiness to learn with two very different concepts between the two cohorts: the amount of time athletes were able to attend training, and their 'coachability', or ability to focus on and take advice about what they were supposed to be learning.

In terms of the amount of time that the athletes chose to be with her, she recognized that MAs had personal obligations and non-sport responsibilities that inhibited them from attending practice consistently. Janice did not intervene to question where the sport fell on their list of priorities, saying: "MAs have their priorities in their lives and those come first. The number of athletes who are consistently here varies. For example, if they've got teenage kids, it varies at the end of the school year". Recognizing MAs' inability to attend training regularly and their tendency to rush to and from sessions to adhere to other non-sport obligations, Janice could not

engage with these athletes as often as she could with the youth. Thus, Janice saw difficulty in facilitating learning situations off the water with her MAs compared to with her youth:

> The kids always attend practice. I try to keep it simpler for Masters. The reality is, when I have more time with the Masters, like in Florida when we're training together ten times a week, I can have conversations [off the water] because they have nowhere else to be. When the Masters are in Florida, they're in Florida to paddle, so I can take up a lot more of their time, and I'm not rushed [like I am at regular training sessions].

Janice realized that her youth athletes too had other non-sport commitments, although they always attended the prescribed eight practices per week (during in-season training). Thus, she implemented stress-reducing activities into her practices, such as yoga and meditation, and noted that goal setting kept the athletes engaged and committed:

> This is possibly one of the busiest times they'll ever have in their life because they leave their house at 5:30 am and they don't get home until 7 pm. They're learning, they're being challenged, and then they're going through all these other things in their life, like emotions and relationships and school. So I try to not overwhelm them, I try to use [stress-reducing activities] as tools to help them achieve success [in sport and in school].

Because she spent so much time with the youth, she took advantage of alternative training methods, which she did not have the opportunity to do with MAs unless they attended a separate camp in Florida. Janice perceived that MAs' commitment fluctuated heavily compared to that of the youth, and felt that the degree of attendance impacted their readiness to learn in training. Generally, she seemed to expect sporadic attendance on the basis of the MAs' adult roles. She did not hold MAs accountable for their absenteeism, but expected youth to attend all practices:

> I have more time with my youth athletes. They have a lot bigger goals. Not that Masters' goals aren't big, but with the youth, it's just a different mindset. They've got their eyes on Junior Worlds and Canada Games and hopefully a higher competition. MAs want to be the best that they can be and race at the national level, but the time to the sport is different so that's why things just seem different on the water when I coach them.

Thus, she appeared to place greater importance on the youth's readiness to learn as evidenced by their attendance at practice, because of expectations for competitive success that did not exist for her MAs.

Despite MAs' constraints on their investment in practice, Janice noted that when present, they were highly coachable athletes and ready to learn from her: "MAs have this ability to manage their time efficiently, they're goal-oriented, and they have a great work ethic. They're giving 100%. They are hardworking individuals and they care. [When] they come [to practice], they're ready to work." On the other hand, Janice noted some youth athletes' inability to focus as a factor limiting their readiness to learn. For those individuals, she structured her conversations in ways to enhance their focus, as opposed to directly addressing technical issues:

> If an individual who has discipline issues is talking every single practice and my expectation is for them to not speak and to do the work, that's what I want them to learn. And it sounds kind of silly to say that an individual needs to focus on discipline throughout a practice, but a lot of them are not focused, because they're kids.

Furthermore, Janice noted that unlike the MAs, her youth athletes were sometimes disrespectful about how they might learn from her: "Masters don't question the program or the work, in terms of, 'Oh, I don't want to do it'. Kids do that." Janice explained that youth used this resistance to test the boundaries of her discipline:

> I think that the Masters respect the role of a coach sometimes more than youth. I think youth do respect the coach but sometimes they think they know better. Masters do know their bodies quite well. I'm not going to push [MAs] when they tell me [exactly] what they're capable of.

Janice understood her MAs as being ready to learn more so than youth based on MAs' maturity to respect her role and take her advice, to be more "socially" coachable, or agreeable to be coached in various on-site practice contexts.

In sum, youth spent more time than MAs in the learning environment with Janice, and she expected youth to be there in order to achieve their competitive goals, while she did not have those expectations for MAs. However, when at practice, she noted that the youth were not able to focus as well as MAs, thus appearing as less coachable in terms of taking Janice's advice.

Orientation to learning

Janice used learner-centred questioning techniques with both age groups to actively engage the athletes in learning. By asking them how they felt and what they thought they could do to resolve an issue, Janice empowered the athletes while still guiding them to a solution that she personally felt was sound:

> If I get the MAs to do a drill, I'll ask them how they felt. And if they say 'Well, it was really tippy', I'll be like, 'Alright, so what can you do differently?' Sometimes it's just, 'What do you think you need to do?'

She continued:

> [I often ask youth athletes in crew boats], 'How did it feel?' 'Oh, well our timing was off for our legs, so we're going to try this drill and we're going to really focus on this'. 'Great'. And if they're wrong, I'll tell them. I'll be like, 'Actually, I'm going to get you guys to try

this'.

Although her learner-centred questioning approaches were generally quite similar between cohorts, there existed differences in the ways that she utilized problem-centred orientations between the MAs and youth. With her MAs, Janice saw program modifications as being problem-centred. She worked with each MA to ensure they were able to execute the practice as written, modifying drills together on the basis of their limitations:

> The problem solving happens with coach and MA when I have a program and they've got something hindering them from completing it. We work together. So problem solving or modification, I feel like they coincide. Everyone has to figure that out for themselves how they're going to handle a race type situation, but I provide them with a direction and resources, and then they take what works for them.

In training, Janice often employed a problem solving orientation with her MAs to work through specific issues. By piecing together information, Janice walked the athletes in a step-wise manner toward a solution that they could understand:

> Yesterday, (name of athlete) came up to me and said, 'I am entered in a 1000-meter race in K1 (one-person kayak). I'm so nervous, I don't know what to do'. I said, 'Give me three things you need to work on', and so he listed three things. Then I broke down 1000 meters, and I placed each technical focus 250 meters apart. It's like a light bulb went off. He was like, 'Oh, that's great, I got it. That doesn't seem that hard'. I said, 'Every day you go out and you execute that at a low intensity and a slow pace'.

Janice listened to the MAs in training and helped lead them toward solutions in technical execution.

She helped her youth athletes work toward technical improvements in training by using

varied and explicit problem-based strategies including video analysis, reflection exercises through e-mail, and drills. Janice was learner-centred in orienting her athletes to return to drills and offered them empowerment within learning situations to select those that they felt would best address their specific issue:

> These past couple of weeks, we've been going through slow motion video individually with each athlete. I send the video to kids throughout the year and I just ask them to e-mail me back with two things [they feel] they're doing well, two things [they feel] they're not doing well, and a drill that would work on the area for improvement.

Overall, Janice was able to utilize the extra time she had with her youth by introducing additional learning tools such as video analysis, which she did not do with MAs. On the other hand, she allowed MAs to orient their learning through program modifications, a piece that was not afforded to her youth.

Motivation to learn

Janice perceived that she had a role as 'motivator' for her MAs. She fostered a community atmosphere at the training site and challenged their fitness and athletic improvement to enhance their intrinsic motivation. She used varying types of encouraging feedback with her MAs depending on what each individual wished to derive from the practice. When athletes stepped outside of their comfort zone to try something new, Janice provided motivating dialogue and feedback to applaud their efforts. For less ambitious individuals, she engaged in friendly conversation to allow the athletes to simply feel comfortable in the training environment:

> Before practice, a MA will ask me to look out for them because they're taking their 'tippy' boat. So after practice, it's all about, 'Wow, you did it! I'm so proud of you; that was awesome!' [For] somebody else, it's like, 'How did you feel? You looked like you

> slowed down towards the end of this piece'. Somebody else that was just there and lined up for the practice but could have gone on their own, it's like, 'Hey, how's your day going? What is up?' So they're totally individual conversations [based on what the athlete wants from the practice].

Thus, Janice was tasked with understanding when and how to give motivating feedback depending on the nature of the individual and their personal goals. In all cases, however, her feedback was oriented in ways to enhance the MAs' self-efficacy through informative and encouraging feedback:

> With Masters, I don't want to discourage them. So I find out what they're working on, I'll let them know, 'Hey, I could tell [you were working on that]!' or, 'This is really good, but I want you to add this'. I had a whole athletic career of being critiqued and the reality is that constructive criticism or applause feels really good, too, sometimes. So I praise their efforts and let them know that, 'Hey, I can tell what you're working on, so that's great'.

Thus, the motivational feedback given to MAs appeared to be about Janice recognizing self-improvement, based on the differing motives of the MAs.

Indeed, Janice considered the heterogeneity of motives that impact learning situations within both her Masters and youth groups. She rather homogeneously viewed the entire youth cohort as being motivated to attain ambitious goals, and thus used similar types of feedback and dialogue with the group collectively. Janice understood her MAs as being more heterogeneous in their motives for learning, requiring her to approach conversations differently with each adult athlete:

> With MAs, I always want to say it's a leisure activity, but there are some [MAs] that are very intensely competitive so I can't generalize. But the youth are all striving for big,

> competitive goals; whether they achieve them or not is a whole other thing, but they jump into a pretty competitive program at a young age.

Because of the competitive orientation of the program, Janice explained that she motivated her youth to work harder by constructively criticizing their efforts:

> For the kid who doesn't want to be there, I'll say, 'You're here anyway, so do the work'. Perhaps I'm hard on them; I wouldn't say that to a MA. I would never say, 'You're here, do the work'. I'd say, 'That was great! How did it feel?'

She took this approach to push the youth athletes, which was a product of the competitive atmosphere Janice fostered in youth training sessions coupled with the lofty expectations she held for each of the athletes. Further, Janice drew their attention to successful role models in the club who had competed at the highest levels, reminding the youth that they were following the same training demands once experienced by each of those accomplished athletes:

> Not every kid likes working hard. However, they know that it's an Olympic sport and we have the best girl and a handful of the best under-23 athletes in the country. They are doing the same things that these individuals did at their age. So it makes their dreams more of a reality [because] they're on the same path, and it's pretty neat to see.

Janice also used a goal-oriented approach by asking the youth athletes what they wanted to derive from their training efforts. She reminded the athletes that their hard work and commitment would allow for the greatest chance to achieve their prospective goals:

> I have the goals right there [stored in the drawer]. A lot of them got specific with what they want to achieve from (name of club) and what they want to achieve with my help. We do it four times a year. And if they want to rewrite them, they can; those eager [athletes] have [ambitious] goals.

Consequently, Janice recognized the youth's competitively structured goals and responded with a motivational approach that catered to this competitive orientation. Given that her MAs' goals varied widely with what she saw as a more pronounced emphasis on participatory motives, Janice did not implement long-term goal setting exercises as readily as she did with her youth, and thus did not use them as motivational tools as she did with those younger athletes.

Discussion

This study pursued two main research objectives. The first was to determine if and how the APM might be used in a coach's facilitation of learning situations within sport, thus testing the principles' application in a new domain. Second, we sought to understand if and how andragogical principles were applied differentially by the coach when working with the two age cohorts of athletes. We note that Janice used andragogy in her facilitation of learning situations, lending credence to using this model within a sport domain. However, we also note that for the most part, Janice used andragogical approaches with the MAs, but pedagogical approaches with the youth. This is discussed, as well as the notion of how coach expectancy plays a part in her coaching approach.

Janice considered MAs as active deliberators of their learning, who would consciously seek and appraise technical information related to the sport. This parallels Knowles et al.'s (2012) perspectives regarding adults' need for information prior to engaging in learning activities, and was especially prominent when the MAs were asked to test the boundaries of their physical comfort zone. In contrast, Janice considered her youth athletes as far less inquisitive and reflective, and explained how they often engaged in training procedures simply because she asked them to do so. Janice's provision of information to youth diverged from andragogy: she provided information irrespective of their desire for it. She more actively dictated their need to

know as opposed to letting the young athletes decide the content of their learning. This corresponds to teacher-centred, pedagogical approaches where the teacher chooses the content and manages the students' progression (Knowles et al., 2012; Siedentop & Tannehill, 2001). Similarly, Janice explained that she was more hesitant to directly provide non-sport-specific information to her MAs unless they explicitly asked her for such. This may be because, as a relatively young coach, she had little experience regarding what it is like to be a MA herself, and this inhibited her from offering suggestions that did not squarely relate to sport-specific situations. It also highlights her inclination to avoid directive instruction without prompt or an explicit 'need to know' from the MAs.

Janice explained how she often provided learning situations wherein her MAs could maintain an autonomous *self-concept*. This resonates with the central effort of adult education programs to allow the adult learners to build personal autonomy (Knowles et al., 2012) and progressively lessen learners' dependency upon the educator (Mezirow, 1981). Janice granted MAs great latitude in planning their own learning content, and reinforced their self-concept as capable and rational decision-makers. Mezirow (1981) asserted that these steps are integral toward enhancing adults' abilities to self-direct. With youth, the same opportunities for autonomy were not given. Janice recognized the importance of providing self-directed opportunities within learning situations, but felt that the youth athletes' less mature self-concept constrained her ability to do so readily.

In terms of the athletes' *prior experiences*, Janice discounted MAs', but not youth's, ability to transfer prior motor skills in learning situations. This finding is contraindicative of andragogy, given that Knowles et al. (2012) suggest that educators should capitalize on adults' broad reservoir of experiences and interpret them as rich resources for learning in the present

context. Given that Janice only spoke of motoric experiences, and felt that MAs were not as strong as youth in this aspect, it is possible that MAs' lack of skill was equated to having no prior useable experience. However, Janice's inability to think about how MAs' prior experiences outside of paddling could contribute to their learning limited her capacity to apply this adult learning principle.

Janice discussed MAs' *readiness to learn* in the sport context as their ability to fully invest in the coach's provision of useful information when at training. This is related to andragogy, as MAs are able to "assess the gaps between where they are now and where they want and need to be" (Knowles et al., 2012). On the other hand, Janice equated youth's readiness to learn with the amount of time she spent with them in training. Therefore, she felt that youth were dependent on her presence in order to learn. This can be interpreted as a teacher-centred approach, better aligned with pedagogy than andragogy (Knowles et al., 2012).

In this study, Janice considered *orientation to learning* similarly between cohorts. She assisted both groups of athletes through sport-related issues, providing problem-based strategies and helping the athletes piece together information toward effective paddling execution. However, the strategies used with youth (e.g., video analysis) were largely coach-governed and directive. With MAs, Janice more readily acknowledged their learner-centred orientation (Henschke, 2014), implicitly weaving notions of problem solving in situations where she allowed the athletes to provide planning recommendations. This corresponds more squarely to an andragogical approach to learning facilitation, and is differentiated from the more traditional or pedagogical methods of instruction as evidenced in the youth's training.

Janice largely drew upon participation discourses (Dionigi & O'Flynn, 2007; Tinning, 2007) as *motivating* aspects among MAs. She highlighted elements of inclusion, enjoyment, and

fitness, and chose encouraging feedback; all of which encompass intrinsically motivating dialogue. This supports the andragogical tenet that adult educators should work to satisfy adults' internal needs in order to motivate them to learn (Knowles et al., 2012). Alternatively, she implemented a goal-oriented and competitive approach to motivate her youth athletes by drawing their attention to successful role models and regularly providing goal setting exercises. Motivation among youth, therefore, was described more extrinsically, and thus derived from a more pedagogical perspective of learning (Knowles et al., 2012).

