

EARLY SPECIALIZATION IN YOUTH HOCKEY: A PARENTAL PERSPECTIVE

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Abstract

Early sport specialization is a phenomenon that continues to be practiced in today's youth sports environment. The purpose of this study was to explore practices around early specialization within the minor hockey context in Eastern Ontario. More specifically, the goal of this thesis was to better understand parental perspectives on specialization versus diversification relative to their child's experience in the sport of ice hockey. Additionally, this study aimed to uncover the rates of specialization in Minor Peewee AA ice hockey players in Eastern Ontario and the factors that influence those who specialize. A concurrent embedded mixed-methods procedure was employed for this study; a total of 114 survey responses and 15 semi-structured interviews formed the study sample.

Findings in the study reveal a large majority of parents foster specialization in their child as 87% (n=114) of survey participants identified as having a child who specializes in the sport of ice hockey. However, interview data revealed that parents favor development through diversification. Individual influences such as parents and coaching staff were found to be contributing factors to the phenomenon of specialization. Further, the availability of resources within the hockey context was additionally found to influence specialization. Finally, Hockey Canada's current position was cogitated with the results to reveal a strong inclination towards elite development.

Results indicate a need for parent and coach education regarding their role in early specialization and their support for diversification of sport experiences. It is of particular importance during the transitioning years in particular where stakeholders (parents, coaches, administration) foster the sense of well-rounded development of a participating child not just for the preparation for the elite stages of sport but for overall wellness of the individual.

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List of Abbreviations

DMSF Development Model of Sport Participation

HEO Hockey Eastern Ontario

Chapter 1: Introduction

A trend that has become increasingly common among the youth athlete population is early sport specialization. Defined as intense, year-round training in a single sport with the exclusion of other sports (c.f., Jayanthia, Labella, Fischer, Pasulka & Dugas, 2015), sport specialization occurs when young athletes find themselves in practice and game sessions that are deliberate and driven by skill attainment rather than having fun (Wojtys, 2013). Often, sport specialization occurs because parents want to develop children into elite athletes and consider this to be the best way for children to excel (Gould, 2010). However, and in contrast to specialization, children can diversify at a young age and still achieve elite status in most sports as an adult. Several studies have found that elite athletes in a variety of sports have achieved elite sport status after engaging in early diversification in their childhood years (Baker, Côté & Abernethy, 2003; Cutietta & Bloom, 1985; Carlson, 1998; Côté, 1999; Gulbin, Oldenzel, Weissensteiner & Gagne, 2010; MacNamara, Button & Collins 2010b; Soberlak & Côté, 2003). Additionally, sport diversification reduces the likelihood of burnout and the risk of injury. Black et al. (2019) found that a child who participates in one sport will only work certain muscle groups, therefore constantly placing their body through the same movement patterns and demands ultimately increasing the risk of an overuse injury. In addition, early sport specialization has also been identified as damaging to both the physical and mental health of the athlete (LaPrade, Agel, Baker, Brenner, Cordasco, Côté, & Engebretsen 2016). Also, children who specialize early in a single sport yield higher rates of adult physical inactivity; those who commit to one sport at a young age are often the first to quit (Mostafavifar, Best & Myer, 2013).

The chances of going from minor hockey to a steady NHL career are roughly one in 4,000 (Campbell & Parcels, 2013). Arguably, playing sports should be more about personal

growth development and maturity rather than landing a professional contract. According to Wiersma (2000), many adults hold on to the belief that a child must be involved in organized sport before the age of 7 in order to achieve future success in athletic competition. Although literature exists acknowledging the need for a certain degree of specialization in sport for optimal individual and team performance (Hill, Storandt & Malley, 1993; Ericsson, Krampe, & Tesch-Römer, 1993), it does not do so without admitting that specialization exposes the athletes to potential physical, psychological and social damage (Hecimovich, 2004).

The idea that sport diversification is advantageous for athlete development has been recently advanced by Hockey Canada (Strashin, 2018). While speaking on the importance of multi-sport, Hockey Canada President and Chief Executive Officer Mr. Tom Renney stressed the fact that participation in multiple sports is critical to the development of a child and that hockey should not be the focus for 12 months of the year:

What I would like to suggest is that you do something different, something that maybe helps expand your mind, helps you use your physical assets in a completely different way, maybe gets you outside of your comfort zone a little bit. We love hockey, we identify with it, but at the end of the day we need to do other things. We need to build a complete person, a diverse citizen that's not just married to hockey (Strashin, 2018).

However, parents of young athletes appear to still hang on to the belief that early specialization is most advantageous, as it continues to be a trend in Canada for young hockey players (Hagen, 2015; Martin, 2015).

Study Purpose

The purpose of this study is to explore practices around early specialization in ice hockey and in particular, the parental perspective. To fulfill this purpose, this study sought to examine

Minor Pee wee AA hockey in Eastern Ontario. More specifically, this study will seek to answer the following questions: (1) What are the levels of early specialization in Minor Pee wee AA ice hockey players in Eastern Ontario?; (2) What is the parental perception of youth sport specialization versus diversification relative to their children's experiences with the sport of hockey?; (3) What influences a child to specialize in hockey?

Study Contribution

As previously noted, there is a growing trend among youth hockey players in Canada regarding early sport specialization. Specifically, youth are engaging in competitive hockey longer than the recommended 8 months per year to develop an elite skill-set. This study aims to uncover and highlight the rates of specialization in Minor Pee wee AA hockey players in Eastern Ontario. Subsequently, the findings from the study will illustrate the specialization versus diversification realities in hockey within this region. Since parents play a major role in the decision to partake in the sport of hockey and are committed in part or in whole to assist their child in participating, they are a major stakeholder in the decision to specialize or diversify in sport. Thus, this study will also assess the factors parents believe are influencing their child's sport participation. In conjunction with survey data, semi-structured interviews will allow parents to elaborate on their perspective of specialization versus diversification.

Chapter 2: Review of Literature

Models of Talent Development

Developmental Model of Sport Participation (DMSP). In his study, Côté “describes patterns in the dynamics of families of talented athletes throughout their development in sport” (Côté, 1999, p.395). It has been suggested that families with young children must emphasize fun and skill development and minimize competitive stress if they want to avoid delays or barriers in the family transition to the next stage of development (Hellstedt, 1995). Côté (1999) explored the family conditions a young athlete experiences and the necessary family transitions that transpired. These transitions propelled the athlete to further development stages which saw a greater level of sport success. A total of 15 interviews were conducted which included the athlete, parent, and sibling. As a result of his study, Côté (1999) advanced the DMSP, which recognizes three phases of sport participation: the sampling years, the specializing years, and the investment years.

The first stage in Côté’s DMSP, the sampling years, occurs between the ages of 6 and 12. The main emphasis during the sampling years is to create fun and excitement through sport. During the sampling years, parents are responsible for getting their child interested in the sport. Further, it is here where parents allow their child to sample a multitude of enjoyable activities without focusing on intense training (Côté, 1999). During these years, high levels of deliberate play are emphasized, with a low amount of deliberate practice.

The next stage in the DMSP, the specializing years, range from age 13-15. During these years, an athlete’s involvement in multiple sports begins to decrease and a stronger focus is placed on one or two specific sporting activities. Although fun and excitement continue to be

emphasized during this stage, a greater amount of deliberate practice takes place with a focus on skill development and improvement.

The investment years is the last stage in the DMSP and ranges from the age of 15 and up. In this stage, a high level of deliberate practice is applied. Athletes shift their focus to one primary sport where the goal is to achieve elite status through a greater level of commitment to intense practice. The investment years also yield a greater investment for parents. Parental interest and influence increase during this time as they display a greater interest in their child's sporting activity.

While the DMSP was first conceptualized in 1999, Côté and colleagues (2007) further advanced their findings into a model. The model has been adopted by sport organizations worldwide, including Hockey Canada. This model will form the framework for the study (see Appendix A).

Sotiriadou, Shilbury and Quick's Study of the Sport Development Process. In their study, Sotiriadou and colleagues (2008) examine the sport development process in Australia. To do so, they examined 74 annual reports from 35 National Sport Organizations over four years, before and after the Sydney Olympic Games. The study yielded three important characteristics of high-performance sport, specifically: the attraction process, retention/transition process, and nurturing process. Each process encompasses different sport development strategies necessary for the desired output to move the athlete along the high-performance pathway.

There are two main goals in the attraction process: (1) to increase awareness, participation and membership of general participants, and (2) to nourish large numbers of young participants destined to be elite sports performers (Sotiriadou et al., 2008). During this process, a large focus is placed on increasing mass participation with an emphasis placed on junior

development: “The intention of a well-established attraction process is to cater to large numbers of participants, spectators/supporters, and members, and develop a great pool of young individuals involved with sport” (Sotiriadou et al., 2008, p. 261). Advancement through the attraction process yields a pathway to the retention/transition process for juniors.

The goal of the retention/transition process is to capitalize on the identification of the most talented, retain them, and assist them to obtain the required skills to achieve high standards of performance (Sotiriadou et al., 2008). To excel, an athlete must have had a successful attraction process. Here, it is the responsibility of various state institutes and academies of sport in ensuring junior athlete skill development, physical preparation, and improved performances. The retention/transition process is to cater to junior participants while providing pathways to the elite performances on the national and international sport stage. A successful retention/transition process yields pathways to the nurturing process, which involves talented participants who are ready to move to a higher level of competition and success in sport.