From an overarching perspective, the expectations that Janice maintained for her MAs and youth athletes appeared to be related to pseudo-ageist assumptions. Janice appeared to hold certain assumptions, or expectations, for the athletes' abilities, which constrained the types of learning situations she afforded them. For example, ageist beliefs within Masters sport contend that high levels of competition are exclusive for younger cohorts, and for professional or Olympic-level athletes (Young et al., 2015). Being a relatively young coach (30 years old) with the majority of the MAs many years her senior, Janice's ageist expectations may have had a bearing in her low estimations of competition among MAs, and discounting MAs as being capable of having adequate prior motor skill and experience. While these ageist views are said to be derived from several sources (Ory, Kinney Hoffman, Hawkins, Sanner, & Mockenhaupt, 2003) and considered through the lens of individuals such as stakeholders or sponsors (Young et al., 2015), no previous research has considered ageism through the lens of sport coaches.

Young and Medic (2011) described the need to consider the heterogeneity of motives among MAs, accommodating for health, fitness, and social affiliation benefits while equally acknowledging desires for personal striving, mastery, and competition. This may serve as a more useful way of programming Masters sport, and a better lens through which coaches look to

accommodate motives that are typically heterogeneously defined among any group of MAs (Rathwell et al., 2015).

Turning to the APM, the outer ring elements of individual/situational difference variables and the goals and purposes for learning are implicitly woven into the storyline of the six core principles. Another element that we saw as integral to the coach's facilitation of the six andragogical principles was her own expectations of her athletes, which interacted with her competitive expectations for each cohort. These expectations are critical in the mental representations that coaches hold for the estimation of their athletes' potential; according to sport coaching models (e.g., Côté, Salmela, Trudel, Baria, & Russell, 1995), they also feature centrally for how coaches conduct themselves in training, competition, and organizational roles. In the current study, the coach appeared to hold expectations for both the MAs and youth athletes' skilled, physical, and behavioural abilities, which appeared to ultimately inform her various approaches with either cohort.

Conclusion & Limitations

There existed some limitations in the study that might be built upon in future research. The instrumental, single case study methodology allowed the approaches of only one coach working in one sport to be assessed. Thus, future work might benefit by investigating the approaches of multiple coaches of different gender, age, and sport types. Additionally, because we assessed only the coach's perceptions of her approaches, the athletes' perceptions of the same approaches were left unconsidered in the current study.

Despite the aforementioned limitations, the study's results indicate that the APM can be used within a sport coaching domain, through evidence of the andragogical principles in Janice's

perceptions of her coaching approaches. We interpreted each principle's utility in sport while still following the central tenets of Knowles et al.'s (2012) operational definitions.

The findings have also described key differences in the principles' application between cohorts. Janice's perceptions of her approaches with MAs corresponded well with tenets of andragogy, while those with youth were considered largely pedagogical. However, because notions of andragogy were sometimes still evident in her coaching practice with the youth and pedagogy in her practice with MAs, we concur with Knowles et al. (2012) that andragogy and pedagogy are used on a continuum, in which andragogy as a conceptual framework is not exclusive for adults and pedagogy is not exclusive for young people. The flexible, interactive application of andragogy as described by Knowles et al. appears to be a beneficial interpretation of the framework's utility in sport coaching. Thus, although the study indicates that andragogy largely appears useful among MAs and pedagogy among youth, it also highlights the increasing need for coaches to be aware of the instructional methods that are most beneficial given the specific situation. Finally, because it could be argued in the study that ageist expectations precluded Janice from utilizing certain principles (e.g., prior experiences) in an andragogic manner, coaches should be mindful of such ageist discourses that can permeate Masters sport.

While these findings are specific to one coach's approaches, it serves as the first to comparatively describe coaching approaches taken between Masters and youth athletic cohorts, especially through the consideration of differential teaching approaches in the sport context. Thus, these results are a worthwhile consideration for future research studies in this domain. The APM has served to aptly frame such differences, allowing this study to stand as a useful resource for sport coaches to consider when facilitating age-dependent learning situations for his/her athletes.

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MANUSCRIPT 2*: Investigating Masters and youth canoe/kayak athletes' perspectives of their coach's approaches to facilitate their learning*

Investigating Masters and youth canoe/kayak athletes' perspectives of their coach's approaches to facilitate their learning

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Abstract

Whereas traditional, coach-directed pedagogies have dominated youth sport coaching practice (Cassidy, Jones, & Potrac, 2009), little is known about how coaches orient their approaches to facilitate adult athletes' learning. This instrumental case study explored Masters athletes' (MAs) and youth athletes' perspectives of their canoe/kayak coach's approaches, with an aim to understand if and how approaches differed based on the age cohort. Four focus group interviews (two with each age cohort lasting 60-90 minutes) were conducted with nine youth (five male, four female; 14-15 years old) and twelve MAs (six male, six female; 27-70 years old). Data were first analyzed using the Andragogy in Practice Model (APM; Knowles et al., 2012), then inductively analyzed, resulting in three higher-order themes: coaching the individual; coaching within the situation; coaching within the climate. Results indicated that MAs felt their coach responded well to their need for information, gave them room to make decisions, and engaged them in collaborative conversations. Youth athletes described their coach's approaches as more directive: she made decisions for when and how they trained, provided information linearly, and maintained a climate of highly competitive expectations. Whereas coaching approaches with MAs closely paralleled andragogical principles, those for youth aligned with more directed instructional methods. Findings illustrate how one coach's approaches varied on a continuum from coach-directed (i.e., traditional pedagogical) to athlete-directed (i.e., andragogical) styles, as both were evident to some degree with each cohort. MAs' perspectives situated their coach's approaches further along the continuum toward andragogy, while approaches with youth showed more interplay between andragogical and pedagogical styles.

Key words: andragogy, coaching, contemporary, learning, pedagogy, sport, traditional

Investigating Masters and youth canoe/kayak athletes' perspectives of their coach's approaches to facilitate their learning

The study of sport coaches' approaches is important when considering how to strategically improve athletes' learning (Jones, 2007). Pedagogical literature suggests that teaching or coaching approaches based on conceptually-sound principles work to facilitate enriched, authentic, and meaningful learning experiences for learners/athletes (Jones, 2007). The intricacies of coaching athletes and teaching students are in close parallel (Cushion, Armour, & Jones, 2003; Gilbert & Trudel, 2001; Jones, 2007). When coaching and teaching are acknowledged as being conceptually similar, educational theories are viable frameworks to enhance coaching practice (Jones, 2007). In the current study, we used an education-based framework that is used with adult learners to understand a coach's approaches to facilitating learning situations from the perspectives of youth and adult athletes.

Traditional, directed coaching pedagogies view learning in sport as the linear transmission of pre-determined, objectified knowledge from coach to athlete (Culver & Trudel, 2008; Light & Robert, 2010). 'Traditional' coaches assume an 'expert' status and stringently deliver technical information to lead their athletes toward fixed solutions (Vinson, Brady, Moreland, & Judge, 2016). Teachers exercising directed instructional styles autocratically decide the content and delivery of such content (Siedentop & Tannehill, 2001), which Rink (2010) describes as considerably limiting student autonomy. Directed approaches (Cassidy, Jones, & Potrac, 2009) have dominated coaching practice in youth sport. Cushion and Jones (2001) found that coaches of youth frequently delivered instruction and feedback in supportive ways, but rarely used questioning techniques to wholly involve their athletes in learning content. The recurrent use of directed instruction and feedback without gauging athletes' understanding

creates a top-down, information-laden approach whereby athlete engagement and problem solving may be sacrificed (Wulf & Shea, 2004). Directed practice activities typically follow a standard progression on the basis of the athletes' skill level and maturity (Williams & Hodges, 2005). When youth sport programs adhere strictly to a directed practice approach, there can be over-emphasis on drill-type activities over practicing in authentic game-like situations, thereby limiting opportunities for athletes to evidence the relevant application of their learning (Ford, Yates, & Williams, 2010). Coaches using directed methods tend to provide a wealth of instruction, control how the information is delivered, and address the collective group as opposed to each athlete individually (Cassidy et al., 2009). Coaching researchers (e.g., Ford et al., 2010; Light & Dixon, 2007) have contended recently that traditional sport pedagogical approaches are ineffective and overused, arguing for more athlete-centred approaches that allow athletes to meaningfully engage in learning situations, to critically think, and problem solve (Kidman, 2005). Such 'contemporary', non-linear sport pedagogies are constructivist, as coaches work to facilitate situations that encourage athletes to 'build' their own content and progression of learning (Ollis & Sproule, 2007). Ford et al. (2010) advocated for contemporary approaches because they stimulate learning through guided discovery and foster greater coach and athlete interactions, yet also noted they have been seldom practiced in sport. Although allowing athletes to work independently without rigid coach direction may be crucial for athlete development, coaches are often reluctant to hand over authentic decision-making opportunities for fear of losing control (Ford et al., 2010). As a result, athlete-centred approaches have been largely unexplored in sport coaching and the nuanced aspects of adopting such approaches remain predominantly unknown.

Coaching research with adult sportspersons (i.e., Masters athletes; MAs) reinforces the call for greater study of more contemporary coaching approaches that diverge from directed instruction and encourage athlete/learner involvement. Several studies (e.g., Callary, Rathwell, & Young, 2015; Ferrari, Bloom, Gilbert, & Caron, 2016; Rathwell, Callary, & Young, 2015) suggest that MAs require coaching approaches that differ from those used with younger groups. Callary et al. (2015) indicated that MAs' mature and experienced self-concept warrants coaching approaches that foster self-directedness, promote problem solving in learning activities, and encourage critical appraisal of learning content. Importantly, Callary et al.'s interviews also revealed MAs wanted to be coached differently than youth. In other words, coaches of MAs may be challenged to move away from 'traditional' pedagogical approaches to involve MAs more meaningfully in their sport experience. Moreover, these findings appear to coincide with a set of fundamental principles from education, collectively termed andragogy.

Andragogy represents the art and science of helping adults learn (Knowles, 1970). While andragogy was initially conceived as an antithesis to pedagogical approaches and tailored to fit various characteristic assumptions for adult learners, its principles have recently been argued to benefit learners of all ages (Knowles, Holton III, & Swanson, 2012), and also appear to reflect contemporary teaching approaches advocated for both youth and adult students alike. Adult learning theorists (e.g., Knowles et al., 2012; Merriam, Caffarella, & Baumgartner, 2006) contend that the tenets of andragogy exist on a continuum from very teacher-directed approaches to ones of high learner self-direction and autonomy. Following this interpretation, coaches are tasked with understanding which approaches to apply on the basis of the learners' situation and prior experience. For example, learners with little to no experience in a specific content area, regardless of their age, would likely need to be taught in a very teacher-directed manner until

they garnered enough experience and expertise to carry through with procedures more autonomously. Knowles et al. (2012) acknowledge flexibility in the application of andragogy, in that principles can be adopted in whole, or in-part, depending on the learners' needs in a particular learning situation.

Knowles et al.'s (2012) Andragogy in Practice Model (APM; see Appendix A) is a three-ringed conceptual framework. At the core of the model are six fundamental andragogical principles: 1) learners' *need to know* the purpose of the learning content before undertaking to learn it; 2) learners' *self-concept* as being capable of autonomously self-directing their learning; 3) learners' wealth and quality of *prior experiences* that richly influence current learning situations; 4) learners' *readiness* to respond to a need or desire for current learning; 5) learners' *orientation to learning* that is life- or problem-centred; and 6) learners' *motivation to learn* that is derived from internal needs or desires (Knowles et al., 2012). The model's second ring includes individual and situational difference variables, which are grouped into three categories: *individual learner differences*, *situational differences*, and *subject-matter differences.* These variables impact the ways in which learning situations are facilitated (Knowles et al., 2012). The outer-most ring holds the goals and purposes for learning, which include *individual*, *institutional*, or *societal* growth goals that shape the learning process. According to the APM, educators who make efforts to satisfy some or all of the six fundamental principles as they see fit in a given situation, in cohesion with second- and third-ring elements, are expected to facilitate more authentic and meaningful learning experiences for their learners (Knowles et al., 2012).

Despite an apparent fit between andragogical tenets and more contemporary teaching approaches advocated for sport coaching, a paucity of research considers non-linear 'contemporary' coaching approaches, as well as a principle-driven framework to assess these

approaches. Furthermore, no published empirical work has compared if and how these coaching approaches are differentially applied between adult and youth athletic cohorts, involving an explicit comparison of coaching approaches with youth compared to MA cohorts. Thus, this study aimed to understand a coach's approaches to facilitating learning situations for each of her youth and MA age cohorts, based on the perspectives of the athletes themselves. Using the APM as a conceptual guide, we sought to examine how the coach's approaches compared between the two age cohorts, with specific attention to how the coach's approaches were dependent on the individual athletes, the situations within which they trained, and the goals and expectations for athletes in the training climate. With notions of contemporary coaching approaches and the APM in mind, we investigated whether the coach's approaches were differentiated based on athletes' age.

Method

We followed an instrumental, single case study methodology (Punch, 2013) to gather an in-depth understanding of one canoe/kayak coach's approaches through the perspectives of both her MAs and youth athletes. Ethical approval for all study procedures was attained from the host university's Research Ethics Board prior to participant recruitment. We obtained consent from the canoe club commodore, the coach, and subsequently from the athletes and from parents of youth before the data collection process commenced.

Participants

We selected one female canoe/kayak coach for the study on the basis of her satisfaction of pre-determined selection criteria. At the time of the study, the coach was 30 years of age and was coaching full-time at an Eastern Canadian canoe/kayak club that offered competitive participation for both Masters and youth athletes. She had been coaching MAs in the sport for 14

years, and youth athletes for 9 years. Within her club at the time of the study, she was coaching 15 MAs between 27 and 70 years of age, and fifteen U16 youth athletes aged 14 and 15 years. The coach had 10 years of experience competing in the sport in her youth, and was entering her fifth year of competition as a MA. She held a master's degree in sport psychology and coach education, and was certified through the Canadian National Coaching Certification Program (NCCP) as a Competition-Development coach. The coach described reflective practices, her ability to learn from fellow coaches, use of resource books, and membership in a female mentorship program as methods by which she improved her coaching knowledge and practice.

Athletes were recruited through purposive sampling (Marshall & Rossman, 2011). Nine youth athletes (five male, four female) aged 14 and 15 years, and 12 MAs (six male, six female) aged 27 to 70 years agreed to participate in focus group interviews. The youth and MA groups trained with the coach separately at different times. All participating youth athletes were part of the 'competitive group' who trained year-round, 8-10 times and for an average of ten hours per week. There were no formal distinctions between competitive or recreational MA groups, as all MAs formed one Masters group at the club. However, all MAs who participated in the study spoke in focus groups of their competitiveness and eagerness to improve skill and fitness abilities by virtue of their sport involvement. These MAs trained with the coach 1 to 3 times weekly for a total of 2 to 6 hours, but were given opportunities to train on their own outside of scheduled club hours. While the youth described having similar paddling experience in comparison to one another, the MAs varied more significantly in this regard; some were recently introduced to the sport while others had been training in the sport for a number of years. Further, because the age range of MAs was considerably larger than the youth's, there existed greater degrees of heterogeneity within their group. For example, some MAs were retired while others maintained

busy careers; some MAs had to attend to their children's numerous obligations, while others had children who had already left home. Such differences in age and commensurate occupational/familial responsibilities meant there was more inconsistency for some MAs at training and varying goals for MAs depending on the day. In contrast, all youth described their outside-of-sport obligations similarly and reported similar competitive goals. Finally, all MAs and youth athletes agreed that they liked their coach and considered her approaches to be effective. They acknowledged her as being a coach with professionalism and integrity, and respected her efforts to facilitate their sport development.

Data collection

Data were collected in-season and included four, in-person focus group interviews; two focus group interviews with each of the youth and MA cohorts, each lasting between 60 and 90 minutes. The first and second interviews, for each group, were conducted twelve days apart, and included eight and nine participants respectively. Therefore, eight of the nine youth athletes participated in both interviews, while one athlete participated in only the second. Of the eight MAs who participated in the first interview, five also participated the second time, and were joined by four others who were part of the second interview only.

Each interview was conducted on the practice site directly following a training session. During the preceding training session, the principal investigator (PI) acted as a moderate participant observer (Spradley, 1980) and documented field notes of observations that he interpreted as being related to coach-facilitated learning situations. For example, the PI documented field notes related to aspects of drill design, instances of verbal dialogue, and examples of interactions between coach and athlete. These notes were organized categorically in advance based on the principles of the APM, but actual interview questions were developed in

the interim between the end of the observed training session and the time at which the athletes finished their cool-down, put away their boats, and gathered for the focus group. The PI organized probing questions sequentially within a focus group semi-structured interview guide to ensure that situations related to elements of the APM. Questions were open-ended and semi-structured, which allowed the PI to direct the focus group discussion while granting room for all participants to speak openly without restrictions (Rubin & Rubin, 2012).

The APM (Knowles et al., 2012) served as the study's conceptual framework, framing the process of generating field notes and translating those notes to interview questions. Specifically, field notes were organized categorically on the basis of how the PI interpreted their relation to one of the six andragogical principles, and were then used to create probing questions that aptly covered each. The order of questioning in the guide also followed this categorical design, whereby the PI made efforts to saturate all questions related to one principle before moving to the next.

Using the focus group interview as a method of data collection allowed us to attain the perspectives of multiple athletes while using group interaction to help facilitate the discussion. As per Kitzinger's (1995) suggestions, we used the interview to explore the athletes' experiences with their coach and clarify how and why they held their various perspectives. During each interview, the PI worked to ensure that each participant had a voice and was engaged in the discussion (Rubin & Rubin, 2012). The interviews were conducted in a relaxed setting within the clubhouse on the training site. All athletes sat in a circle with the PI and were encouraged to treat the interview as an informal conversation, as a method of fostering comfortable dialogue between participants and with the PI (Kitzinger, 1995).

The process of performing participant observation, translating field notes to probing questions, and conducting focus groups was piloted with both MAs and youth athletic cohorts prior to the study. The PI conducted seven pilot interviews in total (two with a Masters CrossFit coach, two with a youth soccer coach, and one each with a Masters ski coach, Masters track and field coach, and another youth soccer coach). The PI also conducted four participant observation sessions (two with each of the Masters CrossFit and youth soccer groups). This piloting process ahead of data collection allowed the PI to develop strategies for building rapport with athletes of different ages, as well as producing viable questions that reflected key learning situations observed during coach-facilitated training sessions.

Data analysis

Each focus group interview was audio-recorded and data were transcribed verbatim using an online software program, InqScribe (InqScribe, 2015). Upon completing minor edits to remove identifying information and correct grammar, the transcripts were uploaded within QSR NVivo8 analytical software (NVivo, 2008). First, the transcripts were read and re-read in their entirety to fully understand the data. The PI then used the six deductive principles of the APM as a guiding lens to code the data; specifically, the data were organized into six categories based on the PI's interpretation of their fit with each andragogical principle's operational definition. There was an explicit attempt in this process to code data related to the athletes' perspectives of their coach's approaches, meaning that the retained data necessarily specified a coaching strategy, action, interaction, exchange, or address with an athlete.

The PI organized data initially by creating subthemes under each of the six deductive principles. After completing this step, the PI acknowledged distinct overlap of these data across each of the six deductive categories. Specifically, in trying to code deductively, the PI

acknowledged that many themes could be better explained across multiple principles (or deductive categories), as opposed to only one. The PI felt that using a more inductive analytical approach would allow the richness of the data to be retained and the athletes' specific perceptions of their coach's approaches more accurately portrayed. The PI then continued to organize the several subthemes into higher-order categories with respect to the broader storylines in the data. As the PI began to group those subthemes together on the basis of their convergence and divergence, he collaborated with the study's co-investigators to share these interpretations, to decide which themes were crucially important to the storyline, and to vet his coding decisions to arrive at consensus. He presented his co-investigators with a detailed spreadsheet that included various developed subthemes organized in relation to the andragogical principle that he felt each best described. Each subtheme was colour-coded to indicate either their similarity or difference to other subthemes and was compared between MA and youth cohorts. At this point, the co-investigators provided insight regarding which subthemes they felt were most relevant to report. All researchers agreed with complete consensus that three overarching, higher-order themes helped to better explain the data. These themes were eventually designated: (1) *coaching the individual*; (2) *coaching within the situation*; and (3) *coaching within the climate*. In the Results section, these higher-order themes are sequentially presented to follow a progression from micro (i.e., individual) to macro (i.e., contextual climate) intricacies.

Credibility and trustworthiness

Multiple measures augmented data credibility and trustworthiness. Rigourous pilot work completed prior to data collection allowed the PI to confidently detect learning situations during observed training sessions and translate the resulting field notes to probing questions. Asking questions predicated on observed situations allowed for a notion of triangulation (Patton, 1999),

ensuring that situations were experienced by each of the athletes, the coach, and the PI. Additionally, the credibility of the developed inductive themes and the coding of quotes within them was enhanced because all three investigators were involved in the analytic process.

Results

Results are organized into three higher-order categories: 1) coaching the individual; 2) coaching within the situation; and 3) coaching within the climate. Noting that these categories are not entirely mutually exclusive, we have attempted to weave the interconnectedness of the findings to present a narrative summary of the results. Within each section, we have made explicit efforts to draw attention to where results were similar or different within the youth and MA cohorts, and where certain coaching aspects were particularly nuanced as a function of the age cohort. To protect anonymity and credit individual quotes, participants have been assigned coded identities with MA and Y designations reflecting Masters and youth participants, respectively.

Coaching the Individual: Methods of Communication, Exchanges, and Interactions

The following category describes the coach's communication strategies as perceived by each of the MA and youth groups. Findings highlight the coach's approaches to deliver information and feedback on the basis of the individual athlete, and are organized into a number of subthemes that are presented sequentially: coach's provision of technical and knowledgeable feedback; questioning as a learner-centred technique; facilitating the directionality of communication; strategies for addressing clarification; information delivery styles; and facilitating collaboration within conversational exchanges.

Athletes in both the MA and youth cohorts discussed receiving *technical and knowledgeable feedback* from the coach. Because the sport of canoe/kayak appears to naturally

constrain the intimacy of on-water, detailed conversation between coach and athlete, the coach could often only afford broader (i.e., less-detailed information shouted across space) constructive technical corrections to athletes in both cohorts. Nonetheless, the athletes discussed being open to that type of feedback. MA2 explained:

> I have no issue with her saying my name and then telling me what to fix. And I prefer that. Because even when she says, '(Name of other athlete), sit up', or, 'tighten your core', it makes me tighten my core. So I prefer knowing that she's saying something that I need to correct and go ahead and tell the whole group.

The youth held similar sentiments. Y5 commented: "Usually, it's just really quick [on the water] because she's looking at everybody. So, she'll be like, '(Name of athlete), nice set up!' '(Name of athlete), focus on the legs!' Just stuff like that." The coach's practice of giving technical correction by addressing athletes by name in front of their peers was not bothersome for youth or MAs. Athletes in both cohorts did not mind how in-practice feedback was specifically delivered, as long as they received knowledgeable feedback that they could use to improve technique. Besides the coach, both MAs and youth described how they were keen to listen to other paddlers' feedback and directives they could apply to their own technical execution.

Off the water, the athletes described how the coach allowed each of them to approach her for additional feedback or clarification. Both age groups spoke of using post-practice, one-on-one conversations with the coach to better affirm that they were on the right path to achieving proper technique. However, only the youth acknowledged that the coach worked with them in separate off-water "technical/tactical" group sessions, where she led them through video analysis and provided feedback that broke down the specific mechanics of their paddling stroke. All of

the youth attested to how she used video analyses, in a group setting, to deliver individual feedback and critique. For example, they explained:

> Y5: [During] the video session, literally she'll pull up one of the videos and she'll be like, 'Ok, this one was a clear view of these people but let's just focus on this person first'. And she'll slow-mo it and pause it and then pinpoint what you need to do. Y4: I like the visual. She can tell us how to fix it, but when I see it myself, I understand how I should do it. Y2: And she'll position your hands and the paddle or your legs, and she'll show you exactly how to go with the stroke.

As part of the video analysis, the coach directed questions to the youth about specific pieces of the video, which represented an example of *learner-centred questioning*. Youth athletes felt that she did this so they could contribute input and because the questioning also enabled her to gauge their understanding of her direction:

> Y5: She asks you at the end, 'Now, is there anything that you see? Do you have any comments on what you're seeing?' And then you're like, 'Oh, I could work on this, but I think that this part of my stroke is good'. And then she'll be like, 'Ok, now to the next person that we can see in the video'.

The youth spoke about how the coach would actively approach them in various off-water situations, and it appeared that her use of questioning was her means to direct the focus of youth toward the things she felt they needed to key on in training. The youth commented:

> Y5: Usually she stops us afterwards and she's like, 'How did it feel today? Why did it feel that way?' Y3: 'What were you working on?' Y5: She'll pull up beside you and be like, 'Hey, how's it going?' (laugh) 'How'd it feel? What are you thinking of?' Y2: Or she'll tell

> you to pick a drill and then she'll ask you why you picked that drill, what it helps in your paddling.

Although the coach did use learner-centred questioning techniques with youth, her approach largely reflected a one-way questioning style.

Comparatively between the two cohorts, there appeared to be a *directional difference related to how questioning happened*. The MAs explained how they often took the initiative to readily facilitate conversation with the coach themselves, to seek information about the priority cues that they needed to work on. They explained how this established a bi-directionality or two-way nature to conversations and questions with their coach:

> MA4: I asked specifically the other day, 'What is the worst thing that I'm doing right now?' MA2: 'How's my lean?' MA3: I'd just ask her, 'What's the first thing I should be working on?' Because the worst thing might not be fixable unless you fix three or four other things.

The notion of directionality in communication between the coach and each group of athletes also related to the athletes' *inclination to ask questions* regarding their training. The varying degree to which youth and MAs sought clarification from the coach appeared to be the result of differences in how the coach engaged them in conversation. Just as the coach approached the MAs in conversation, these athletes too were eager to ask questions to the coach without her prompt, especially before engaging in specific drills. When the MAs initiated such two-way communication, this resulted in a more collaborative instructional style between coach and MAs in various practice situations. MA5 explained:

> I think as adults, we do want to know why. Like a kid might just say, 'Oh, I'm supposed to do that'. I think we're more like, 'Ok, [but] it has to make sense' (laugh). 'We'll do that, but why?' I think we fit it in with what we need, is logical, or would make sense.

The youth, contrarily, spoke of a certain hesitancy, explaining their reluctance to seek clarification:

> Interviewer: Why wouldn't you guys just stop and ask her [for clarification]? Y4: Because she was hammering out the direction, she was going. When she goes, you don't stop [her]. Interviewer: So is it through experience that you realize that you shouldn't stop and ask her those things? Or do you just feel that you don't want to? Y1: She's got the aura of like, 'Don't ask me questions, you should know what you're doing'. Y6: 'Listen to me when I say it the first time'.

They continued:

> Interviewer: But you don't often ask why? Y3: Not often. Y5: Sometimes it's like, 'Why do we have to do drills?' But you kinda keep that to yourself (nervous laugh). Collective: (laughter). Interviewer: Why would you keep it to yourself? Why wouldn't you ask her? Y5: You're gonna do it anyways (laugh).

The youth appeared hesitant to approach the coach with questions because they were accustomed to her authoritative instructional style. This ultimately led to their thinking that if they asked questions, it would reflect badly on them or would suggest that they had failed to pay attention when the content was initially explained. Hence, in situations where the coach neglected to provide additional information, the athletes were required to look to friends or "figure it out" (Y3) for themselves. Overall, this constrained any possibility of an interactive dialogue that was comparatively evident amongst the MAs.

The coach's general communication strategies also appeared to be different in terms of the degree to which she either *repeated herself or chose various non-repetitive clarifying strategies*. The MAs described how the coach was able to explain the same idea in multiple ways that often satisfied their individual preferences for feedback. MA3 elaborated:

> What I like about her is, if you don't understand the first time she explains [a concept], she goes back and tries to explain it a different way. She doesn't just repeat herself. Because generally if you have somebody's attention and they explain something and you really don't get it, just saying it the same way over again isn't necessarily [helpful]. She has a variety of ways to explain the same thing, which is really nice.

Contrarily, Y5 noted how the coach tended to use a repetitive clarification style with their group:

> Usually every once in a while, she'll tell you a couple times, and then if she just realizes that after a couple practices you're not doing it, she'll stop and she'll be like, 'Do you know what I [am asking of you]?' And you're like, 'I have no clue'. And then she'll be like, 'Oh, ok, this is how you do it'.

As opposed to finding novel and different ways to explain the same concept, it appeared that the coach used a less innovative approach with the youth.

The MAs uniquely described how they liked the *style in which the coach would often deliver information*; specifically, how she explained practice directions in a step-wise, structured manner that allowed them to organize their focus in training. MA3 commented:

> [When the coach] says, 'Ok, so you've got step one and two together, now start working on this', [it's like] building the piece of the puzzle. I think with kids, you can probably give them four or five things to work on and they can start to work on them. I know with myself, if you give me more than two things to work on, I'm not going to remember

> anything more than the first two. So just tell me the first two things I need to work on and then once I get that down, start building the rest of the puzzle for me.

Alternatively, the coach often provided youth with all information up front and at once. Y5 said, "Sometimes after practice, [we'll] come up and be like, 'What do I have to work on?' And then there's just like so many things thrown at you, and you're like, 'Whoa! There's so much to process.' Y2 added, "But we usually [try to] get her to repeat it a couple times."

The youth therefore appeared anxious about receiving and trying to process an overwhelming amount of information. This was not something concerning the MAs, who were provided information more succinctly and in ways that the coach felt each athlete could respond to.