The lone goal of the nurturing process is to nurture the finest athletes, their success at prestigious international events and competitions, and sustain a culture of elite athletes continuing triumphant accomplishments (Sotiriadou et al., 2008). Successful pathways through the prior processes are instrumental in reaching the nurturing process. Further, the success of the athlete in the nurturing process is a testament to their talent, abilities, commitment, and dedication to training and competition (see Appendix B).

Sport Specialization

Ice hockey in Canada has become so popular from an early age that minor players are now playing the sport year-round (Hagen, 2015). Defined as intense year-round training in one sport, with the exclusion of other sports (Malina, 2010), youth who choose to specialize

participate specifically for heightened competition levels at an early age, with the ultimate goal of achieving elite status. However, for most sports, there is no evidence that intense training and specialization before age thirteen or fourteen are necessary to achieve elite status (Jayanthi, Pinkham, Dugas, Patrick & Labella, 2012).

While Malina (2010) argues that the success of sport systems in former communist countries of Eastern Europe has contributed to a perceived need for early specialization, Coakley (2010) condemns for United States President Ronald Reagan and his administration as the culprits who created a spike in youth specialization when they cut funding for park and recreation departments decades ago. According to Coakley (2010), the administration's actions made it difficult and nearly impossible for the public to maintain youth sport programs. As a result, private sport programs emerged and evolved at a rapid pace increasingly generating income potential from youth sport activities. Sport organizations broadcasted that year-round memberships and participation were essential for the future success of their children. Accordingly, youth sport entrepreneurs established a year-round income for themselves. The introduction of longer seasons, more demanding practice and competition schedules, year-round participation, extensive travel to scheduled games, and a growing array of tournaments, in part, caused high rates of early childhood specialization in sports (Coakley, 2010).

In their study, Soberlak and Côté (2003) examined high-level, male hockey players and suggested that early sport specialization is not necessary, does not guarantee elite-level success, and potentially leads to increased chances of burnout. These athletes gradually progressed from playing various sports and dedicating less time to practice towards eventually specializing and practicing in their primary domain: hockey (Soberlak & Côté, 2003). Interestingly, Wall and Côté (2007) remarked on the possibility of early specialization leading to eventual burnout when they

found that among eight current and four former elite-level minor ice hockey players, the four who dropped out began off-ice training at younger ages and invested significantly more hours of off-ice practicing during their sampling years, ages 7-12.

Sport Diversification

Also referred to as sampling, sport diversification infers involvement in multiple sports and participation in deliberate play (Côté, Lidor & Hackfort, 2009; Côté, Turnidge, Evans, 2014; Côté, Baker, Abernethy, 2007). For most sports, early diversification is more likely to lead to success (Barynina & Vaitsekhovskii, 1999; Carlson, 1988; Helsen, Starks & Hodges, 1998), while providing youth athletes with constructive physical, social and psychosocial environments (Wiersma, 2000). Additionally, sport diversification is linked to decreased rates of dropout from sport, increased likelihood of achieving elite level status in sport, continued participation in sport later in life and decreased rate of overuse injury (Brenner, 2007; Côté et. al., 2009; Difiori et al., 2014). While advancing that early diversification enhances athlete development, Côté and colleagues (2009) developed seven postulates that highlight the benefits of early sampling. These postulates, noted within the DMSP (Côté, 1999), provide best practice recommendations for sport participation while highlighting the benefits of diversification.

1. Early diversification (sampling) does not hinder elite participation in sports where peak performance is reached after maturation.
2. Early diversification (sampling) is linked to a long sport career and has positive implications for long-term sport involvement.
3. Early diversification allows participation in a range of contexts that most favorably affect youth development.

4. A high amount of deliberate play during the sampling years establishes a range of motor and cognitive experiences that the child can ultimately bring to their principal sport of interest.
5. High amounts of deliberate play during the sampling years builds a solid foundation of intrinsic motivation through involvement in activities that are enjoyable and promote intrinsic regulation.
6. Around the end of primary school (around age 13), children should have the opportunity to either choose to specialize in their favorite sport or continue in sport at a recreational level.
7. Late adolescents (around age 16) have developed the physical, cognitive, social, emotional, and motor skills needed to invest their effort into highly specialized training in one sport (Côté et. al., 2009).

Personal Development through Sport Participation

According to the academics, “sport is frequently regarded as an effective mechanism for promoting positive youth development” (Jones et. al., 2016, p. 1). Sport can help with the social and physical development of a child while providing a plethora of benefits including team building, goal setting, and positive social interactions (Eime et. al., 2013). Similar findings presented by Coakley (2002) and Donnelly & Coakley (2002) have also exhibited the potential of sport programs to contribute to child and youth development and the social inclusion of children and youth.

Simply put, sport participation at a young age helps children to learn physical skills that allow them to stay active later in life (Hedstrom & Gould, 2004). Through sport, children can learn, or become familiar with, the competitive process and learn to assess their proficiency in

different skills through participation (Ewing & Seefeldt, 2002). In addition to physical skills, sport can provide a context for a wide range of developmental experiences such as the development of self-knowledge and emotional regulation (Hansen et. al., 2003). Hedstrom & Gould (2004) conclude that character in children and youth can be enhanced in sport and physical education settings. Additionally, Canadians consider sport, after family, to have the most influence on the development of positive values in youth (Canadian Center for Ethics in Sport, 2014). Evidence suggests that sport-based programs improve the learning performance of children and youth. In his investigation of peer-reviewed literature, Kidd (2008) found sport to be capable of facilitating educational attainment and encouraging youth to stay in school. Additionally, he concluded that sport-based programs in schools aid in the social development of young people (Kidd, 2008). Sallis and Owen (1999) reported similar findings when they illustrated a link between physical education and improved academic performance. Belch and Belch (2001) found that university students who use recreational sports facilities persist in their studies at a higher rate than non-sport participants. In contrast, Bailey (2006) debunked the notion that physical education and sport participation interfere with educational goals and academic achievement.

The above findings demonstrate the potentially positive role that sport participation can have on young people. While sports are encouraged for their ample health benefits, they further have the potential to enhance the character and improve the learning performance of youth (Coakley, 2002; Donnelly & Coakley, 2002). The Conference Board of Canada's (2005) report on sport in society states that sport is an important tool in which participants, particularly young people, can ascertain and enhance a range of skills that are transferable to adult life. In contrast,

those who specialize at a young age risk forgoing the benefits of a diversified sport participation experience (Côté, 1999).

Parental Involvement in Sport

Parental involvement in youth athletes is critical to achieving success in sport (Wylleman, DeKnop, Ewing, & Cummings, 2000). Rowley (1986) argued that, “the primary role of the parent in youth sports is to provide emotional, financial, and visionary support for their children” (Rowley, 1986). A parent should always be encouraging, supportive, and positive, for a parent’s behavior towards their child and their sport has a direct influence on their child’s sport experience. Studies have shown a positive relationship between parents who are involved with their child’s sporting activities with the child’s enjoyment of the activity, participation in physical activities, and continued participation in youth sports (Cumming & Ewing, 2002). Further, research has highlighted that a parent’s involvement in their child’s learning is positively related to achievement (Cotton & Wiklund, 2011; Jeynes, 2007; Hughes, & Kwok, 2007; Rogers, Wiener, Marton, & Tannock, 2009). Although parents may not be directly involved in the activities of their child, their indirect involvement can have a positive or negative influence on their child’s experience in sport (Fraser-Thomas et al., 2005).

Parental Pressure in Sport Development

According to the authors, “a growing concern among those involved in youth sports is that certain aspects of parental involvement are detrimental to the development and experiences of young athletes” (Cumming & Ewing, 2002, p. 1). Though the responsibility of the parent involves providing emotional, financial, and visionary support for their children, overinvolvement has shown to be harmful due to the possible consequences of perceived parental pressure (Hellstedt, 1987). Wuerth, Lee, and Alfermann (2004) found that pressure

perceived by youth athletes was related to directing and controlling parental behaviors.

Additionally, Anderson and colleagues (2003) determined that when parental pressure increased, a child's enjoyment and satisfaction decreased. Further findings by Vallerand and colleagues (1987) conclude that athletes who feel they have little say or control over their decisions to play sports typically report less interest in sport, lower levels of enjoyment and satisfaction, and are more prone to drop out of sport. Not surprisingly, children that are most likely to drop out are the talented young athletes who perceived their parents as controlling (Coakley, 1992).

Providing the proper emotional support proves challenging in an adult society that emphasizes prominence and winning. Fredricks & Eccles (2004) state that parents play a critical role as socializers, role models, providers, and interpreters of their children's sport experience. Still, parents become emotionally over-involved. Cumming and Ewing (2002) found that a number of parents become so invested in the lives of their children that they found it difficult to separate themselves emotionally from their children's experiences. Malina (2010) suggests this is the result of parents' perception of sport specialization and that concentrating on a single sport will allow his or her child to get ahead of, or at the very least, keep up with peers in the athletic domain. However, this is proven not to be advantageous. Instead, behaviors like such can result in what Coakley (2017) considers "the most potentially destructive situation", which occurs when children believe that their relationships with one or both parents depend on continued involvement in sport or on the quality of their performance as athletes.