The nature of almost all interactions described in this category seemed to revolve around the notion of *collaboration in planning or conversation*. There appeared to be both a tacit and explicit acknowledgement of a lack of such collaboration amongst the youth athletes. They described accepting the coach's directives as they were, predicated on a notion that "the coach knows best" (Y1). The coach appeared inflexible and rather unresponsive to some of the youth athletes' comments. The athletes explained, "Y4: She doesn't really change the practice [if we ask]. Collective: No. Y2: [She'll say], 'Maybe next week' when she writes it. Y4: It's super strict. Y1: She strictly says, 'There's no [changes].'" Comparatively, the MAs spoke of the coach's attempt to be flexible and responsive in their communications. MA3 commented:

> I think as a Masters coach you have to dance a very fine line between playing the political cue and playing the coach cue. You have to manage the wants and desires of the adults along with running a coaching program. Whereas with the kids, they don't get to talk back. Like [if] they talk back, they [are told], 'Now you're paddling in that boat!' We've had some coaches [like my current one] that have been very good at that dance.

> They're very good at the coaching and the managing of the adult personalities, whereas other coaches struggle with managing all of their personality types.

Describing a common situation during training, MA3 added:

> I think it's the coach's way of seeing where your mind is on the water that day. Like, 'What are you thinking about?' Because she's seeing something, but she's curious about what we're thinking about in that drill so that she at least understands what we were trying to accomplish before she says, 'Oh, well maybe you should work on this first'.

The coach's effort to engage the MAs in conversation revealed that she was careful not to overwhelm the athletes by imparting too much information before understanding the adult athletes' perspectives.

Overall, throughout the section, we described the athletes' perceptions of their coach's conversational strategies with individuals in their respective cohort. Although athletes in both groups recognized the coach's *provision of technical and knowledgeable feedback*, MAs noted greater emphasis on *collaborative interactions*, or exchanges that involved the coach responding readily to their questions; in these interactions they established a voice, which lent to their further *inclination to ask questions* for clarification. The youth described how she employed more directive instructional styles and provided them with less latitude to ask questions. In many instances, the act of questioning was not viewed positively by young athletes, for they worried about how it might make them look in the eyes of the coach. The youth appeared to accept things as they were and held what was interpreted as a level of belief in what the coach prescribed for them in training. The youth athletes did, in fact, describe many occasions where the coach satisfied their need to know information and receive feedback, both on and off the water; however, these interactions were almost always initiated and directed by the coach. This

ultimately resulted in conversations lacking the collaboration and mutual engagement that was apparent in those involving MAs.

Coaching within the Situation: Facilitating Learning on the Basis of the Athletes' Self-Concept within the Group

Findings in the following section describe how the athletes in each age cohort perceived their coach's strategies for encouraging aspects of *self-direction* and *readying them* for training situations. These components were associated largely with notions relating to the athletes' *self-concept* and maturity and touched upon several themes: opportunities for authentic self-direction; using upcoming training schedules to facilitate aspects of self-directedness; MAs' valuing of reciprocal commitment and loyalty; youth's trusting of their coach's decisions; and approaches to shape aspects of youth's immature behaviour.

Both the MAs and youth athletes spoke of being self-directed at times in training. However, the MAs described being afforded more explicit *self-directed opportunities* from the coach and greater latitude to be self-directed. For example, MA4 explained how they could schedule their own training beyond club hours without coach direction:

> We'll practice outside of practice [time], because we can. Kids can't come down and just take a boat and decide two kids are gonna go out and paddle. My training partner can e-mail me on a Wednesday afternoon and say, 'Hey, you got some time at 3:30? Let's go do a K2 [paddle]'. You find somebody that's got a time schedule that fits yours that you can get out on the water with once in a while.

On the other hand, youth described training situations within which their self-direction was less absolute. Although the coach provided them with opportunities to carry through with things on their own, they also acknowledged that they were still working under her observant guidance.

Moreover, the youth explained how the coach's keen monitoring limited and constrained the authenticity of their self-directedness:

> Y5: I like how sometimes she's not focusing on us because even when she is looking at us, we're like, 'Oh, there's so many people'. Because it sometimes kind of freaks me out when I know she's just staring. Y1: Yeah, you kind of have to mentally paddle correctly. Y3: Sometimes you kinda look over and see if she's watching you.

Thus, the youth appeared to lack true self-direction because they felt they were in situations where they were being consistently monitored. Comparatively, MA3 explained how their coach gave them the opportunity to decide during the practice session to either engage in the practice as written or to paddle "recreationally" on their own, exempt from the coach's eye. The sometimes laissez-faire approval MAs received from the coach to choose when and how they wished to train was a stark comparison to the strict, seemingly non-negotiable demands the coach held toward youth's training. She appeared to exercise a higher degree of control over the youth group, dictating each training session and directing its progression.

The coach provided both the MA and youth cohorts with their *respective training schedules in advance as a method of readying them for upcoming training*, typically by e-mail days before the start of each training week. Although the coach gave the schedule to both age cohorts in advance and both found it useful, the purpose for giving the schedule was different and was received differently by each of the cohorts. MA3 explained how some of the less-committed MAs turned to the schedule to purposely avoid strenuous practices, saying, "I think the mentality of Masters paddlers is [that] people are here for different reasons. And so, it is typical that if practice is going to be really tough, there's less people showing up than if it was

easy." Alternatively, some MAs described how other more serious-minded MAs used the advance schedule to train independently:

> MA3: Unfortunately, with my life, it just depends on my work schedule. If I can't make practice, because practice is e-mailed out, I try to come down and do practice when I can get here and the club's open. MA6: Which is a nice thing because I don't think anybody feels like they're letting anybody down by not being here for a practice.

These more serious-minded MAs used the schedule to exercise an aspect of self-directedness in choosing when to train. They understood that their non-sport obligations could constrain their capability to complete prescribed training, but felt that the coach respected their autonomous decisions to fit in their training when they could around other obligations. Due to the less rigid expectations that the coach held for their attendance at all coach-supervised practices, MAs often worked their training in on their own time without the coach monitoring them.

For the youth athletes, the coach disseminated the schedule in advance to help them prepare:

> Interviewer: So what do you like the most about having a schedule? Y1: Mentally preparing. Interviewer: And physically I guess as well? Collective: Yeah. Y4: When it comes to school, to know [if] it can be a long practice, to get our homework done, or anything like that.

The youth saw their attendance at coach-supervised training sessions as mandatory and thus looked to the schedule to better organize their time for other tasks, such as school and additional extracurricular activities, in order to ensure attendance at their coach-supervised practices.

Generally, the coach facilitated various learning situations and adopted approaches for readying athletes to train that were perceived in unique ways by MAs and youth athletes. This unique approach appeared to relate to notions of self-concept and maturity. MAs described how,

when they saw their coach as committed to their program and to the delivery of structured workouts, they were eager to *reciprocate with the same commitment* to their practice. As mature adults who had experienced similar roles of authority in other professional life domains, they recognized the importance of responding in ways that demonstrated mutual respect toward their coach. MA3 explained:

> My mentality if I don't feel like getting out of bed [is that] we're all adults who've been in a workforce where we've been let down and we understand that, 'Hey, the coach is committing to be there for us and we need to show up and show them that we respect the fact that there's a program running'.

Furthermore, the MAs' comments suggested that when the coach showed commitment to the program and took steps to demonstrate loyalty to her adult athletes, this validated and legitimized their roles as mature athletes. MA5 asserted:

> Commitment from the coach is huge; that sense of commitment that they have to the program. We know that if the coach is not gonna be here, you know there's always a good reason, and they have made arrangements for someone else to be here; that they've taken it to that level. That's huge. That builds the program. Consistency and commitment from the coach is probably the biggest asset we would have for a successful program.

Comparatively, the youth athletes' comments in relation to various coaching situations appeared synonymous with a less mature self-concept. Because the coach exhibited the demeanor that she knew best, the athletes blindly committed to the coach and program and believed that following various coach-directed training prescriptions would benefit them in the long-term. The youth athletes discussed their tendency to *accept the coach's program without questioning* or making suggestions:

> Y3: Sometimes she's (the coach is) like, 'Don't suggest anything cause you're not gonna get it'. Y4: It depends what you're suggesting. Y5: Yeah, if you're suggesting like soccer instead of a run. Y3: Or like, crew boats, she says, 'Don't ask what crew you're gonna be in'. She has a plan for us all. Y1: She knows what's best. Y2: We don't normally ask, we usually just trust them (coaches).

As such, the youth's blind trust in the coach's direction indicated that forces driving their training were less representative of a mature self-concept.

There were other scenarios where youth commented on the coach having adopted strategies for *shaping aspects of their behaviour* at practice, which were absent among MAs, and which represented approaches targeted to a cohort with an immature self-concept. For example, the youth described her efforts to get them to focus prior to on-water pieces, and her efforts to discourage inattentive behaviours. Y3 explained, "She'll say, 'The only thing I want to hear you guys talk about when you're on the water is how to improve and I can tell that's not what you're talking about right now." Other youth athletes added:

> Y1: [She teaches us to] just act professional, don't fool around. Y2: [She] kind of points out these older (experienced/professional) athletes too, and she's like, 'Look what they're doing and try and replicate that'. Y3: She says, 'Pretend you're at a regatta; you wouldn't goof off at a regatta so why would you here?'

While encouraging the young athletes to behave respectfully at training, the coach also made an effort to teach them broader life skills that could be practiced beyond the sport:

> Y2: She teaches us a lot of stuff. She teaches us respect and time management and just how to act. Y1: Respect's a big thing she tries to teach us, and posture. Y2: Like I find this sport's a lot more than just paddling. It's a lot more about how you present yourself.

The coach's efforts to train the youth to carry themselves respectfully in training and competition were not a focus with the MAs. The roles she assumed with each of the two cohorts in this regard were very different, and required her to coach and prompt the youth in unique ways.

In sum, the MAs' *mature self-concept* enabled them to reciprocally value their coach's loyalty and commitment to their training, was associated with the coach granting them liberty to *self-direct* training far more than youth, and meant that they could use the coach's training schedule to plan their attendance with some autonomy. The less mature self-concept of youth impelled them to trust the coach's decisions both with regard to their training and the regulation of their behaviour, was associated with less latitude and discretion to self-direct training, and meant that they became accustomed to control from the coach.

Coaching within the Climate: Norms, Goals, and Expectations for Learning

The following section describes the athletes' perspectives regarding the coach's approaches for facilitating broader elements of the training environment. The establishment of the climate includes athletes' comments on reasons and motives for learning, which partly result from the coach's approaches over time, and which also have a bearing on those coaching approaches. Moreover, how the coach repeatedly expresses goals and expectations held for each age cohort influences the climate. We specifically note several key themes regarding coaching within the climate: heightening competitive preparedness; valuing learning for learning's sake; emphasizing social comparison and intra-team competition among the youth; and emphasizing social affiliation and support among the MAs.

The coach often helped the youth athletes identify ways to enhance their *preparedness for competition*. Because she did this in a variety of circumstances, the youth largely began to understand the repertoire of skills needed to attain prospective success in competitive events. Y7

explained how the coach used competitive models to motivate the athletes to use similar preparation strategies by stating, "Sometimes she'll pull up a video of someone from Worlds or the Olympics or something and just kind of show you what she means."

The coach also used the youth's results and performance in competition as a platform from which to develop the focus and energy of subsequent practice sessions. Interestingly, how the coach addressed issues for competitive preparedness was completely absent in discussions with MAs. They instead equated their *learning as being a lifelong pursuit* within which they derived meaning and value for training. MA3 commented:

> I think one of the greatest life lessons is we still have the ability to learn; we're not done learning yet. When we come out here and they coach us and we attain those things that they're asking us to work on, it's a testament to the fact that we're not done learning yet. So if there's a lesson out of it is we all still have lots left to learn, and we still have lots left to accomplish.

The coach did not emphasize competitive preparedness among MAs, and in a complementary fashion, she appeared to identify the MA group with social affiliation discourses. In describing the training climate created by the coach, the athletes often emphasized developing friendships, but also notions of fitness and recreation. Although some MAs considered themselves as competitive individuals, they noted that the coach did not really fixate current learning with projections for future competitive performance. Rather, she helped them to identify and value their active engagement in the learning process.

For youth, the coach consistently orchestrated learning situations in ways that emphasized *competitive norms* and *social comparison*, by encouraging intra-team competition and evaluation as a method for motivating the young athletes to perform well. The athletes'

comments suggested that such expectations and norms permeated the training climate. For example, Y2 stated:

> I mean, it definitely pushes me to get faster, competing against people in my age group. But there are times, closer to regattas, where it starts to freak me out because I know going into [it] that, I'm like, 'Oh, they're in my heat, I'm gonna lose', and stuff like that. So definitely it helps [that she gets us to compare ourselves to others], but then at a certain point it starts to get [stressful].

Therefore, the youth appeared to internalize these norms and incorporated it into their daily training mentality. Y1 explained:

> It's nice to not see the person [between competitions] and then compete against them and see, 'I fell behind compared to his training, I need to bring it up' or, 'I improved from my last training because [I improved my standings on these races].

However, among the MAs, the coach focused on instilling notions of *social affiliation* as opposed to comparison. She made efforts to promote *peer support* in an encouraging environment. The athletes explained how fun, fitness, and comradery were highly valued elements of their training climate. Beyond supporting one another, the MAs also valued receiving positive supportive feedback from the coach to reinforce their efforts. MA5 asserted:

> We all take that positive feedback. That might have been the one praise to (name of athlete), that'll be the one good thing she takes from [the practice]. And sometimes we give it to each other, because I was like, 'Good practice, (name of athlete)'. But we're all looking for it, and I think coaches have to remember that."

On the other hand, the youth acknowledged that the coach's encouragement was often paired with very highly competitive expectations, ones they sometimes deemed unrealistic. Y3 said:

> Sometimes she encourages you too much. She's like, 'Ok, a good time for this is like 2 minutes for a 15 year old girl'. I'm like, 'Ok, no one here is gonna do that.' Then it just kinda takes the good away from everything.

These highly competitive expectations the coach espoused for youth brought higher demands regarding their training. However, some youth athletes used those expectations to give purpose to the taxing workouts:

> Y2: She has really high expectations but I like that, cause then you just try harder to reach those. Y7: We train all year round, eight times a week. Like, she has high expectations for us.

Consequently, the youth perceived the competitive climate and expectations for prospective successes often as motivating, though sometimes daunting.

Overall, there appeared to exist a rather clear relationship between the athletes' motives for learning, the expectations and norms the coach held for each of the age cohorts, and the subsequent learning situations she facilitated. For MAs, she appeared to de-emphasize approaches commensurate with competitive expectations or norms when establishing their training, which was reflected in MAs' descriptions of a climate focused on participative discourses and lifelong learning. She focused on instilling notions of social affiliation and peer support, and helped the MAs realize the value in their learning process. Comparatively, the training climate for youth was much different. The coach frequently set up learning situations that accentuated social comparison and used intra-team competition as a method to prepare the athletes for future events. Such approaches were associated with youth athletes' descriptions of the climate as being competitively-oriented, and a context where both past successes and future competitive events were referenced to bring meaning to their training efforts.

Discussion

In this section, we discuss key results to illustrate how the coach's approaches to facilitating learning situations between the MA and youth cohorts were either the same or how they diverged within each of the three higher-order categories (i.e., when coaching the individual, coaching situations related to the athletes' self-concept, and coaching within the broader training climate). We discuss these findings in relation to 'traditional' pedagogical or 'contemporary' andragogical methods of teaching, as well as in relation to emerging sport coaching research and literature pertaining to adult sportspersons.

With respect to coaching individuals, the coach used collaborative, two-way conversations to engage the MAs and disseminated information in ways that each individual could easily interpret. With youth, she exercised a more authoritative, one-way communication style, which hindered the athletes' ability to seek clarification. Questioning approaches differed between the two age cohorts. Whereas the coach actively approached the youth with questions, the MAs more frequently initiated conversations with her, and willingly asked her questions in these situations. As a result, her exchanges of feedback with MAs appeared less coach-directed and less formal in nature. Her exchanges with MAs related to a key feature of an andragogical style where the educator provides room for the learner to secure control and ownership of their learning and address it as they choose (Knowles et al., 2012). With youth, the coach's approaches were neither squarely andragogical nor pedagogical. Her attempt to engage the athletes more meaningfully by directing questions to them in learning situations reflected an athlete-centred focus (Kidman, 2005; Kihl, Kikulis, & Thibault, 2007) and an andragogical orientation (Knowles et al., 2012). However, her tendency to be the one to initiate and direct the content of conversations limited the bi-directionality of communication. Thus, exchanges

between the coach and youth were more predominantly teacher-directed, more characteristic of linear transmission styles in sport coaching (Cassidy et al., 2009; Ford et al., 2010; Jones, 2007), as well as the traditional pedagogical orientations that have prevailed in physical education teaching (Siedentop & Tannehill, 2001). Moreover, the coach often delivered instruction to the youth by presenting a lot of information up front, to the point where youth expected that they should not ask questions. Such a delivery style, whereby an instructor presents a wealth of initial information to forestall learners' questions, is antithetical to an andragogical approach (Henschke, 2014), fosters learner anxiousness, and can lead to poor retention and skill transfer in comparison to situations where instruction and feedback is provided somewhat less frequently (Ford et al., 2010).

Our results showed that the coach facilitated the delivery and exchange of knowledgeable, technical information with both youth and MAs, and that both cohorts found this instrumental to their training. They appreciated having their coach provide distinct directives during training pieces and clarify proper technical approaches, because these exchanges satisfied aspects of their 'need to know' as learners (Knowles et al., 2012). Specifically, the coach's exchanges seemed to address learners' desire to understand what was to be learned and how to properly go about learning it; as such, both cohorts seemed to similarly receive information regarding the 'what' and 'how' aspects of their learning (Knowles et al., 2012). The nature of exchanges differed between cohorts, however, in relation either to 'why' engaging in certain learning situations was important, and the degree to which athletes were provided initiative to engage with the coach in two-way exchanges. Specifically, the MAs more often asked questions for clarification of the utility, the purpose (i.e., the 'why'), or the benefits of the content before partaking in the prescribed exercises, and also felt more comfortable engaging the coach in

establishing genuine collaborative exchanges surrounding their learning. This fully corresponds to Knowles et al.'s (2012) core 'need to know' andragogical principle, which suggests that educators may benefit their learners by presenting justification and rationale for the things they ask them to learn, and establishing candid interaction with them.

Our results suggest that the coach may have realized the benefit of using learner-centred techniques with youth but still exercised a more coach-directed approach to conspicuously maintain control over their training. The coach may have defaulted to following the traditional, coach-directed pedagogies that dominate youth sport. Fox (2006) discussed the significance of maintaining coaching 'control' in the sport context. Control refers to coaches' ability to influence and direct the behaviour and performance of their athletes and is considered important to make athletes implement changes in ways coaches want (Fox, 2006). Fox's frequent referencing of coaching control in relation to youth populations suggests that these cohorts are subjected to a controlled standard. Results from the present study affirm this, as youth athletes' comments demonstrated how their coach frequently used means to establish coaching control. The current findings also showed, however, that such measures to establish coaching control were almost non-existent based on MAs' comments about their experiences with the same coach. In the current study, the coach's use of repeated instruction and her restraint in establishing bi-directional conversations with youth might have maintained a certain power structure within training situations with youth (Cushion & Jones, 2001), which she did not establish with MAs. Whereas young athletes may lack the experience and emotional regulation to make decisions and direct their own training (Fox, 2006), MAs may already be well-primed to perform better in situations where coaches engage them collaboratively in learner-oriented interactions (i.e., in more andragogical ways).

The current study also elicited themes on how the coach facilitated various training scenarios while considering the self-concept and maturity of the learners. The coach afforded the MAs various ways to employ self-direction, predicated on the maturity they exemplified, according to the andragogical tenet that adult learners hold a self-concept as being capable and deserving of self-direction and autonomy (Knowles et al., 2012). The coach's approach with youth, contrarily, was more structured with less authentic self-directed opportunities. Our results showed instances where young athletes deferred to coach control or more assertive coach-directed approaches, likely because of their less-matured self-concept. Thus, youth conformed to the norm in traditional pedagogy, where the learner is dependent on the instructor (Knowles et al., 2012). In sport, Fox (2006) discussed how coach control could be justified because younger athletes lack judgment and experience to make appropriate decisions regarding their training. The youth athletes in the study recognized that the coach made decisions for them without their input, but appeared to become accustomed to this approach by remarking that the coach knew what was best for them and their development. Although the coach's discretion was not always in line with his or her own preferences, the athletes gave way to the coach's authority and trusted her decisions as being undeniably sound, and in doing so, deferred opportunities for genuine self-directedness.

The MAs noted that the coach used more explicitly collaborative approaches and gave more latitude for self-directedness in a manner that considered aspects of their self-concept. In line with their maturity, MAs believed the coach facilitated autonomous decision-making opportunities, especially by delivering upcoming training schedules that they could use to decide if and when to train. These strategies heighten athletes' awareness of their ability to plan and direct their own training efforts, thereby reflecting contemporary, andragogical (Knowles et al.,

2012) teaching styles. These findings align with some of Young, Callary and Niedre's (2014) speculations for how sport programmers and coaches could optimize MAs' limited time for sport, including strategies such as planning practices in anticipation of adults' other personal obligations, coaching them to strategically decide when and how to train on their own time, and exploring various social media tools to enhance coach-athlete exchanges.

The coach's demonstration of loyal commitment appeared to be a form of social support (Rathwell et al., 2015) that the MAs often mentioned. Seeing and recognizing a coach who is wholly invested in their sport program helps to legitimize their own commitment to devote their leisure time to the sport. In a sense, the coach's overall demonstration of commitment may provide a unique type of validation support (Wills & Shinar, 2000) for adult sportspersons, whereby athletes feel that their own commitment is understood by the coach because the coach matches it with their own. Due to their mature self-concept, MAs felt that they should reciprocate the same respect and commitment. In a study of adult competitive swimmers' preferences in the coached context of Masters sport, Rathwell et al. (2015) discussed how MAs sought to please their coach by reciprocating the same effort they acknowledged receiving from the coach.

Finally, the current investigation uncovered themes of how the athletes perceived their coach's facilitation of the training climate, particularly with respect to norms, goals, and expectations for learning. In the methodological steps we took to transition from deductive (i.e., focused on the key inner-ring principles of the APM) to inductive analysis, it became apparent to us that the athletes' interpretations of their goals and purposes for learning, whether competitive or less competitive, coincided with the APM's outer ring elements. Much of what we have discussed with regard to notions of the training climate and other broader contextual variables is

very much related to the athletes' goals and purposes for learning. Thus, we distinctly recognize how the athletes' interpretations of their coach's approaches in the broader climate fit with those outer-ring elements of the APM.

Although some MAs in the study considered themselves as competitive individuals, they spoke of participation discourses and the coach's focus on enhancing social affiliation through peer encouragement and support. They spoke of learning for the sake of learning, and valued their engagement in the sport despite their age. MAs' perspectives regarding their motives for learning reflected Knowles et al.'s (2012) andragogical principle that adults' motivation is largely derived from intrinsic means and that they seek inherent value and enjoyment in the learning process.

Moreover, although competitively minded MAs exist (Young & Medic, 2011b), comments in our study revealed that the coached training climate for MAs was focused largely around participative discourses such as social affiliation and fitness. In this regard, the coach made sure to praise the MAs' efforts and facilitated an encouraging training environment, which the adult athletes remarked as being influential to their sport enjoyment. These results resonate with previous research highlighting the social orientation of Masters sport (e.g., Young, 2011) where peer connections help to foster feelings of belongingness and relatedness (Rathwell et al., 2015). For example, Kowal and Fortier (2000) found that when the training atmosphere for Masters swimmers is less competitive, opportunities for social connectedness play a more prominent role, and mediate increased perceptions of self-determined motivation.

Alternatively, the youth spoke of the ways that the coach facilitated a climate that emphasized social comparison and competitive situations. Thus, they predominantly valued extrinsic rewards associated with their sport participation, and sought to consistently project their

training efforts toward prospective competitive events. This is likened to traditional pedagogical approaches, where the utility of learning is judged by advances in standing or fulfillment of standardized requirements (Knowles et al., 2012). In video analysis sessions, the coach appeared to assume that all youth athletes' learning would benefit should she critique each athlete in front of the group. However, Treasure and Roberts (1995) note that this approach invites norms around social comparison and intra-team competition that can foster high ego-orientations. Treasure and Roberts cautioned against using such an approach because it can be risky, particularly for individuals who may be less competent or who may be experiencing challenges or miscues in a learning environment. In these situations, social comparison is not motivating but instead can lead to learner anxiety. Accordingly, there was some evidence in the current results that overt social comparison was intimidating at times to some youth.

Generally, it appeared that the coach held the younger athletes' training to a higher degree of seriousness and she tailored her approaches on the basis that all youth sought competitive goals. The youth presumed she was confident that her expectations were appropriate for all athletes in the group and that she applied approaches for competitive preparedness and social comparison similarly. MAs did not discuss this approach and so we deduce that the coach refrained from organizing MAs' training climate in a similar competitive manner perhaps because she recognized that not all adult athletes could thrive, nor would appreciate working in such a serious-minded environment. Instead, her approaches allowed for the possibility that many MAs sought different outcomes from their learning in keeping with the idea that the coached Masters sport context should accommodate heterogeneous participatory motives (Young et al., 2014; Young & Medic, 2011a).

One possible interpretation of the current findings is that MAs were intrinsically motivated to learn from their coach and the coach was compelled to curtail competitive and social comparisons in response to the adults. Alternatively, another plausible interpretation is that, through working with the coach and being exposed to her encouraging, supportive, and athlete-centred climate over time, the MAs became more intrinsically motivated, and came to better appreciate the inherent value of their learning above extrinsic reward. The training climate offered by the coach may have invited MAs to value learning scenarios where they had the ability and capacity to learn novel things, linking to the ownership of their decision to participate (Rathwell et al., 2015) and being driven by their inherent enjoyment or interest in the activity (Dionigi, Baker, & Horton, 2011). In the current study, our focus has been to present interpretations that stem from the coach's actions, however we recognize the bi-directionality and symbiosis between coach and athlete in the creation of a training climate. The current qualitative findings provide greater richness to illustrate how particular aspects in the establishment of the climate (e.g., valuing learning for learning's sake, social affiliation rather than comparison) may be particularly related to the intrinsic motivation of MAs.

Limitations & Conclusion

We note several limitations within the study. The single coach was chosen based on certain criteria that would demonstrate that she was an effective coach. However, based on athletes' data, we could only analyze and interpret the nature of a coach's approaches and not necessarily whether such approaches positively facilitated athletes' learning and specific developmental outcomes. Secondly, despite the merits of an instrumental case study approach, we recognize that there exist obvious limits in being able to generalize these findings beyond the study's one coach, one Eastern Canadian club, and one sport. As such, we acknowledge that

replication would be a useful endeavor to assess whether our findings populate with other coaches in different sports. Finally, we note another limitation in that results are based upon the perceptions of the athletes alone, and not the articulated intentions and rationale for the use of the approaches by the coach.

While the coach's approaches with MAs appeared more andragogical in nature and her approaches with youth more pedagogical, we advocate that these approaches be viewed on a continuum with one end representing complete teacher-direction (i.e., more pedagogical) and the other representing complete self-direction (i.e., more andragogical). For example, we acknowledge that the coach did use contemporary styles with the youth, yet still recognize that these approaches looked much different than those applied to MAs' training. Thus, we challenge what a contemporary coaching approach looks like when comparing youth and MA cohorts. Our findings particularly suggest that MAs' perspectives of their coach's approaches are further along the continuum toward andragogy, and we thereby conclude that there is value to understanding andragogy as part of contemporary approaches when coaching MAs. Although the youth also described some coaching approaches that were andragogical in nature (e.g., the coach's affordance of self-directedness and problem solving opportunities), these approaches were mixed with some degree of coach control, perhaps due to youth's immature self-concept and behaviour. As such, we deduce from our findings that a larger contemporary, athlete-centred, andragogical orientation to coaching may be considered effective with MAs, and that youth are likely situated towards the middle of the continuum given the mix of traditional pedagogical and contemporary andragogical coaching approaches that they described.

While findings in the current study spoke to notions of andragogy, this manuscript has also uncovered that using the model as a deductive framework may be constraining to the

interpretation of broad storylines that relate to coaching practices. By electing for an inductive interpretation, we were able to acknowledge overlap across the inner-ring principles of the APM, and allow for interpretations that considered outer-ring aspects of the APM; this seemed to better suit the data. Thus, we stress how important our recognition of synergies and convergences across principles was to our understanding of specific nuances in the athletes' perceptions.

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CHAPTER 3: DISCUSSION

This investigation sought to determine one coach's approaches to facilitating learning situations for Masters and youth athletic cohorts. Perspectives from both the coach (Manuscript 1) and athletes from each of the two age cohorts (Manuscript 2) were used to attain a holistic interpretation of how these approaches manifested in training situations comparatively between the two groups. We used the Andragogy in Practice Model (APM; Knowles et al., 2012; Appendix A) as a conceptual framework to guide interview questions and frame subsequent results in both studies. We sought to explore whether and how the model could frame potential coaching nuances in facilitating sport learning situations and to further determine if andragogical principles were applicable for either or both of the two sporting cohorts.

In the following chapter, we begin by providing a summary of each of the two empirical studies, highlighting their key findings and implications. Second, based on our results, we comment on the relevance of the APM within a motor learning sport domain, by describing conceptual and coaching considerations in this regard. We then outline limitations and future research directions that might build upon the current investigation, and conclude by describing the study's overall practical implications.