Hockey Canada Long-Term Player Development Model

Hockey Canada's Long-Term Player Development model is a guide for the most appropriate style, level, and activities for young athletes in their stage of physical development. The model presents a vision for hockey in Canada that incorporates the history and culture of the game. Its purpose is to increase participation and lay the foundations of international success long into the future (Hockey Canada, retrieved May 10, 2020). The model for Hockey Canada has been developed based on the following principles:

- Doing the right thing for the player at the right stage in their development.
- Adopting a player-centered approach and not treating the development of all players the same way.
- The broader the foundation of players the more successful the game of hockey will be in Canada.
- Viewing player development as a long-term process.
- Aligning player development resources (skills manuals, DVD's) with Coach. development and education resources so that coaches are doing the right things at the right time.
- A need to better educate parents on the hockey development of their child. It is okay for parents to want their kids to get to the highest levels but they need to know the best way to go about it.

The model follows a nine-stage pathway based on the physical, emotional, mental and cognitive development of children and adolescents. The nine pathways include:

- Discovery Ages: Age 3-4
- Fundamentals 1: Age 5-6

- Fundamentals 2: Age 7-8
- Learn to Play: Male 9-10; Female 8-9
- Learn to Train: Male 11-12; Female 10-11
- Train to Train: Male 12-16; Female 11-15
- Train to Compete: Male 16-17; Female 16-18
- Train to Win: Male 18-20; Female 18-22
- Excel: Male 21+; Female 22+

Level of play is then grouped into a stage of the pathway. The levels include:

- Initiation: Age 5-6
- Novice: Age 7-8
- Atom: Age 9-10
- Peewee: Age 11-12
- Bantam: Age 13-14
- Midget: Age 15-17

An age-specific program approach is practiced that caters to the players at each level of play. Further, beginning at the Atom age, levels are grouped into two categories, community and developmental. The community category sees a lower level of commitment and shortened season. The category is classed as *recreational* where the developmental category which boasts a heightened season is *competitive* (Hockey Canada, retrieved May 10, 2020).

Chapter 3: Methods

The following chapter outlines the procedures that were employed to answer each research question in the study. Considering the study concerns early specialization in youth hockey players, it is important to first define what sport specialization is. Jayanthi and colleagues (2015) define sport specialization as year-round (8+ months/year) training in a single sport with the exclusion of other sports (Jayanthi et. al, 2015).

To begin, the study explored practices around early specialization in Minor Peewee AA hockey players in Eastern Ontario. More specifically, to disclose the rates of specialization within the Minor Peewee AA hockey league of Hockey Eastern Ontario. Six components define sport specialization: (1) whether athletes trained more than 75% of the time exclusively in one sport, (2) whether athletes train to improve skill or misses time with friends, (3) whether participation in other activities was discontinued to focus on one sport, (4) whether the athlete considers one sport more important than other sports, (5) whether participation involved extensive travel and (6) whether participation (practices, games, etc.) involved training for more than eight months in a given year (Jayanthi, Pinkham & Luke, 2011). To be deemed specialized, athletes had to associate with three or more of the six components. In addition to examining the rates of specialization, this study explored parental influence placed on a child to specialize. Eleven questions regarding the parents' time and resource commitment, the parents' perception of the child's enjoyment, the placement of direct pressure to specialize, and the type and level of coaching the child receives were assessed.

In the second segment of the study, semi-structured interviews were conducted to understand the parent perspective on specialization versus diversification relative to their child's

participation in the sport of hockey. Finally, parents were questioned on their notion concerning factors influencing specialization in the hockey environment.

To answer the research questions in this study, a mixed-method design was utilized. This approach consists of combining elements of qualitative and quantitative research approaches (e. g., use of qualitative and quantitative viewpoints, data collection, analysis, inference techniques) for breadth and depth of understanding and corroboration (Johnson et al. 2007, p. 123). The rationale for blending both quantitative and qualitative data is that both research methods, in combination, provide a better understanding of the research problem than either research process alone.

In this study, a concurrent embedded strategy was employed. Within the design, both qualitative and quantitative data is collected simultaneously. A greater emphasis is placed on a primary method that guides the project and a secondary database that provides a supporting role in the procedures (Creswell, 2003). Morse (1991) notes that within an embedded strategy, a primarily qualitative design also utilizes quantitative data to enrich the description of the sample participants. In this study, the quantitative method is embedded within the qualitative method to provide statistics and data to support conclusions derived from the interview data. Additionally, the design allowed for the collection of two types of data simultaneously during a single data collection phase.

Context

The following defines the context in which the study took place. To begin, a description of the governing body, Hockey Eastern Ontario (HEO), is provided. Within HEO lies Hockey Eastern Ontario Minor, a branch of HEO which encompasses all minor teams within the region. Last, a description of the division in which the research took place is provided.

Hockey Eastern Ontario. Formerly known as the Ottawa District Hockey Association, HEO is the governing body of amateur hockey in Eastern Ontario. As the governing body, it follows Hockey Canada's policy and guidelines. HEO is one of the thirteen branches of Hockey Canada and one of three branches in Ontario. It is the foremost league of amateur hockey within its defined boundaries and is composed of amateur hockey teams, leagues, and associations that are within its geographical jurisdiction. HEO has jurisdiction over the part of Ontario lying east of the Counties of Lanark, Renfrew, and all of Leeds except the town of Gananoque and the portion west of Highway No. 32, and south of Highway No. 15 in the Province of Ontario (Hockey Eastern Ontario, retrieved May 10, 2020). The league denotes four main objectives, which are as follows: (1) to foster, improve, and perpetuate the sport of amateur hockey within the territory under its control (2) to secure the enforcement of the rules of the game as adopted by the association, (3) to conduct elimination competition for the different association champions as well as challengers for inter-branch and Canadian championships, and (4) to adjudicate on all questions arising from and pertaining to amateur hockey within the association (Hockey Eastern Ontario, retrieved May 10, 2020).

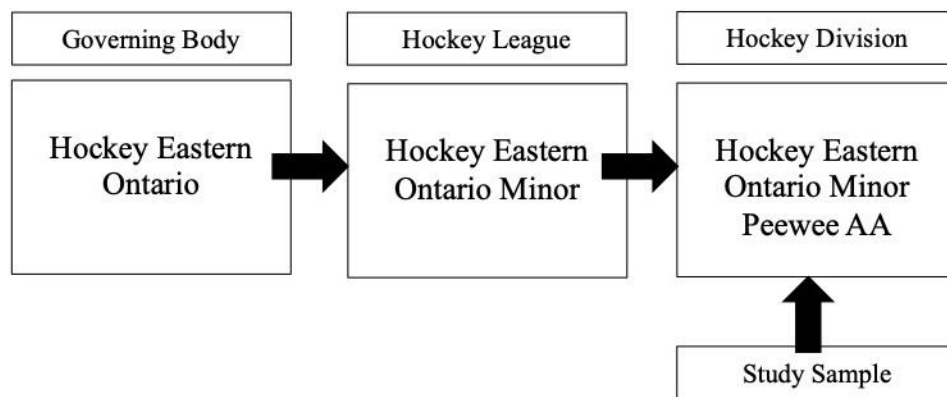
HEO Minor. HEO Minor is a branch of Hockey Eastern Ontario. HEO Minor boasts more than 26,000 participants in 10 districts of Eastern Ontario. The league dedicates itself to, "promote and foster minor hockey through fair play and maintain and increase interest in the game of hockey by ensuring that all organized minor hockey is developed within the Branch in accordance to prescribed standards" (Hockey Eastern Ontario, retrieved May 10, 2020). The league encompasses all minor teams in its region ranging from Novice to Midget and features all levels of play from house-league to AAA .

HEO Minor Peewee AA. The Minor Peewee AA division is the division in which the study takes place. There is a total of ten teams that participate in the division. Thus, the entire data set from the study derived strictly from the following ten teams: (1) Rideau St. Lawrence Kings, (2) Ottawa Valley Silver Seven, (3) Ottawa Sting, (4) Upper Ottawa Valley Aces, (5) Gloucester Rangers, (6) Seaway Valley Rapids, (7) Nepean Raiders, (8) Eastern Ontario Cobras, (9) Cumberland Jr. Grads, and (10) Kanata Blazers.

Study Sample

The parents of hockey players in the sampling years of Jean Côté’s (1999) DMSP were the focus of the study. More specifically, parents of Minor Peewee AA aged hockey players (11 and 12 years old) who participate in the HEO minor hockey league and who subsequently fall within the *retention/transition* phase of Sotiriadou, Shilbury and Quick’s (2013) study of the sport development process will form the study sample (see Figure 1).

Figure 1: *Breakdown of Study Sample*



Research Questions

This study will seek to answer the following questions: (1) What are the levels of early specialization in Minor Peewee AA ice hockey players in Eastern Ontario?; (2) What is the parental perception of youth sport specialization versus diversification relative to their child’s

experiences with the sport of hockey?; (3) What do parents believe influences a child to specialize in hockey?

Data Collection

Quantitative Segment. Upon ethical approval (H-03-19-3014) (see Appendix C), data collection commenced with the use of an online survey combining two validated questionnaires (Jayanthi et al., 2011, Padaki et al., 2017). Part 1 of the survey asked questions regarding the rates of specialization in Minor Peewee AA ice hockey players in Eastern Ontario. Part 2 of the survey asked questions regarding the parent's understanding of the influences involved in their child's environment regarding specialization in hockey including for example their time and resource commitment.