Summary of Manuscripts

Manuscript 1 sought to understand, through the perspectives of a coach, her approaches to facilitate learning with her Masters and youth athletes. Specifically, we were interested in understanding if and how each of the six core andragogical principles (Knowles et al., 2012) were evidenced in the approaches she took with each cohort, and whether the principles manifested similarly or differently between them. Findings showed that notions of each of the six principles were woven into the coach's descriptions of her approaches with each group, despite

nuances in how those principles were applied. With MAs, the coach described facilitating learning situations in ways that were more closely aligned with andragogical approaches. For example, she spoke of responding to the MAs' inquisitive nature and of their ability to autonomously plan aspects of their training sessions. With the youth athletes, the coach described her use of strategies that were less andragogical in nature, which we likened to methods of traditional pedagogy as defined by Knowles and colleagues (2012). For example, the coach recognized that the youth were often incapable of fully self-directing without her guidance, and she chose to linearly provide information to those athletes without an explicit prompt for such. Despite the emphasis of andragogy with MAs and pedagogy with youth, we refrained from interpreting these results as a strict dichotomy, as notions of both styles were still evident to some degree with each of the two cohorts. We concluded that the coach in our instrumental case study used approaches representing opposite ends on a continuum from full pedagogical approaches to full andragogical approaches, while frequently employing strategies representing a mix of both in between.

Manuscript 2 investigated both the Masters' and youth athletes' perspectives of their coach's approaches. Similar to Manuscript 1, we focused on comparatively examining how athletes' comments revealed differences in coaching approaches between the two cohorts. Instead of deductively analyzing how approaches aligned with respect to each of the andragogical principles, we instead turned to an inductive approach for analysis. Results indicated perceptions of athlete-centredness and self-direction, which are important aspects of andragogy, but also themes that illustrated outer-ring intricacies of the APM that may not have been captured in a strictly deductive analysis. In particular, findings depicted how the coach's approaches were dependent on the situations within which the athletes trained, and the goals,

expectations and norms that permeated their training climate. Albeit from the athletes' perspectives, findings from Manuscript 2 largely coincided with key findings from Manuscript 1, in that the coach predominantly used approaches with MAs that respected andragogical tenets, while more frequently exercising higher degrees of traditional, coach-directed or coach-controlling pedagogical approaches with youth.

To a great extent, we interpreted the athletes' perspectives on how they were being coached in relation to what they considered to be their self-concept as learners, either with respect to their roles as individual athletes or the behaviours they projected for their cohort as a whole. The MAs recognized that their coach respected their maturity and therefore offered greater collaborative approaches in sport learning situations. The youth, contrarily, spoke in ways that inferred less collaboration and, instead, they often deferred to the coach's directed or authoritative guidance. Despite such contrasts, similar to Manuscript 1, both cohorts described instances that included aspects of both andragogical and pedagogical coaching approaches. These results indicate, at least in our case study, that andragogy in practice in the sport domain is a flexible framework that is not exclusive to adult athletes.

Assessing the Andragogy in Practice Model in Sport Coaching

We set out to explore the APM in an area beyond which it was developed and modified. Shifting from the education domain to sport, we leaned on the similarities drawn between the art of teaching students and coaching athletes (Gilbert, 2002) to investigate the model's potential as a guiding conceptual framework within sport coaching. Our primary intent was to provide the first empirical study assessing whether adult and youth athletes are coached similarly, differently, or in nuanced ways with reference to the model. Although there is one non-published work (Morris-Eyton, 2008) and recent speculation by Callary et al. (2015) on the applicability of

andragogy to sport coaching, this investigation further and more explicitly explored the potential utility of the APM within the sport domain. In essence, this thesis was an attempt to explore how the model looked within a case study in sport, and the results afford a preliminary discussion of whether sport-related intricacies and adaptations to the model might be considered going forward.

The present findings have meaning for how one might conceptualize andragogical principles in the practice of coaching sport. Based on our instrumental case study, results suggest that the APM may require slight modifications to some principles' operational definitions to better capture nuances that are specific to the art of teaching/coaching in a motoric or sport domain. Specifically, we noted that intricacies exclusive to sport might be added to the definitions in order to make them more relevant for coaches. For example, in Manuscript 1, the coach failed to consider any of the athletes' *prior experiences* except those derived from sport or related motoric areas. Consequently, although many athletes (MAs especially) may have carried vast and rich experiences from non-sport areas that could have benefitted current learning, the coach's reluctance to consider those as useful reservoirs limited the coach and athletes' collaboration on deepening learning by using those experiences. Thus, we propose that this operational definition when applied to sport should include a consideration of motoric experiences to complement those derived from other life domains. Another example is in considering the notion of learners' *readiness to learn*, as described in Manuscript 1. In education, Knowles et al. (2012) suggest that adults become ready and orient themselves to engage in learning in response to a specific life situation. However, how the coach in our study saw athletes as "ready to learn" appeared to equate either with the athletes' steadfast time commitment to training (evident largely amongst youth) or their respect for the coach's role and ability to focus

on and readily take advice from her (evident largely amongst MAs). Taken together, the findings from our case study suggest that coaches might interpret athletes' commitment and coachability as nuances for interpreting athletes' readiness to learn. Thus, these sporting nuances could be considered as a complement to the andragogical principles' operational definitions moving forward when assessing coaching practice.

Findings in the current thesis shed light on the pervasive influence of the APM's outer-ring elements on the application of andragogical principles in sport coaching. We submit that the outer-ring's "goals and purposes" may not be sufficient to understand our findings. For example, in Manuscript 2, the athletes described different expectations and norms (beyond simply the goals and purposes for learning) for each cohort that permeated their training climate. The coach engaged in strategies to consistently project youth's training efforts toward competitive markers; whether they be personally-set goals, intra-team contests, or upcoming provincial/national level events. Because the youth were held to high standards of performance, they described how the coach facilitated approaches with them that capitalized on notions of control, structure, and lofty competitive expectations. Therefore, her approaches were characterized as being highly directed in order to instill such competitive values and expectations within the youth's training climate. Contrarily, our findings suggest that this type of extrinsic, competitive climate was not as evident with the MAs. Instead, the coach adopted approaches that Ollis and Sproule (2007) described as contemporary or constructivist in nature; she allowed MAs to garner ownership of their learning through autonomy, encouraged decision-making in both the planning and execution of training procedures, and held a less stringent directive role in their learning environment. Constructivist learning theories used in sport hold that athletes require freedom to develop and ask their own questions, the ability to create new knowledge through the disturbance of preconceptions or

existing experiences, encouragement to engage fully and reflect critically in learning situations, opportunities to learn collaboratively with others, and autonomy to make decisions and discover solutions as they develop expertise (Morgan & Sproule, 2013). Because principles of constructivist approaches in sport closely parallel those of andragogy, it helps us make the case for the APM's relevance in explaining coaching approaches that diverge from traditional pedagogical ones.

While constructivist approaches appear to mirror how the coach in our study attempted to facilitate MAs' learning, we question the utility of fully adopting such approaches (including a purely andragogical approach) in the youth sport system given that highly coach-directed, linear pedagogies have become engrained as the norm by coaches, parents, and even the athletes themselves (Cassidy, Jones, & Potrac, 2009). We question whether individuals involved in youth sport would be ready and comfortable with having coaches step back and allow young athletes to orient their own learning, self-direct, and take control of certain training tasks. Because the current study was exploratory and descriptive, we cannot discern which coaching approach was more effective for the athletes' learning, but simply suggest that each had utility and was highly governed by each cohort's respective training climate.

The use of a deductive and inductive analytic approach in consecutive manuscripts revealed the overlapping nature of the APM's six andragogical principles. Whereas we deductively analyzed the coach's data based on their fit with the six andragogical principles in Manuscript 1, we observed constraints when attempting to do the same in Manuscript 2. Specifically, we could not cleanly place athletes' quotes into a discrete principle of the APM because of overlap of findings or interactions across each of the six principles. Thus, we opted to employ an inductive approach to more flexibly explain our results. Interestingly, this analytical

style resulted in themes based on the athletes' perspectives that still closely paralleled peripheral ring aspects of the APM; specifically, these data addressed individual learner differences, situational or subject-matter differences, and the goals and purposes for learning (Knowles et al., 2012) that were a part of the larger training climate. Our use of an inductive approach to understand facets of andragogy shares some features with methods used in unpublished work by Morris-Eyton (2008). In her study of coached Masters swimmers, Morris-Eyton also opted to develop coded themes on the basis of pool-deck observation as opposed to referring to the various deductive aspects of the andragogical model. Taken together, findings from the current thesis, like Morris-Eyton's findings, confirm Knowles et al.'s (2012) assertion that the principles need not be interpreted as mutually exclusive entities when applied to practice.

Differences in Coaching Approaches Based on Age Cohort

The core purpose of this study was to understand how coaching approaches compared between the two age cohorts of athletes. Particularly, we sought to discern whether these groups were coached similarly, differently, or similarly but in nuanced ways. Our study's general findings suggest that the two groups were indeed coached quite differently; the coach maintained a more stringent, directive focus with the youth that paralleled traditional pedagogical approaches, while she offered opportunities for MAs to direct aspects of their own learning through self-direction and problem solving (i.e., andragogical/constructivist in nature). We deemed these approaches effective given both the coach and athletes' recognition of such, and acknowledged that the athletes' age was a major determinant of differences between cohorts. For example, the coach acknowledged awkwardness if she did not provide MAs room to make decisions or have their voices heard in training (largely predicated on their mature self-concept), and the MAs similarly interpreted their autonomy as rewarding. In contrast, the coach identified

youth as being immature in specific areas of training, which fostered her reluctance to leave them to self-direct without being monitored. Likewise, these young athletes spoke of the importance of having their coach reorient their behavioural focus and ready them for upcoming tasks more directly. Overall, results from the current thesis reveal clear distinctions in approaches between cohorts that both the coach and athletes felt were necessary to respond to specific learning needs.

While we deduce that age-related factors were crucial for the coach to consider when orienting her approaches to the respective age cohorts, we also acknowledge the influence of her expectations for her athletes on her approaches. Youth were expected to train seriously and embark on competitive goals, which translated to the coach being more directed in her approaches, providing little room for youth's input in decision-making, and fostering intra-team competition as a method of motivating the athletes to train hard. In contrast, because she did not expect MAs to be as serious, the coach's approaches looked far different and their climate was not instilled with such a competitive orientation. She encouraged MAs to think critically and ask questions, allowed them to make decisions regarding their training, and let them choose their level of effort in training on any specific day. Reflecting on one of the study's initial research questions (i.e., how are a coach's approaches dependent upon the individual learners, situational characteristics, and the goals and purposes for learning?), we see that much of the data within the higher-order, inductive category outlining the intricacies of the training climate are in fact related to the athletes' perceptions of their goals and purposes for learning. While using an inductive approach to understand these data, we became convinced that this analytic approach was most suited to a rich interpretation, particularly the consideration of how athletes' goals and purposes were embodied in their training climate and context. As a result, we acknowledge a link between our inductive interpretation of the data and the outer-ring elements of the APM.

Despite recognizing the differences in approaches between cohorts, we acknowledge that on the surface there existed similarities. Using the APM to interpret certain findings, we noted that some principles were evidenced with both groups but their application slightly differed. One clear example was in the coach's provision of self-directed opportunities. While she allowed MAs to make decisions regarding when and how to train, and left them to orient their training outside of club hours, the coach noted that the youth were only self-directed when she was on the water with them and overseeing their progress. Thus, while both groups were afforded opportunities to exercise self-directedness in training, the extent to which it was authentic and truly autonomous appeared to exist on a continuum from low to high degrees; youth's self-directedness existed on the lower end, whereas MAs' was higher. Further, some situations appeared similar on the surface but their purpose differed when further explored. For example, the coach sent e-mails to both cohorts describing upcoming practices. However, the coach's intent for how the athletes would use this information differed, as described by both the coach and the athletes. Youth saw the provision of the program as a means to mentally prepare for training or to manage their time in order to be ready for practices, which was corroborated by the coach as a directed approach. The MAs used this information to either train independently if they had other time commitments that prevented them from training or to decide whether or not to attend training at all (if they did not like the upcoming prescribed workout). The coach was aware of the MAs' use of this information, and e-mailed the program as a means to allow the MAs to self-direct. As such, while certain approaches appeared similar on the surface, delving further into the specific nuances of those approaches revealed clear, age-related distinctions between cohorts. Thus, although our findings suggest that andragogical principles can be applied with both MAs and youth athletes, these important age-related distinctions suggest that the

coach's approaches were very different with one cohort compared to the other, and we posit that aspects related to the athletes' age (e.g., self-concept, experience, current life situation) were important determinants of those different approaches.

Aspects extending beyond simply the age of the athlete also presented themselves as important variables. When considering nuances within the broader training climate (i.e., athletes' competitive levels, homogeneity vs. heterogeneity of competitiveness), we interpreted key distinctions in the coach's approaches. Differences in the nature of the competitive context appeared to contribute to very different expectations for both the coach and athletes. Specifically, the coach likely had higher expectations to prepare the youth athletes for success at competitive events. Because these same expectations were nonexistent with the Masters group, her approaches appeared quite different between cohorts. Consequently, we acknowledge that our discussions of age-related differences naturally embody descriptions of the broader learning context, particularly the associated expectations for competition.

Coaching Considerations

The present findings have implications for how individuals might apply aspects of andragogy to the practice of coaching sport. In this section, we provide admittedly preliminary recommendations for coaches to interpret and use the model, and comment on the relationship between andragogical and pedagogical styles in sport coaching.

The flexible application of andragogy's elements has gained increasing consideration (Knowles et al., 2012). Particularly, the APM has been conceptualized as a set of principles or assumptions that can be applied wholly or in-part depending on the individual situation (Knowles et al., 2012). Following this tact, coaches can take the responsibility to decide which principles are relevant for a particular situation and how to adapt them to facilitate learning

accordingly. Based on our individual case study, we concur with Merriam, Caffarella, and Baumgartner (2006) that andragogy should not be considered an "all or nothing" framework, but instead be regarded as one that offers elements borrowed and adapted to fit specific situations and learners. Thus, we propose that when coaches set out to apply aspects of the framework, they do so with an eye to both traditional and contemporary/constructivist approaches. Specifically, our study's findings suggest that coaches should be aware of individual athlete characteristics (e.g., their previous sport experiences, skillsets, learning needs, etc.) and characteristics of the specific learning situation (e.g., drill difficulty, opportunities for collaboration, etc.) in order to properly evaluate which type of approach to use. Knowles et al. (2012) propose that this interpretation places andragogy on a continuum: one end of high teacher-direction and support (i.e., high pedagogical orientations), and the other representing high learner self-direction and autonomy (i.e., high andragogical orientations). While the notion of a continuum suits our study's findings, we caution coaches from thinking that they must situate themselves at one specific point along this continuum. Rather, results from our study encourage coaches to use varying degrees and elements of both andragogical and pedagogical approaches, thereby choosing and modifying certain principles with their athletes depending on what they think will benefit learning in given situations. Particularly, although our results suggest that the coach opted for more andragogical approaches with MAs than with youth, we also note that this was largely predicated on the learning needs of the athletes at one particular point in season (i.e., a situational variable); for example, we would likely see more pedagogical orientations when the adults were initially introduced to the sport (Knowles et al., 2012). Choice of approach may also relate to how coaches perceive the self-concept and maturity of their cohort. The athletes' mature self-concept (i.e., an individual variable), or perceived lack thereof, influenced the extent to

which the coach involved the athletes in collaborative conversation or afforded them opportunities to self-direct. This was evident both in the ways the coach described her approaches and in the ways that the athletes perceived them. Overall, these findings align with Merriam et al.'s (2006) proposition that andragogy should be considered a situation-specific framework as opposed to one that exclusively addresses adult learning.

Limitations, Future Research, and Practical Considerations

Despite novel aspects and merits in the current study, there are some notable limitations. Because we studied the approaches of only one coach working in one sport, our findings were specific to the perspectives of one set of coaching approaches. We acknowledge the heterogeneity that likely exists among both coaches and athletes of different sport groups and abilities, and thus, we cannot generalize across a wider spectrum of coaches, nor beyond the sport of canoe/kayak. The current study is but one step in understanding if and how different coaching approaches apply for MAs and youth athletes. Nonetheless, the study allowed for an in-depth exploration of how coaching approaches might differ, not on the basis of different coaches, but on the basis of different age cohorts of athletes addressed by the same coach. Therefore, the study provides the basis for our understanding that there are specific nuances to be considered when coaching MAs and coaching youth athletes; the particularities of such differences can be further explored with additional research.

The current study was also limited because it explored and described a coach's approaches with one cohort versus another. There was no explicit probing or analyses of whether described approaches could be distinguished in terms of benefits to learning. Therefore, future research might build upon our work by empirically assessing whether athletes' learned information is transferred to skill execution over time on the basis of specific coach-facilitated

learning situations and which aspects of contemporary, andragogy-infused coaching result in more meaningful experiential outcomes for athletes. Further, because of our study's single case study design, we could not explicitly deduce whether our findings were related to the APM's fit within the sport domain or whether these findings were specific to the biases and approaches of our lone coach. Ongoing research in this area, including replication across different coaches and contexts, will help us more confidently make conclusions about the utility of andragogy in sport coaching. Additionally, despite efforts to equate time spent in training with both cohorts, the coach worked with the youth athletes more regularly than she did with MAs. Consequently, we note a potential limitation in that she may have been able to recall more explicit instances related to youth's training and the approaches she takes in those situations. Further, while we attempted to control for competitiveness in the current study, not all of the MAs sought the same competitive benefits from their training, as did most of the youth. As such, future research may benefit by comparing a more homogeneously competitive Masters group or an elite level group of adults with competitive youth in efforts to extend our understanding of the training context's influence on coaches' approaches and expectations. Finally, we consider age discrepancy between the coach and MAs a limitation in this study. Being a relatively young coach, she may have found difficulty in maintaining a strict persona over the Masters group in the same way that she did with the youth athletes, which would influence our interpretation of how she approached their learning.

Our study extends Callary et al.'s (2015) contemplations of how andragogy relates to the coached Masters sport context. Overall, the present findings suggest that coaches might need to be aware of particular nuances that can benefit learners on the basis of their age and situational characteristics. The coach explained how she coached MAs differently than youth. Even

situations that appeared similar between groups, in our analyses we derived notable differences in her approaches and intentions with each age cohort. Therefore, we acknowledge the importance in coaches being aware that there indeed exist learning differences between MAs and youth athletes.

The novelty in our case study's finding that coaching approaches differed on the basis of athletes' age serves to challenge a current assumption regarding the coaching of adult athletes. The Coaching Association of Canada (CAC, 2013) developed a resource handbook outlining biophysical considerations for coaching MAs but did not address the psychosocial aspects at play. For example, a key highlighted excerpt from this handbook reads: "What's different about coaching Masters athletes? And the answer is, probably not much." It continued, "As long as they're healthy, there's no real difference between coaching them and coaching younger athletes" (CAC, 2013, p.9). Our findings suggest that this may not be the case, albeit from a single case study perspective. Particularly, across our two empirical manuscripts, we have outlined how the coach often used traditional, coach-directed approaches with the youth and more andragogical ones with MAs that addressed their need for autonomy and learning ownership. As a result, we believe there are problems in assuring coaches that the same approaches should be used with MAs as with younger athletes, and advocate for coaching researchers and coach developers to acknowledge our results when working to inform coaches (as users of this information) of 'best practice' strategies when working with MAs.

In conclusion, our investigation has provided the first comparative analysis of coaching approaches between Masters and youth athletic cohorts. Findings allow us to conclude that a coach who leads both cohorts often uses different approaches for facilitating learning for MAs than for youth. We encourage coaches to be aware of the described nuances as they relate to their

own coaching approaches and situations in order to provide meaningful learning experiences for those athletes. Conceptually, we note the APM's utility in sport coaching, but have also reported added modifications that we feel will aid in the interpretation and inclusion of similar data relating to andragogy in practice in future research.

Our research shows that andragogy is not an enterprise exclusive for adults, and that youth too can benefit from learning in ways that align with its principles depending on the athletes' situations. Knowles et al. (2012) recently made this contention, and the present work indeed shows that it is valid with respect to sport coaching. Throughout this thesis, there were explicit attempts made not to implicate a dichotomy between andragogy and pedagogy. In fact, the current works suggest that andragogy may be considered as a concept existing under the broader umbrella of the current understanding of the term pedagogy, and that the APM may be studied as a 'means to the end' of better understanding age-related nuances in coaching practice to inform 'best practice' guidelines. Thus, we are not advocating andragogy as a new or better method of coaching, but instead as a conceptual lens through which age-related nuances are recognized.

Further, based on Knowles et al.'s (2012) notion of coach facilitation being positioned along a continuum ranging from strict coach- to self-direction, this thesis acknowledges that coaches' approaches with either age group may involve elements varying in degrees of self-direction and coach-direction. Consequently, we propose that coaches should orient their approaches on the basis of their individual athletes, the specific learning situations, and the various norms and expectations that may be pervasive in the training climate. Overall, we suggest that an awareness of andragogical tenets may open coaches' eyes to the unique characteristics of Masters athletes and the nuances existing between age cohorts; indeed this may

be the greatest value of the APM, to better understand when and how to implement certain approaches for specific age cohorts and individual athletes' learning needs.

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STATEMENT OF CONTRIBUTIONS

As the study's primary investigator, I was responsible for the conceptualization of the research project, and for the process of submitting and attaining ethical approval from the University of Ottawa's Research and Ethics Board. I was responsible for scheduling and conducting pilot interviews and observation sessions with both coaches and athletes prior to data collection. Additionally, I was tasked with communicating with the club's commodore to gain approval to collect data on site, and I subsequently organized data collection dates and procedures with the coach. I carried out the complete data collection process, and was responsible for data analysis. Finally, I was the primary author of two empirical manuscripts and one thesis document developed from these data.

My thesis co-supervisors were integral in helping to conceptualize the research project, and challenged me to refine various aspects of its design (i.e., methodological considerations). They supported my piloting efforts and offered feedback to facilitate my growth as both an interviewer and moderate participant observer in the field. They gave feedback during data analysis, and edited the two manuscripts and final thesis document.

APPENDICES

Appendix A: Andragogy in Practice Model

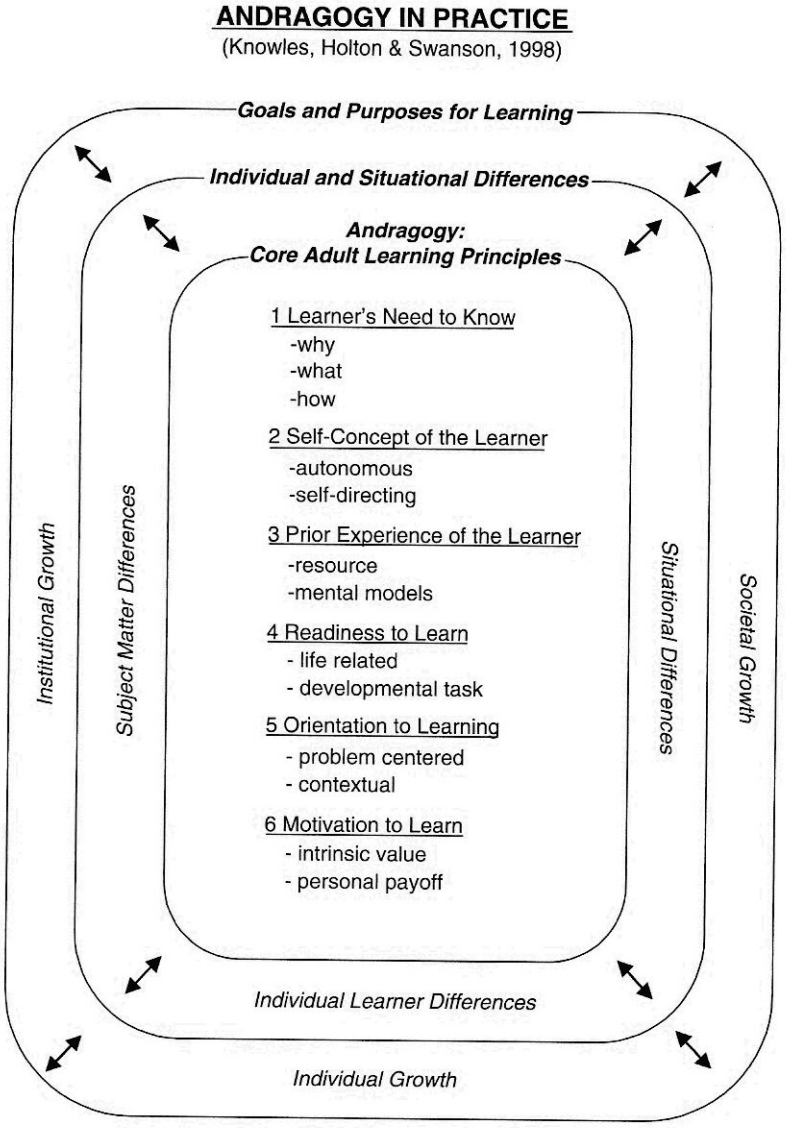


Figure 1-1. *Andragogy in practice (Knowles, Holton, and Swanson, 1998).*

Appendix B: Coach Personal Information Survey for Screening Purposes

Thank you for your interest in participating in our research study. In order to determine your appropriateness for the specific study, I have developed some minor questions for you to consider. Please take some time to respond to the following questions to the best of your capabilities.

1. Do you coach **youth, adolescent athletes** presently?
   ☐ Yes ☐ No

2. Do you coach **adult (not youth or adolescent; often regarded as Masters) athletes** presently?
   ☐ Yes ☐ No

   *If you've answered **Yes** to both (1) and (2), please **continue**.*
   *If you've answered **No** to either (1) or (2), you can **discontinue** now.*

3. What is your name? _____

Gender: ☐ Male ☐ Female

4. What is your date of birth? (DD/MM/YYYY) _____

5. Which sport do you coach primarily, and at which club? _____

6. With respect to the **sport you coach**,

   For how many years did you compete as a youth/adolescent athlete? _____
   For how many years have you competed as an adult (Masters) athlete? _____
   What is the highest level at which you competed as an athlete? _____

7. For each of the two age groups you coach, please indicate both the typical **number of athletes in each group** and the **number of years you have coached each group**.

   Adult (Masters): Number of athletes: _____ Number of years: _____
   Youth/adolescent: Number of athletes: _____ Number of years: _____

8. With respect to **coaching adult (Masters) athletes**:

   How many months per year do you coach, and which months are these?
   _____

   During those months, how many **times per week** do you coach? _____

   During those months, how many **hours per week** do you coach? _____

   How many competitive **adult (Masters) sporting events** have you attended as a coach during the **past 12 months**? _____

9. With respect to **coaching youth/adolescent athletes**:

   How many months per year do you coach, and which months are these?
   _____

   During those months, how many **times per week** do you coach? _____

   During those months, how many **hours per week** do you coach? _____

   How many competitive **youth sporting events** have you attended as a coach during the **past 12 months**? _____

10. Do you coach each of the two age groups **separately**?
    ☐ Yes ☐ Most often yes ☐ Most often no ☐ No
    If most often yes or no, explain:
    _____

11. On a scale of 1 to 5, how would you describe the **competitiveness of the youth/adolescent athletes** that you coach? Please mark with an X.

1	**2**	**3**	**4**	**5**
not at all				**very competitive**
☐	☐	☐	☐	☐

12. On a scale of 1 to 5, how would you describe the **competitiveness of the adult (Masters) athletes** that you coach? Please mark with an X.

1	**2**	**3**	**4**	**5**
not at all				**very competitive**
☐	☐	☐	☐	☐

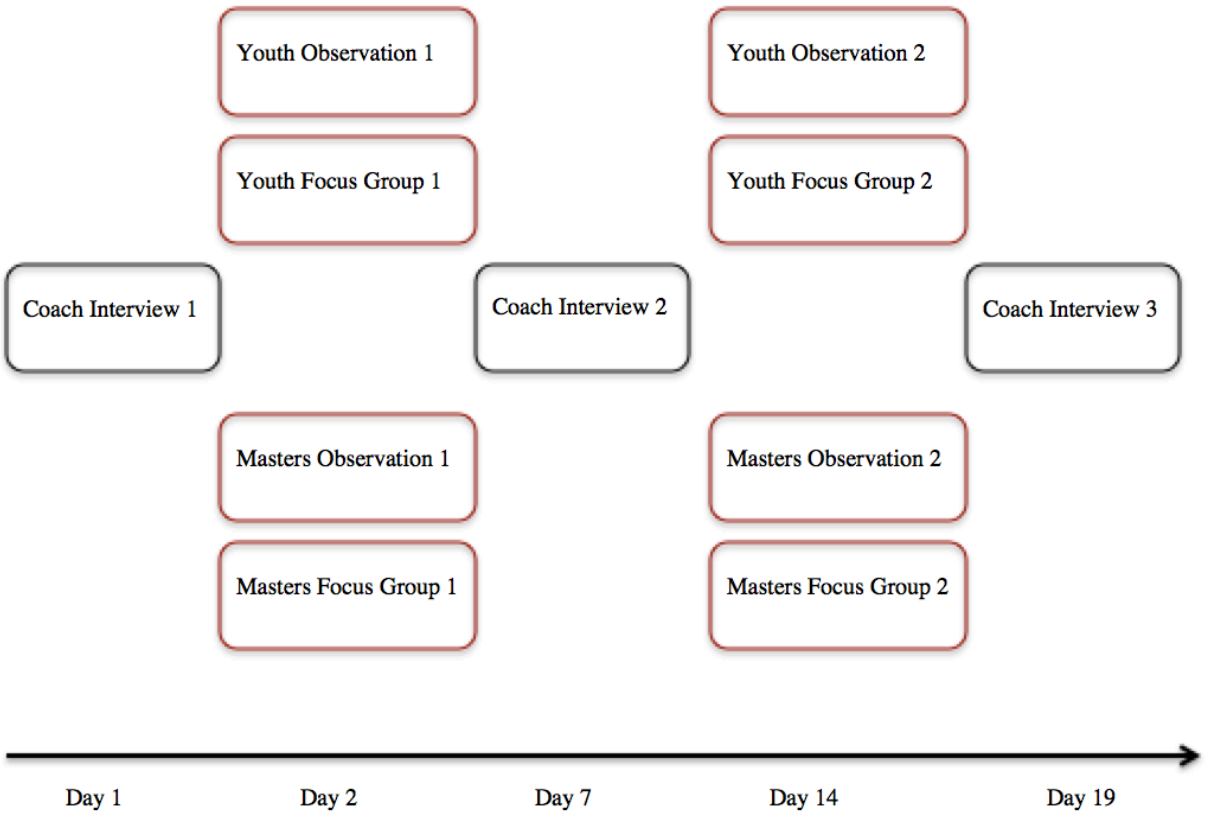
13. Following practice sessions or competitions, what kind of things do you think about in reflection?
    _____
    _____
    _____

14. In what ways do you try to improve your coaching? What types of resources do you seek?
    _____
    _____

15. What is the highest level of NCCP certification you have completed?
    _____

16. What kind of education have you achieved that relates to some aspect of exercise, coaching, sport psychology, or applied sport science?
    _____

Appendix C: Linear Timeline of Data Collection Methods



Appendix D: Coach Interview 1 Guide

1. How do you coach your MAs?

2. What is your general coaching philosophy with your MAs?
    a. What is it about your MAs that require you to coach them this way? (Personal characteristics, personalities, feedback they provide, etc.)
    b. How did you learn this? How do you know that these approaches are appropriate or needed?