The online survey was administered via email to the coach on all ten teams in the Minor Peewee AA league. In the email, a description of the study in full was provided that included a hyperlink to the online survey (see Appendix D). Coaches were asked to forward the aforementioned survey link to the email associated with the parent of each player on the team. From there, parents were able to choose to participate in the two-part survey by clicking the embedded link. Before the beginning of the survey, a consent page was employed to ensure ethical practices were executed.

Consistent with the study of McFadden and Colleagues (2016), the child Sport Specialization Scale (Jayanthi et al., 2011) was used in the first section to group the youth into two categories: specialized or non-specialized. The survey was completed by one parent of each youth athlete. This survey included six questions: (1) whether athletes trained more than 75% of the time exclusively in one sport, (2) whether athletes train to improve skill or misses time with friends, (3) whether participation in other activities was discontinued to focus on one sport, (4)

when the athlete considers one sport more important than other sports, (5) whether participation involved extensive travel, and (6) whether participation involved training for more than eight months in a given year (Jayanthi et al., 2011). Those who answered yes to three or more questions were deemed specialized, while others were deemed non-specialized.

In the second section of the survey, a parents' influence on their child's specialization was assessed. Following Padaki and colleagues (2017) study that concluded a positive feedback cycle likely exists between parental influence and youth athlete specialization, questions regarding the parents' time and resource commitment, the parents' perception of the child's enjoyment, the placement of direct pressure to specialize, and the type and level of coaching received formed the questions.

Qualitative Segment. For the qualitative segment of research, semi-structured interviews were utilized to comprehend a parents' perception of youth sport specialization versus diversification relative to their children's experiences with the sport of hockey. Semi-structured interviews are a qualitative data collection strategy in which the researcher asks informants a series of predetermined but open-ended questions (Given, 2008). Utilizing semi-structured interviews allowed participants to reflect on their perception of specialization versus diversification. Further, semi-structured interviews allowed the researcher to explore particular survey questions to a greater degree.

Parents were asked to participate in semi-structured interviews in the initial email administered to them from the coach which also contained the survey link (see Appendix E). Inclusion criteria paralleled that of the quantitative phase: to be eligible to participate, a parent must have a child participating on one of the ten teams in the Minor Pee wee AA league. Those

who were interested in participating and met the criteria were asked to contact the principal investigator to schedule a mutually agreed upon time to conduct the interview.

A total of 15 interviews were conducted throughout the data collection period. All interviews were conducted via the telephone and subsequently recorded for transcription. Interviews began with a description of the study and then verbal consent from the participant. The interview guide consisted of ten questions which were designed to allow each participant the opportunity to provide as much detail about their notion on the topic as they felt necessary (see Appendix F).

The duration of interviews ranged in length from 10 minutes to 32 minutes. Each interview was recorded using a digital recording device. Following the interview, participants were informed that a transcribed copy of the interview would be sent to them via email. Once transcribed and received, participants were asked to verify the interview transcript and were encouraged to make any additions or deletions as they found to be necessary. However, no participant chose to modify their transcripts; all participants verified the transcribed interview provided.

Data Analysis

Quantitative Segment. Data from the online survey was assessed using SPSS 26.0 for Mac. In the first part of the survey, The Sport Specialization Scale (Jayanthi et al., 2011) was used to classify athletes as ‘specialized’ or ‘diversified’. The survey was completed by one parent of each youth athlete (n = 114). The scale consists of six questions including: (1) whether athletes trained more than 75% of the time exclusively in one sport, (2) whether athletes train to improve skill or misses time with friends, (3) whether participation in other activities was discontinued in to focus on one sport, (4) when the athlete considers one sport more important

than other sports, (5) whether participation involved extensive travel and (6) whether participation (practices, games, etc.) involved training for more than eight months in a given year. Players were classified as ‘specialized’ if the parent answered ‘yes’ to three or more of the six questions. Those who answered ‘yes’ twice or less were deemed diversified.

In the second part of the survey, 11 questions were administered evaluating the parents’ involvement in their child’s sport. Questions analyzed the parents’ time and resource commitment, the parents’ perception of the child’s enjoyment, the placement of direct pressure to specialize, and the type and level of coaching the child receives. The survey instrument was replicated from Padaki and colleagues (2017) study. Descriptive statistics were employed to assess participant responses relative to each question.

Qualitative Segment. Qualitative findings were analyzed through thematic analysis. Known as a method for identifying, analyzing, and reporting patterns within data, thematic analysis minimally organizes and describes a data set in detail which allows the researcher to uncover themes and concepts embedded throughout the data (Braun & Clarke, 2006). In the preliminary stage of analysis, interviews were transcribed verbatim from the audio recordings. Upon completion, interview transcripts were shared with the interviewee. Once confirmed, data was coded using In-Vivo Coding. Coding in qualitative analysis involves categorizing data into concepts, properties, and patterns (Lindlof et al., 2002). Examination of interview transcripts revealed initial codes that further developed into themes that are indicative of interview findings. Data validation followed thereafter and conclusions of the parent’s perception of youth sport specialization versus diversification, and the factors that influence specialization were constructed based on the findings.

Chapter 4: Results

The purpose of this study was to explore practices around early specialization in hockey and in particular, the parental perspective within the sampling years of Côté's (1999) DMSP and the retention/transition phase of Sotiriadou and colleagues (2008) Sport Development Process. In addition, the study aimed to uncover the factors that influence a child to specialize in the sport of hockey. The first section of the chapter presents the results of the survey data. More specifically, it reports the findings from research question 1. Furthermore, it offers an insight to the types of influence a parent places on their child to specialize by way of their involvement in their child's sport. The following two sections in the chapter present the results from the interview data. To answer research question 2, findings regarding the parent perception of specialization versus diversification are exhibited. Following that, factors influencing specialization from the thematic analysis are presented to answer research question 3.

Quantitative Findings

Rates of Specialization and Parental Influence

The following section of the chapter displays the results from the online survey. In the primary, rates of specialization are revealed through the use of the Sport Specialization Scale (Jayanthi et al., 2011), which reveals an alarming percentage of specialized participants within the study. Next, results from the Parent Influence on Specialization Survey (Padaki et al., 2017), which analyzes the influences a parent has in their child's specialization, are presented and discussed.

Sport Specialization Scale. The sport specialization scale was the first instrument of two that was administered on the online survey. This measure was designed to provide an overview of the specialization rates amongst Minor Peewee AA ice hockey players in Eastern Ontario. The

scale includes 6 questions that in combination, determine whether a child specializes in the sport of hockey, or if they diversify their sport participation. The questions were answered by a parent of the child, and those who selected 'yes' three or more times were deemed specialized. Those who identified with two or less were deemed diversified.

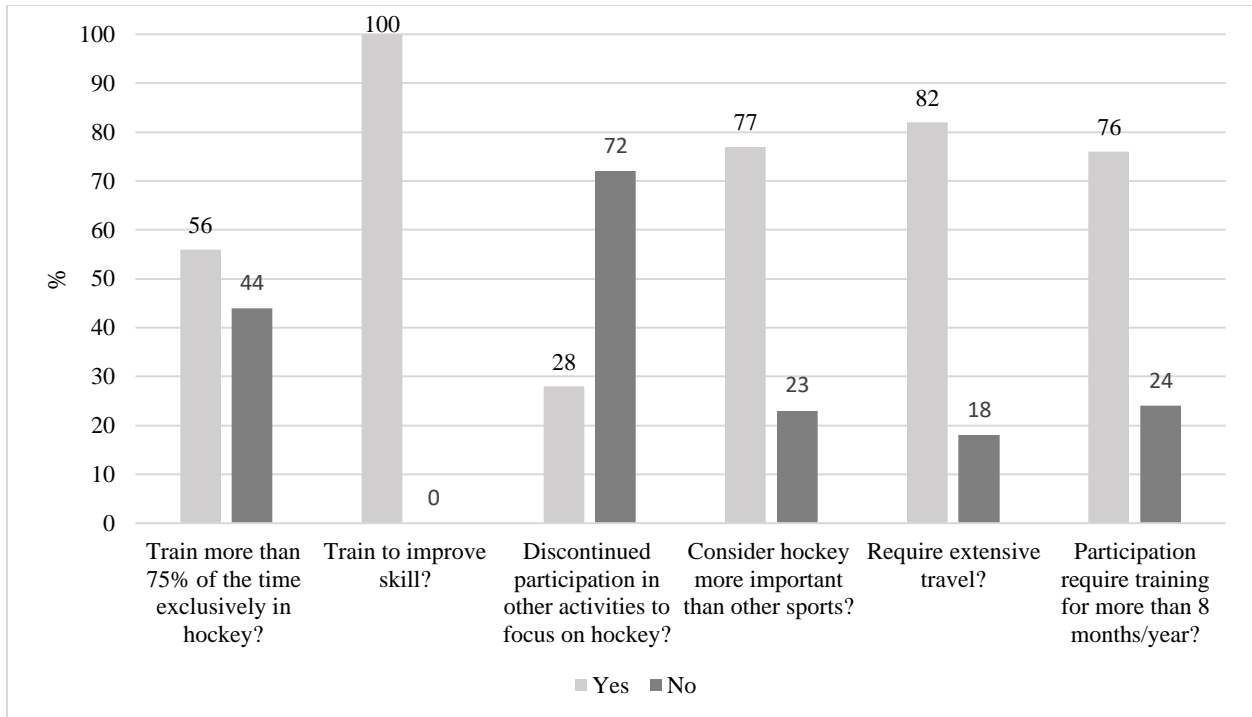
The results from the scale reveal that participants as a group associate with factors that influence specialization more so than those that do not. For example, it is shown that 'yes' is a leading response to all questions but one, indicating the trend of specialization is greater than diversification within the context. A total of 124 participants took part in the survey. 10 participants were deemed invalid due to a lack of responses, therefore, bringing the total number of completed survey responses to 114. Upon analysis, 99 participants answered 'yes' to three or more of the six questions. In contrast, 15 participants answered 'yes' to two or less. As a result, 87% of survey participants were deemed specialized, while the remaining 13% percent were classified as diversified.