3. Can you describe what a typical training session might look like with your MAs, in terms of general structure, sequence of drills, length, etc.?
    a. What types of drills do you typically choose to conduct?
    b. What types and quantity of feedback do you provide for your athletes?

4. How do you coach your youth athletes?

5. What is your general coaching philosophy with your youth athletes?
    a. What is it about your youth athletes that require you to coach them this way? (Personal characteristics, personalities, feedback they provide, etc.)
    b. How did you learn this? How do you know that these approaches are appropriate or needed?

6. Can you describe what a typical training session might look like with your youth athletes, in terms of general structure, sequence of drills, length, etc.?
    a. What types of drills do you typically choose to conduct?
    b. What types and quantity of feedback do you provide for your athletes?

Note: Unstructured probing questions (not listed in this guide) were asked throughout the interview on the basis of the coach's responses to structured questions.

Appendix E: Coach Interview 2 Guide

1. The learner's need to know:

Youth: Asked clarification questions predominately on the water.

1. What other types of questions, if any, do they ask you? How do you think these questions translate to their learning?
2. Youth would not ask questions while congregating by the tree, even though there seemed to be lots of information and directions to understand. Do you allow them to ask questions at this time, or do they simply choose not to?
3. Do MAs ask the same types of questions? Do they ask you 'why' they need to learn something before engaging?

MAs/Youth: I noticed you would ask the athletes how they were feeling and what they were working on.

1. Why do you do this? How do you think it helps them learn from you?
2. Do you ask these questions differently depending on the group? Depending on the athlete?

MAs/Youth: Both groups did not seem to ask you questions after you provided direction on the water.

1. Is this typical? Does one group challenge your feedback/questions more than another?
2. Can you describe what this typically looks like? Do you allow them opportunities to question things on the water?
3. Do they questions things off the water?
4. Can you describe what a meeting with a youth athlete might look like versus one with a Masters athlete?
5. How do you think this influences their learning?

2. Self-concept of the learner:

Youth/MAs: Both groups of athletes seemed responsible for the equipment and gear set-up prior to getting set on the water.

1. How do the athletes know what to do and how to do it?

The youth group seemed to require much more time in boat preparations (seat adjustments, etc.), and more time to coordinate boat arrangements.

1. Why is this? Is this typical?
2. Do you think offering them opportunities to be self-directing is important? Is this the same for both groups in preparation for training?

Youth: During the youth session, you told the athletes to "get a warm-up in", without telling them necessarily what to do.

1. Why is this? Do they enjoy choosing what to do on their own? Do you think they learn well this way?
2. Do you allow the Masters to also be self-directing in their warm-up? Do warm-ups follow the same protocol for both groups?

Youth: As was mentioned briefly before, there seemed to be a great deal of direction given to the youth prior to training compared to that given to Masters.

1. Why is this?
2. Do you feel that youth require more direction or is this based on the complexity of the workout?
3. Why didn't you provide the Masters with direction before they went on the water?
4. How does this influence their learning?

Youth/MAs: The type of direction/feedback you provided each group seemed very technical and quick (pace times, etc.).

1. Is this feedback always structured similarly for each group? Why or why not?
2. Do the athletes enjoy taking the feedback and working through it on their own? How do you know? Is this similar for both? Do you think it helps their learning?

Youth: You would often ask your youth athletes, as well as the MAs, what they were working on, and they would provide you with feedback.

1. How do they know what they're supposed to be working on?
2. Why do you give them the autonomy to choose?
3. Is this the same for both groups?
4. Do you think that this mutual feedback helps them learn from you?

Youth: I noticed that you would ask the youth athletes about their strategies (race plans, etc.).

1. Do they enjoy having the ability to do this? How do they know what to do?
2. Do you also give the MAs the opportunity to work through drills this way? Why or why not?
3. How do you think it helps the athletes learn?

Youth/MAs: The sport in itself seems to allow for a great degree of self-direction as there is typically only one coach on the water and instances such as tipping require the athletes to progress through the drill without you watching.

1. How do you think this affects the athletes?
2. Is this similar for both groups?
3. Which athletes do you think require or appreciate greater opportunities to be self-directing? Why? How does it influence their learning?

3. Prior experiences of the learner:

Youth: Similar to what we were discussing before, the youth athletes did not ask a lot of questions about the drills and directions you provided prior to getting on the water.

1. Is this based on their experience with the same drills?

In terms of technical aspects on the water (stroke rates, etc.), how do they know what these are?

1. Do the MAs understand this as well?
2. Are there any other instances where the athletes' experiences are a factor?

MAs: You mentioned that Masters often have very successful careers and have accomplished a lot in their life.

1. How do you think their life experiences contribute to their sport involvement and success? Does this influence their ability to learn from you?

MAs: I noticed that you said during the MA session, "MAs should only be doing drills."

1. Can you explain this?
2. Is this based on their experience?
3. Is this the same for youth? Why or why not?
4. How does this impact their learning?

4. Readiness to learn:

Youth/MAs: Both groups looked quite involved and committed to training.

1. What do you think enables the athletes to be ready to learn from you in training?
2. Is this the same for both groups?

5. Orientation to learning:

Youth: The youth athletes seemed to communicate with others in their respective crew boat.

1. What types of things are they discussing on the water?
2. Do you try to foster this communication/problem solving?
3. Do you think it impacts their learning in training?
4. Is this the same for MAs?

Youth: I noticed at one point that you told members of a boat to stop talking.

1. How do you know when the dialogue is not constructive?
2. Does this happen with MAs as well?

Youth: Similar to what you did with individuals, I noticed that you would ask members of a crew boat about what they were working on together.

1. Do you expect them to problem-solve in these instances?
2. Do you think that fostering an ability to work together helps them to learn?
3. Do the athletes learn from each other?
4. Is this the same for MAs? Why or why not?

MAs: I noticed that you would often ask MAs what they were working on, although they were in individual boats.

1. Are you asking them to problem-solve when you do this? Is this something that you try to foster? Do they know what to work on?
2. Do you also allow the MAs to work together in crew boats? Do they enjoy this?

6. Motivation to learn:

Youth/MAs: All athletes in both groups seemed rather committed and happy to be at training.

1. Can you describe the youth athletes' motivation?

2. Can you describe the MAs' motivation?
3. Is there anything you do (encouragement, etc.) to help them remain or become motivated to learn and train?

Appendix F: Coach Interview 3 Guide

Part 1: The following questions were informed by field notes of observations regarding the learning situations afforded by the coach to her athletes and in relation to elements of the Andragogy in Practice Model (APM).

1. Direction provided on the water (specifically with Masters) was observed both as individualized and group feedback.
    a. How do you know when to provide each type?
    b. Is this the same approach you take with the youth group?
    c. Why do you do this? How do you think it helps the athletes learn?

2. You asked the youth athletes to "pick a drill to work on in warm-up", they told you what they think they should work on and why, and then you corrected them and provided feedback.
    a. How did the athletes know which drills to pick in this situation?
    b. Why did you allow them to choose as opposed to simply telling them?
    c. Do you also do this with Masters? Why or why not?

3. You told the youth athletes, and the Masters as well, to "line up according to speed".
    a. Why did/do you do this?
    b. How do the athletes know how to order themselves?
    c. Is this the same for both groups? Do they enjoy having this autonomy?

4. I observed a couple of instances, with both groups, where you would provide individualized feedback to athletes but they'd require clarification. In one specific example, you told a youth athlete that he "needs to exaggerate the movement", and he responded by saying "what do you mean?" A similar thing happened with a Masters athlete.
    a. Is it primarily clarification questions on the water? Do they ask any other types of questions?
    b. Is this the same for Masters and youth athletes?

5. During the Masters session, you engaged in conversation with one athlete, telling him that he paddled well, allowed for his feedback, and then gave him things to focus on.
    a. Does this mutual conversation always happen in this way, off the water? Is this something that you try to foster?
    b. What types of questions or feedback do the athletes typically ask in these situations?
    c. Do Masters typically carry things learned off of the water?
    d. Does this look the same when you engage with a youth athlete?

6. I noticed that one of your Masters athletes was noticeably upset on the water, and her feedback allowed you to "leave her be", and approach her in a one-on-one conversation afterwards.
    a. Would this dialogue also happen with youth athletes? Why or why not?

7. I know that life balance exercises are a focus with your youth group because, as you mentioned, you feel that they are students of life as much as they are students of the sport.
    a. Do you think your youth athletes appreciate these exercises? How do you know?
    b. Do you provide these exercises with Masters as well? Why or why not?
    c. Do you think Masters athletes would appreciate having the opportunity to engage in these exercises?
    d. What off water activities, if any, do you provide your Masters athletes? Video? How do these exercises compare between Masters and youth groups?

8. I know that the youth really appreciate having role models within the club to act as motivators.
    a. Do the Masters also look to these same role models? If not, who would be appropriate role models your Masters athletes?

9. I know you mentioned in previous interviews that youth are essentially "blank slates", which lends perhaps to a malleability of your youth athletes and your ability to teach them novel things and see them develop accordingly.
    a. Do Masters athletes also constitute this "blank slate" ideal when they enter your group? If not, what challenges in this regard?

10. You spoke a lot about the heterogeneity that exists in the Masters group, and the wide range of skill, ability, and perhaps personal characteristics.
    a. Can you elaborate on this? What challenges, if any, are involved?
    b. How does this impact your coaching approaches with the Masters?
    c. How does this impact the athletes' learning from you as the coach?
    d. Does this heterogeneity also exist in the youth group?

Part 2: Questions comprising this latter half of the interview explicitly address andragogical principles as presented in the APM.

1. How important is it to you that you talk to your MAs about *why they need* to learn a particular skill that you may be coaching before the drill begins?
    a. Do you have an example of a time when you did this?

    How important is it to you that you talk to your youth athletes about *why they need* to learn a particular skill that you may be coaching before the drill begins?
    b. Do you have an example of a time when you did this?
2. Do you tend to give your MAs responsibility in deciding what to do in practice or in learning a skill *on their own*?
    a. Do you have an example of this?

    Do you tend to give your youth athletes responsibility in deciding what to do in practice or in learning a skill *on their own*?
    b. Do you have an example of this?

3. Do you ask your MAs about how their *previous experiences* in sport or outside of sport might help them learn in practice?
    a. If so, how do you do that?
    b. What does this look like in a learning situation?
    c. Do you have an example?

    Do you ask your youth athletes about how their *previous experiences* in sport or outside of sport might help them learn in practice?
    d. If so, how do you do that?
    e. What does this look like in a learning situation?
    f. Do you have an example?

4. As a coach, are there some MAs that you see as more *ready to learn* than others?
    a. What gives you this indication?
    b. How do you deal with this?
    c. Do you have an example?

    As a coach, are there some youth athletes that you see as more *ready to learn* than others?
    d. What gives you this indication?
    e. How do you deal with this?
    f. Do you have an example?

5. Do you provide exercises or drills where your MAs have to *problem-solve* to figure out solutions for accomplishing tasks?
    a. Can you give me an example of this?
    b. Do your MAs want to relate their ability to problem-solve in practice to anything else in their lives?

    Do you provide exercises or drills where your youth athletes have to *problem-solve* to figure out solutions for accomplishing tasks?
    c. Can you give me an example of this?
    d. Do your youth athletes want to relate their ability to problem-solve in practice to anything else in their lives?

6. Do you *motivate* your MAs to participate in the sport?
    a. If so, can you provide an example?
    b. Do you think your MAs are fairly internally motivated or do they require a lot of motivation from you?

    Do you *motivate* your youth athletes to participate in the sport?
    c. If so, can you provide an example?
    d. Do you think your youth athletes are fairly internally motivated or do they require a lot of motivation from you?

Appendix G: Template of Table used to Organize Field Notes of Observations According to Andragogical Principles

Table 1
Field Notes of Observations

	Andragogical principles					
	Learners' need to know	Self-concept of the learner	Prior experiences of the learner	Readiness to learn	Orientation to learning	Motivation to learn
Learning Situation 1 Description:						
Learning Situation 2 Description:						
Learning Situation 3 Description:						
Learning Situation 4 Description:						

Note: Within the columns, field notes will record the explanation of how the learning situation relates to one or more andragogical principle.

Appendix H: Focus Group Interview Guide

- **Example of a learning situation observed during a youth session:**
  Before the youth athletes went onto the water for warm-up, the coach told each of them to pick a drill to work on, and assured them that they should each have a drill in mind. She then asked each athlete to explain his or her chosen drill in front of the other athletes.

  1. **Examples of probing questions**
     (In this case, related to the *self-concept of the learner* andragogical principle):
     a. "Do you like having the ability to choose what you want to do yourself or do you look to (the coach) for that guidance in the warm-up?"
     b. "On the water, I noticed that this sport is a little different because there's only one coach, and if a boat tips for example, you guys have to continue on basically by yourselves. Do you like having the ability to go out and do your own thing, even if (the coach) might not be looking at you at every moment? Are you able to keep focused?"

- **Example of a learning situation observed during MA session:**
  On the water, the coach approached MAs individually and asked each athlete what he or she was working or focusing on.

  2. **Examples of probing questions**
     (In this case, related to the orientation to learning andragogical principle):
     a. "[In this type of situation], do you know what you're supposed to be working on?"
     b. "[Does] (coach) try to foster (your recall of the two or three things you know you're supposed to be working on) when she asks those kinds of questions?"

Note: Each learning situation described to the athletes was informed by observations made during practice. The examples provided in this guide (one for each cohort of many learning situations discussed in separate interviews) were formed only minutes before the start of the interview, using sketched field notes as a guide. These probing questions were informed by observations that were attempted to relate to aspects of the Andragogy in Practice Model. Thus, questions were structured in ways to highlight the observed principle while adhering to the specific learning situation.

Appendix I: Certificate of Ethics Approval

File Number: H06-15-18 **Date (mm/dd/yyyy):** 07/17/2015

Université d'Ottawa University of Ottawa
Bureau d'éthique et d'intégrité de la recherche Office of Research Ethics and Integrity

Ethics Approval Notice

Health Sciences and Science REB

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

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File Number: H06-15-18

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Approval Date (mm/dd/yyyy)	Expiry Date (mm/dd/yyyy)	Approval Type
07/17/2015	07/16/2016	Ia

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

Special Conditions / Comments:
N/A

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