While results from the scale divulge the overall rate of specialization within the context, individual question responses further disclose data that highlight the severity of the phenomena. For example, more than 75% percent of participants stated that participation in the sport of hockey requires training for more than 8 months out of the year, therefore exceeding the traditional length of a season that is outlined in Hockey Canada's LTAD model (Hockey Canada, 2013, retrieved May 10, 2020). Further, 28% of participants indicated that they have discontinued participation in other activities to focus on hockey. This contradicts Hockey Canada's suggestion of focusing on 1-2 additional sports during this stage. Last, 56% of survey participants revealed that their child trains exclusively in the sport of hockey more than 75% of

the time, therefore indicating an inclination to the sport despite the fact Hockey Canada suggests participating in supplementary sports for continued physical literacy development (see Table 1).

Table 1: *Sport Specialization Scale*

Sport Specialization Scale



Parent Influence on Specialization Survey. The parent influence on sport specialization survey was the second part administered in the online survey. The survey consisted of 11 questions that evaluated the parent’s involvement in their child’s sports specialization. Responses analyzed the parents’ time and resource commitment, the parents’ perception of the child’s enjoyment, the placement of direct pressure to specialize, and the type and level of coaching the child receives.

Descriptive data from the survey revealed a few indications that highlight factors to which influence specialization. First, parent aspirations for their child show that more than half

of the participants have extrinsic motivations for their child which include playing hockey at the college or junior level. Further, 10 percent of survey participants expressed that they hope their child reaches the professional level when in reality only 0.0057 percent of all kids playing hockey play one game in the NHL (MacQueen, 2013). Next, the amount of coaches a child receives instruction from and the level of coaching a child receives indicates that parents are undertaking supplemental instruction for their child, which could be considered a resulting effect of the aspirations they have for their child. Last, and most noteworthy, 51.3 percent of participants indicated that they do not influence their child to focus on one sport, therefore revealing that the remaining 48.7 percent participants influence their child to focus primarily on one sport to a certain degree (see Table 2).

Table 2: *Parent Influence on Specialization Survey*

Parent Influence on Specialization Survey

Question	%
What is the highest level of play your child hopes to reach?	
Recreational	0.0
Travel	5.2
Elite Travel	22.6
College/Junior	37.4
Professional	34.8
What is the highest level of play you hope for your child?	
Recreational	7.0
Travel	5.3
Elite Travel	20.2
College/Junior	57.0
Professional	10.5
How many different head coaches and instructors does your child have per year?	
0	0.9
1-2	30.4
3-4	52.2
5-6	13.0
7+	3.5

What is the highest level of coaching your child receives instruction from?

None	0.0
Parental/Family	2.6
Club	25.2
Elite Regional	56.5
Professional	15.7

How much money per week do you spend on your child's training?

0-49	36.0
50-99	31.5
100-199	25.2
200-299	2.7
300+	4.5

How many hours a week do you spend commuting to and from your child's practices and games?

0	0.9
1-2	7.0
3-4	37.4
5-6	33.0
7+	21.7

How many hours of practice and coaching does your child receive per week?

0-2	4.4
3-5	48.3
6-8	35.1
9-10	8.8
11+	3.5

How many hours does your child spend on playing competitive games per week?

0-2	15.7
3-5	75.7
6-8	7.0
9-10	1.7
11+	0.0

How much fun do you think your child has participating in his or her sport?

None	0.0
A little	1.7
A moderate amount	7.8
A lot	33.0
A great deal	57.4

How much do you influence your child to focus on one sport?

None	51.3
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A little	25.2
A moderate amount	20.0
A lot	2.6
A great deal	0.9

What is the highest level of sport you (the parent) have achieved?

Recreational	30.7
Travel	18.4
Elite Travel	22.8
College/Junior	27.2
Professional	0.9

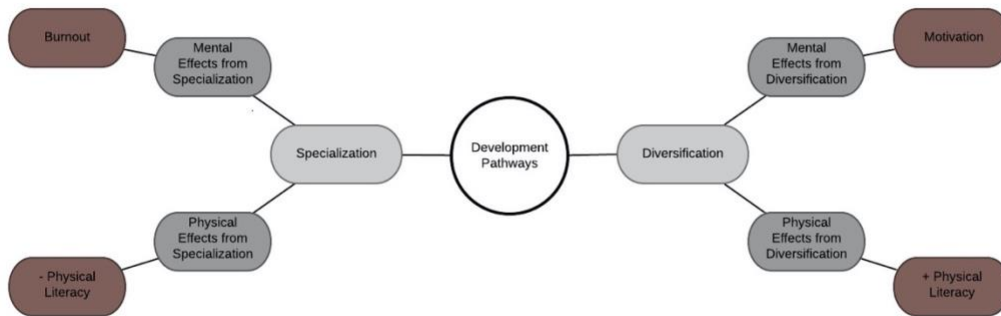
It is important to note that survey participation was voluntary, therefore results may not be indicative of the entire population. While there are few indicators of the influence a parent has in their child’s specialization, a greater sample size and interview data gathered from those who chose not to participate would provide a more complete understanding of the influence a parent has on their child’s participation. It is also important to note that often children carpool with fellow players to team events, so the number of hours spent commuting to practice and games may not be telling of the commitment of each parent.

Qualitative Findings

Parent Perception of Specialization versus Diversification

To understand the parental perspective on the contemporary advancement of specialization research, participants were questioned on their notion of both specialization and diversification relative to their child’s participation in the sport of hockey. Analyses of the data revealed two prominent characteristics pertaining to specialization: (1) Burnout and (2) Negative Physical Literacy; and two pertaining to diversification: (1) Motivation, and (2) Positive Physical Literacy which were categorized further into the physical or mental facet of each pathway (see Figure 2).

Figure 2: *Parent Perception of Specialization versus Diversification*



Physical Effects from Specialization.

Negative Physical Literacy. Participants noted that both specialization and diversification have both mental and physical consequences important to consider. In regards to specialization first, participants noted the deleterious effects of too much hockey. The following quote illustrates the sentiment of many of the interviewees and their concerns about the physical impact of over participation:

With regard to specialization, I've heard...I mean...there's obviously two sides to it. The one side is basically the effects that specialization, whether it's hockey or any other sport, has physically and mentally and I guess I'll start with the physical one. Especially with a sport like hockey, it's not the same type of biomechanical movements as it would be for walking and running. It (specialization) can have long term effects of wear and tear on joints. (Diversifying) sports reinforces the other muscles and body parts around those muscles so it decreases injury. Then there's the mental side of it whereas

basically the kids are just, it's just, it's almost like working on a line shift. Like, I mean it is just repetition. It's always the same movements all the time and there's nothing fresh (P2).

When questioned about his knowledge of specialization, participant 2 acknowledges the existence of effects that can harm a child who specializes and the benefits to those who diversify. He notes that specialization can affect a child's development physically as it hinders the ability to develop and reinforce body parts and mechanics not commonly utilized in hockey. Additionally, participant 2 notes that overuse of body parts can lead to wear and tear on one's joints, in effect making the individual prone to injury. While participant 2 doesn't go into detail about the mental effects of specialization, he does express his concern with performing the same tasks and movements repeatedly. Similar findings were found when participant 12 notes the physical effects specialization can have on the development of a child:

You know, I think just being in one sport it makes the kids...I wouldn't say necessarily tired, but it's doing the same thing over and over, the same muscles and the same program. And they don't get a chance to discover new things. You don't get a chance to be bad at something. A lot of the elite hockey players, they're on top of the world, they're good, they're good at running, they're good at skating and things like that, but if you put him on a ski hill or if you try and tell him to do something else they'll have problems and some of them they won't be able to deal with that (P12).

Highlighting the importance of physical literacy in the development of a child, participant 12 concludes that diversification in sport can assist a child in developing well-rounded motor

skills rather than skills that are specific to a single sport. When an athlete shows they have a broad range of motor skills they provide themselves and their coaches with more performance options and general athleticism that may be used later down the road if the athlete chooses to specialize. To support participant 12's statement, participant 2 shares thoughts that parallel those of participant 12:

Especially with a sport like hockey where it's not from my understanding, it's not the same type of biomechanical movements as it would be for walking and running. It could have like long term effects of wear and tear on joints and the fact of not having a specialized sports kind of like reinforces the other muscles in their body parts around those muscles so it decreases injury (P2).

Above, participant 2 articulates the importance of developing a well-rounded competent athlete to sustain longevity within the sport of hockey. Participant 2 states that by diversifying sport participation, athletes can reinforce muscles not commonly used in the sport of hockey which, as a result, decreases the likeliness of injury. Following participant 2, participant 9 shares a similar thought, "I think specialization is going to beat up the body physiologically. A young body in this case, a minor, and create different strains" (P9). Similarly, participant 13 states, "I think that kids need a break. I think it's a reason why all these kids are getting injured because they don't take break" (P13). Therefore, it is apparent that the aforementioned participants are aware of the damaging physical effects of specialization as they recognize a relationship exists between specialization and negative physical literacy.

Mental Effects from Specialization.

Burnout. In addition to the physical effects, participants correspondingly remarked on mental effects associated with specialization. More specifically, participants indicated burnout as a detrimental characteristic that impedes the development and future success of a child. The following quote illuminates an instance to which burnout can hinder a child's progress:

There are so many factors that determine whether or not they're going to make it to a professional level or not... and I think personally I think a big driving force is that you have got to love it. And so, if they burn themselves out on the sport and they're just not...by playing year-round I think...I personally think they're probably less likely to achieve a higher level at the sport because their interest starts to wane because they become sick of it. And so, you know you work harder at practice as a result, you maintain your focus that much more and then you're getting more out of all of those reps than you would if it was really a chore and you're sick of it. I think in the end...I think they probably stand to have a better chance to excel more given a break from the sport (P7).

Participant 7 articulates that he believes a specialized child is less likely to achieve a status greater than a diversified athlete counterpart as their work-ethic and motivation decreases through continued participation. Instead, he states that a diversified child is more likely to work harder at practice, maintain focus, and improve as a result. When speaking about his own experience, participant 7 adds:

I know when my son skates for the first time he is ready to start again. He's excited about getting back on the ice. Whereas I've witnessed from other kids, the ones that play right through July, it feels like they don't get a break at all.

And so, whenever the new season starts again, it's not such a novelty. They're all a bit tired of it already. I think getting that break you get hungry to get back at it. I think the last tournament he did this year of spring hockey, he went and he did it but I'll say he wasn't that enthusiastic about going there. It was the last tournament and I think it seemed he felt like it was a little bit of a chore and that he really wasn't so interested. His mindset now was focus on lacrosse and he would rather spend that time playing lacrosse instead (P7).

Thus, it is apparent that specialization in the sport of hockey can result in athlete burnout as participant 7 notes above that he witnesses other kids lose interest in the sport and the novelty that typically precedes a season. He further provides an example from his own experience when he states that his child wasn't enthusiastic when participating in spring hockey tournaments, which take place beyond the traditional 8-month season. Parallel to participant 7, participant 8 provides insight into his son's experience and his observations:

So, he's very, very motivated. And for the first time...we did the winter season last year into the spring season. We took on a few too many tournaments and for the first time in his five or six years of playing hockey he was sort of done with it by mid-June. We signed him up for another tournament in Montreal but decided to cancel it...And a lot of it is the mental part. Like you're seeing kids by mid-August, late August when tryouts come around who have been going at it year-round, all summer just to get on a team and they're fried (P8).

Thus, observations from participant 8 further demonstrate burnout as a characteristic that transpires as a result of specialization. Similar findings were also revealed when speaking with

participant 15. When asked if she thinks sports specialization provides children with increased enjoyment versus playing multiple sports, she replied:

In my own experience, I think that...at this age kids need change and they need a break. And I don't necessarily think that kids in hockey need to be away from the ice, but I think they need to be away from the game. So, when my son finishes hockey in March, he then goes into the spring season and I can tell by the end of the spring season that he just needs a break. He needs a break physically, craves being outside. He still loves working on his skills, but I think that his passion comes back in the fall after he's had a bit of a break from the game (P15).

Accordingly, participant 15 notes that in her experience, her child also needs to break from the game as it allows him the opportunity to pursue avenues unrelated to hockey which reinforces his passion for the game come fall. It is important to note that she states kids need to break from the *game*, not only the ice. While the findings in this section may not be indicative of the entire population, they yet highlight that the sport of hockey beyond the 8-month season can result in emotional and physical exhaustion and sport devaluation, even at the peewee level.

Physical Effects from Diversification.

Positive Physical Literacy. In contrast to specialization, participants noted the constructive effects that diversification entertains in the overall development of a child. Most notably, the opportunity to develop a greater breadth of skills that are transferable to the sport of hockey which ultimately supplements their development. The following quote exemplifies an experience from an observing parent:

But let me give you an example, we just saw something, it's kind of related where there was one particular player on this team that...many of the same kids from last year that played on the major atom AA team are now on the minor peewee AA team and this one particular kid did not play spring hockey and his dad said we've had enough and he's had enough and they came back this year and they're playing it and their kid is so far the best player on the team. You know what I mean? Sit him down after six months, let him rest, go do other things and they come back and they're even better. Back to the point in the other question, which way are you better? And my answer was diversification. And that's a living breathing example of diversification (P9).

Participant 9 notes that after taking a break from hockey and diversifying their sport participation in the off-season, the child returned the following season to become the best player on his team. While it is unknown what transpired in the off-season that influenced the success the child, participants articulated characteristics such as physical literacy development through diversification as a source to which can advance skills related to hockey:

I think that diversification is an excellent way to achieve a very high level within a sport. I think especially at a young age there should be a high amount of...not pressure but a high amount of encouragement for kids to get into a whole bunch of different sports not just so they can find what they enjoy the most but also to try and find what they might be able to excel at and I think that...not cross training in the technical sense but exposing your body to a lot of different athletic movements will yield a better athlete overall. So being able

to participate in soccer, gymnastics, hockey and football is going to yield a better hockey player by virtue of them being able to expose the body to a lot of different athletic movements (P11).

Participant 11 verbalizes the benefits diversification can provide in the overall development of athletes. He notes that through diversification, athletes are capable of achieving a high level in their main sport as it allows a child to expose their body to various athletic movements which in turn yields a better overall athlete. In addition, participant 11 recognizes that a broad range of motor skills developed through diversification can provide a child with athleticism that may be used later on if the athlete chooses to specialize:

If I want my kid to be the best eleven-year-old hockey player that he can be then yes, I should have him doing supplemental instructions, skill specific instruction for more than the standard run of the season. But given that my goal is not to make him the best 11-year-old hockey player he can be, but the best hockey player he can be, then I do try and be prudent about what I put him into and what I expose him to in a hockey context so that he can get the variety of movements that he needs and also not be so focused on hockey as it becomes a burden (P11).

Similarly, participant 5 notes the existence of transferable skills and the importance of physical literacy in developing an athlete for the long-term:

Most of these kids that end up playing in higher competitive level sports, they are probably going to have transferable skills at some level. And so, why not kind of get them involved in soccer? Why not get them involved in track and

field? Or in baseball or whatever the sport actually might be. Again, to me, the data is telling you that the more that you can kind of diversify and not focus just in on like the muscles that allow you to skate versus the muscles that allow you to just be a really good athlete, that's actually going to help you over the longer term. And that...these kids are still developing and still figuring out how their bodies are working and stuff so they need the time to allow their bodies to develop in a much more appropriate way (P5).

While he notes that diversified sport participation provides athletes with a greater opportunity to enhance their physical literacy over long-term, participant 5 further notes that it allows the athlete to develop more appropriately. Similar findings were found when participant 8 shared an experience from a National Hockey League player he befriended:

And at the end of the hockey season, which back then was March, he would hang up his hockey skates and he would go play baseball for five months. And in September he put his skates back on. And he was the number one overall draft pick in the NHL in his year. So, it's a good lesson for everybody. And what he's finding is that when they go to do athletic testing in the NHL, there are a lot of guys who cannot throw or catch a ball. Like, they're so sports specific that they can't do basic physical sports activities because all they've been trained to do is crazy hockey moves. And you'll see even in baseball, which is hardly even a sport, the stuff my kid learns from you know the pressure of being on the mound. It's a very individual sport. I mean on a team,

but it's really individual. The stuff he learns there totally complements his hockey (P8).

In addition to the NHL player's experience, participant 8 shares an experience of his son, who received transferable skills in the game of baseball which complement his hockey skills. This was found in other interviews as well: "I understand the skills that my son has learned in baseball and hardball that have helped make him a better athlete in hockey. And a lot of people wouldn't understand that crossover" (P4); "Like, my son plays lacrosse in the summer. He plays goalie in hockey and is a lacrosse player and gets to do different exercises and different movements and I think it's good for his development" (P13); "Such as like hockey and lacrosse. I find it helps develop my kid's hand eye coordination playing lacrosse and their endurance and their...yeah" (P14). Finally:

Oh, I would play as many sports you possibly can. What your parents can take you to. The more sports the better. Obviously, everything helps. Say you have one sport that you love, say its hockey. But in the summer, you like to play lacrosse and then you play soccer or some golf or some baseball.

Like...whatever you can do and whatever you can fit into the schedule, I would say do whatever you can because it's really awesome to get every different sport in there because you have no idea what you're good at until you do it. So, some kids just jump out at it. But if you're playing one sport, obviously you can be very good at it, but we've never had a chance to do anything else so, I 100 percent agree with playing as many sports as possible. To get better at and to even help your main sport at (P10).

Participant 10 notes the importance of diversification to allow a child the opportunity to discover their talents and what they excel at. Ultimately, the insight of the above participants acknowledges the benefit of diversifying sport participation as it provides a greater opportunity to develop physical literacy in a child in comparison to one who specializes.

Mental Effects from Diversification

Motivation. Contrary to specialization and burnout, diversification provides a child the opportunity to sustain their motivation in a given sport, as time away from the game offers a child the opportunity to miss the game and experience the feeling of a “new season” every year. While the effect of specializing on the mental well-being of a child was discussed earlier in the chapter, the following will discuss the contrary effect and the benefits diversification can provide to the mental well-being of a child. To begin, participant 15 notes the importance of breaking from the game:

I think it comes back to your question about education. I think parents...like it's one thing to have an opinion and it's one thing to know what the research says. And you read about how specialization too early promotes injuries and promotes burnout. It promotes overall loss of love for the game where if you give them the opportunity to play different sports, it renews their love of the one sport because by the time you get back to it, and I'm thinking the summer off from hockey, not necessarily from the ice, but from the game, I think that that excitement comes back. At least at this age (P15).

Participant 15 notes the importance of diversification to sustain motivation in a given sport. By diversifying their sport participation, a child avoids the prospect of mental staleness

and exhaustion common with burnout. It further provides the child with a greater appreciation for their sport as they have time to miss them, as referenced by participant 3:

I think it's important for them to dabble. I think it's important for them to spread their focus around, because then I think they grow a greater appreciation for the sports that they do focus in on. I mean, one of the very first things that my son said toward the end of the hockey season was that he couldn't wait until soccer starts and I can guarantee you that by the time August comes around he's going to be saying I can't wait to get back into the rink again. And you know, walking into the rink and smelling the smell of the rink or getting onto the turf for the first time during the outdoor season and feeling the grass under those cleats, like he appreciates those experiences more because he has time to miss them (P3).

Participant 3 articulates the satisfaction her son gets from playing multiple sports and the appreciation that comes with it. She further illustrates the motivation her son experiences when returning to the sport. Similarly, participant 14 provides insight concerning her child:

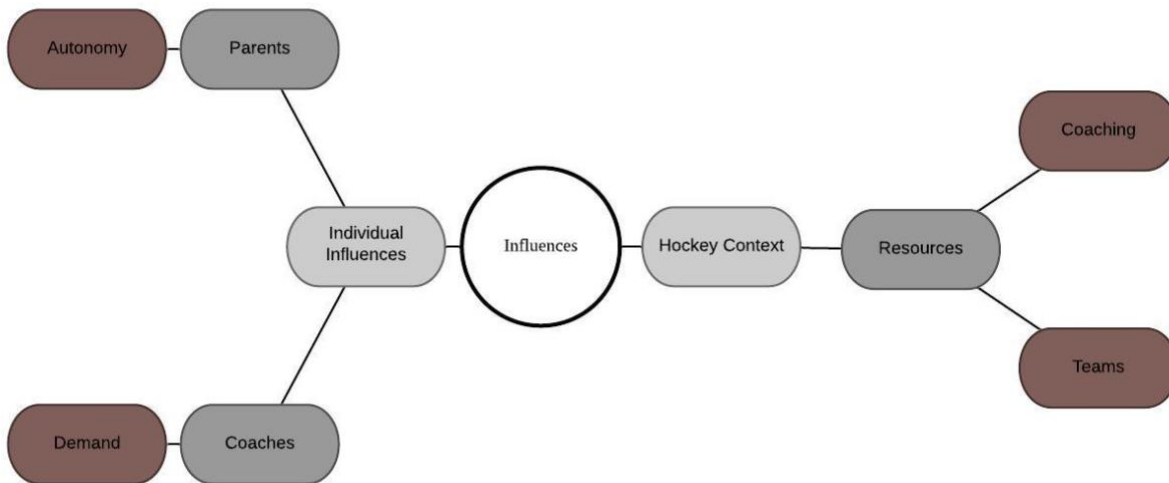
Coming from experience, my son has played one year of hockey all year round and compared to the year after where we cut him out for the spring and summer, he actually looked forward and was excited to get back on the ice in September. Whereas the previous year it was just like, "meh, here we go" and he just lost interest (P14).

Thus, it is apparent that diversification can provide a child with the motivation to continue their participation in a given sport. By diversifying sport participation, youth athletes can experience the enthusiasm that precedes a new season, every year.

Factors Influencing Specialization

The following section explores the various factors that influence and facilitate specialization among Peewee aged hockey players from the perspective of the parent. Analyses of the data revealed two overarching themes that embody three factors that influence specialization. *Individual Influences* underlines two significant groups of individuals who influence specialization; (1) Parents and (2) Coaches, whereas *Hockey Context* illustrates an additional factor within the large-scale structure of sport that influences specialization; (3) Resources (see Figure 3).

Figure 3: *Factors Influencing Specialization*



Individual Influences

Interview data revealed that within the hockey context, there exist two groups of individuals who have been recognized to influence early specialization: parents and coaches. The

following section will highlight the influences that both parents and coaches entertain. It will demonstrate how parents influence specialization by way of decision autonomy for extrinsic rewards and for their child to not fall behind. Additionally, it will exhibit that coaches' influence specialization by employing demand to achieve future success.

Parents. Participants remarked parents as a leading cause of specialization within the sport of hockey. Interview data revealed that it is the parent who ultimately endorses participation beyond the traditional 8-month season through their decision-making process. The following quote provides further insight:

I think it is mostly parents that actually do it (influence specialization). Like, my perspective is that the parents that don't do it largely feel as though they are jeopardizing their kid's development over time and it takes a lot of courage to stand up to that. It just frankly does cause the kids, like I said, the kids, at least the kids that I'm around, the age that I'm with them, I just don't think they care one way or the other as long as they're doing stuff...but it's the parents that fundamentally drive this without the input of their kids (P5).

Autonomy. The purpose of highlighting the aforementioned quotes is to exhibit the reality that children do not possess the autonomy to make their own decisions. Rather, parents make decisions on the child's behalf for what they believe is best for their child. While it may seem that the parent is simply providing an opportunity for their child to succeed, there are yet additional motives for the parent. According to participant 14, one reason why parents influence specialization is due to the extrinsic rewards they hope their child will attain:

The parents want it more. They want their kids to be pro's. I find the parents are pushing for the kids when the kids just might want to take a break but the parents are just, "No, you're doing this, no you're doing this" (P14).

Similar findings are presented from participant 3 and 5:

It's the competition for, how do I say this, it's the competition that parents feel the kids have to attain a certain level of excellence in order to achieve, maybe it be a scholarship, maybe it be a path to the "O", or the NHL contract. I still think it's because of that (P3).

They want their kids to potentially get that chance for you know to play Junior, to get a U.S. scholarship, to make it to the pros or whatever, whatever the objective might be (P5).

The above quotes highlight that extrinsic rewards associated with hockey influence a parent to encourage specialization. In addition to achieving success beyond the minor level, participant 7 provides insight into the opportunity's parent's push for within the youth context by providing an example of his own:

There's certainly some select children or parents I guess who have those pro aspirations for their children, that are pushing their children to play 11 to 12 months a year... There are high level teams from Toronto that'll draw maybe a few players from the Ottawa Valley and so the higher-level players are competing with each other to try and get one of those three slots on that team even though their spot on the AA team is well secure, that's not necessarily

what they're concerned with. They're always concerned with that higher-level team...So, in my son's case...we played AA the last three years, but this year is when the AAA division starts, but there's only five AAA teams within the Ottawa or Eastern Ontario league. It's a higher level and more select group. And so, you know I would say his position... his chances to remain on the AA team are very good. I don't think there's much risk of losing a spot there. But now that there's AAA which he's interested in...there's the competition to be one of the 15 players to make AAA. So, yeah. I think the pressure is...the more times he puts in on the ice the better chance he's going to have to secure one of those 15 spots (P7).

Participant 7 indicates that parents today are continuously aiming to have their child reach that “next step”. While the extrinsic motivations mentioned above constitute the trend of early specialization, the fear of having a child fall behind is an additional motive for which parents encourage participation in hockey that exceeds the 8-month threshold:

Oh, if your kid doesn't play spring hockey or summer hockey he's going to be left behind...There's also a lot of fearmongering. A lot of fearmongering with regards to the various sports you know if you don't play this weekend you might be missing out kind of thing, where you know in reality if you miss a weekend who cares (P2).

Participant 2 notes the existence of fearmongering in the hockey context. As a result, parents feel they need to continue their participation for the sake of maintaining skills. Further interview data provides additional insight:

So, I find that with my three children, obviously parents talk a lot at the rink and parents are often persuaded to do things because another parent says, “Oh, we're doing this and it's great and it's really helping my kid” which then a lot of times causes other parents to think I should do that for my kid. So, keeping up with the Joneses I think is a big driver of specialization in my opinion (P4).

I think people are aware about it and I don't want to judge anybody but they're aware that it's probably beneficial for their children to do something outside of hockey but at the end of the day in competitive sport anyway the pressure can get to people and they just keeping ploughing through twelve months a year (P6).

And finally, “They see what the Joneses are doing and they you know, they try to keep up sort of thing” (P6); “I don't know. It's kind of like, fear of missing out...peer pressure. Like, everybody else doing that. So, you got to do it” (P8); and “Well I think it's different for every kid. Monkey see, monkey do is a big part of it” (P4). Thus, it is apparent that there exists a belief amongst parents in the hockey context that a child must continue participation in the sport to maintain their skills and keep pace with “the pack”. Additionally, there exist aspirations to achieve greater levels within the minor context and further, into levels that are yet to come and are years away for Peewee aged hockey players.

Coaches. While it is ultimately the parent who makes the decision to specialize on behalf of their child, they often do so grounded on recommendations advanced by associated coaching staff. Interview data revealed coaches as an additional factor to which influence specialization in

minor hockey players. Findings indicate that the demand placed on parents by coaching staff encourages participation that exceeds the 8-month season.

Demand. Interview findings illustrate that coaches similarly push for supplemental instruction through demand, as they often influence a child to maintain and further develop their skills beyond the 8-month season. Below, participant 2 highlights how coaches attempt to “sell the dream”:

Well I know for a fact that kids are...They're basically being told that you know you're not doing this, you're going to miss the boat. You won't make the OHL, you won't make the next level. They're selling the dream that if you do this you will get this. Where in reality, no matter how much you do, there is only a percentage of a percent that are making it. So, but they're still...I know I'm not a hockey guy but I'm quickly figuring out that they're selling you the dream and that you have to do this and you got to do that. I understand that there are certain situations where that'd be a good opportunity, that'd be a good team to get on and you have to do stuff but to tell people you know if you don't do this power skating, and if you don't do this, and if you don't do any off-ice training you're going to be left behind. Like all other and just being a kid and playing and going swimming at the cottage and playing in the bush that's off-ice training too (P2).

Participant 2 asserts that coaches advocate for specialization, stating that for their child to remain “on the boat” or make it to the “next level”, they must maintain participation in the sport. Similar findings were proclaimed by participant 4 when he stated:

I think a lot of it is pushed by coaches and co-parents and the one thing that I think that resonates with me that I hear a lot of is that the coach goes to the parent and says “Well, Johnny's doing really well, but you realize that if he doesn't do the extras he's going to be on the bubble next year, why don't you put him in this program, why don't you put him in that program” (P4).

Using “Johnny” as an example, participant 4 exhibits a tactic used by coaches that presses a parent's hand to pursue year-round participation. He notes that coaches implant fear in parents. Stating that should they decide to take a break from hockey, they risk losing the chance of playing on the team the following season. Further, he proclaims that coaches will go as far as recommending which programs they should partake in. One reason for this could be that the coach has an affiliation to said program, and can benefit from their participation, although that is a hypothesis.

I think that...something that I find unique to hockey, especially when it's done at a high level for kids in Canada, is the coaches are volunteers. My sons participate in competitive gymnastics, competitive soccer, and in each of those circumstances the coach is a paid position and that results in a coach who is measured when he considers what's enough, and who he's dealing with, and what kids can do, and what they should do, and what the expectations are. I find when you have parent volunteers, it's usually...I hate to use the word fanatical. But it's the most deeply committed parents who are the ones volunteering to be coaches and assistant coaches, and run the league, and help at an administrative level. And I think at times the perspective of those parents

can be skewed off of what is reasonable and healthy for the kids. So, you end up in a circumstance where the highest level of competitive play and so, for my son at 11 locally is AA hockey, you can have a very, very significant ice time commitment which I don't necessarily think is the best interest to develop the very best hockey player. But the people who are running it have that perspective that's the way it goes...I think year-round hockey is becoming too prevalent and isn't healthy. But again, that's part of an expectation from the coaches of the level that the kids played where they encourage them to do a lot of summer work as well (P11).

As it is supposed by participant 11 that coaches' base decisions on their beliefs, he shares his thoughts on the need for parents and organizers to encourage time away from the game. Corresponding with what has been mentioned previously in this section, he notes that coaches have heightened expectations for their players which may not be in the best interest of the players, but rather what they perceive to be best.

Hockey Context

Within the hockey context, there are also factors that influence specialization in minor hockey players. Most notably, the number of resources available to hockey players within Eastern Ontario plays a significant role in the inclination of year-round participation in hockey. To provide an example, listed below are the hockey development tools available to those within the Eastern Ontario district:

- Hockey specific training centers that feature an array of fitness equipment including artificial ice, a skating treadmill and turf track.

- Hockey specific private high schools that boast the same features as the training center, with the addition of classes and mandated games and practices.
- Various hockey camps throughout the year from multiple companies and businesses.
- Development clinics with focus' on stick handling, power skating, goaltending, and shooting.
- Spring representative and recreational hockey.
- Summer representative and recreational hockey.

Resources. The hockey development tools listed above indicate the number of resources available to those within the Eastern Ontario context. Further analyses revealed two overarching avenues to which minor hockey players engage in that fosters specialization; coaching and supplemental teams.

Coaching. Interview data revealed coaching as a principal source for influencing specialization. It is important to note that this differs from *coaches* which were previously discussed in this chapter. *Coaches* focuses on the coaches of the athlete's primary team in particular, whereas *coaching* refers to supplementary instruction available to those outside of their main team. The following quote articulates the extent of the matter by illustrating the numerous amounts of opportunities available to those who seek supplementary instruction:

So nothing is really jumping out at me like specific as far as like pushing specialization is the way to go, but here's what I would say just being involved in the hockey scene as a parent over the course of the last number of years is, you need only look basically at the surrounding environment every time that you walk into the rink that you will see sports schools cropping up, you will

see specialty programs that will focus on specific skills, development and enhancement. You will see a couple of professional teams at various levels putting out skills camps capitalizing off of their brand and that sort of thing. And as well you see like these specialty areas where I guess programs end up being centralized and they just develop like really highly specialized programming around it. So, it's a bit of a self-perpetuating situation where they end up everywhere you look whether it's in a school or sorry in a hockey rink or in and around hockey rink. There's always this kind of advertising that kind of pushes you know the next round of development for you or for your kid (P5).

Participant 5 notes that within the hockey context, there exists numerous coaching to which a child can partake in for skill development and enhancement. According to participant 5, these programs include highly specialized programming tailored to each player. He goes on to say that a parent need not go looking for said resources, but that they are readily available to them within the context. Similarly, participant 9 notes the amount she is exposed to marketing geared towards said coaching instruction:

Well you do see at the competitive level especially you get...I get emails daily, daily. Maybe not every day, but at least every other day about a tournament or some different type of focus of specialization within hockey on a special skill: stick handling, passing in a camp, or a competitive tournament somewhere in the U.S. or Canada that they want my son Dylan to attend or be part of and it's

like...it just comes at you all the time. And I think personally I think its way over the top (P9).

Participant 9 notes that she receives emails almost daily to participate in various development camps that foster specialization. Additional findings from participant 13 and 11 further acknowledge the amount of resources available for supplemental instruction within the sport:

No. Because it's always available. If you want your son to play hockey there's always some where you can play. Doesn't matter what time what month. There's always something available...So, they think "I'm not going to put him in soccer, he can do another hockey camp" or "I'm not going to do that because he can do this" you know? Hockey schools, hockey camps, there's everything available to you at all times (P13).

There's obviously a number of camps that are available throughout the season and then twelve months of the year. There's a variety of companies who have facilities dedicated specifically for hockey and they promote their services not just in a general Hockey sense but for skill specific items (P11).

Teams. In addition to coaching, the number of supplemental teams in the environment provides further insight into the resources available to those within the context.

A little bit. A little bit in that you hear parents' sort of talking about it becoming more and more about not necessarily focus on the specialization, but more pressures and opportunities to just continue playing around. So, you know

spring hockey in particular has kind of really taken off from what I've seen in the last five or more years. And so, and then this spring hockey has really even in that time frame from what I've witnessed expanded to... pretty well right to the end of July for the most part and our competitive hockey tryouts really start in mid-August. So, what I see is sort of a bit of a growing trend particularly amongst more of the higher end players on our teams, that they are playing hockey right into...well into July (P7).

Participant 7 notes that children have the opportunity to play in a team environment until the end of July. This marks 11 months of total hockey played by an individual in a given year, which is 3 months beyond the 8-month threshold. In addition to a variety of opportunities to join a supplemental team within one's surroundings, participant 7 notes the opportunity to play beyond one's residence:

There seems to be...there's really no limit to the amount of commitments...if your child has got the ability there's opportunities there for them to play year-round across North America. You know we had a child on our team this past year who was given opportunities to go to a tournament in Minnesota that's complete expenses paid for the child and for the parent to fly them there and just to participate in a weekend spring tournament on the elite level. And it seems to be becoming more and more commonplace that they're getting those kinds of...these elite level kids are getting those kinds of offers. They had another offer to go to New York City and another one to Las Vegas which I think both of them they declined, but some of these elite level teams have

money, they have sponsorship money and they are certainly willing to bring kids from just about anywhere If it means producing that sort of a championship caliber team (P7).

As participant 7 notes above, there is no limit to the number of commitments an 11-year-old hockey player can have. He states that teams are willing to go as far as paying the expenses for a child and their parent to attend weekend hockey tournaments thousands of miles from their residence. Additionally, he states that the trend is becoming more commonplace for developing a championship-caliber team, which could be considered alarming. Thus, it is evident that there exists an abundance of resources available to those within the hockey context, and parents need not go looking for said resources, as they are often marketed towards them within the environment, whether it be by word of mouth or other mediums.

Chapter 5: Discussion

The purpose of this study was to uncover practices around specialization in Minor Peewee AA ice hockey players in Eastern Ontario. Additionally, this study sought to understand the rates of specialization as well as the parental perspective of specialization versus diversification relative to their child's participation in the sport of hockey. Finally, the study worked towards uncovering factors that influence a child to specialize in the sport. The previous chapter summarized the data collected from the online survey and 15 semi-structured interviews conducted amongst parents of Minor Peewee AA hockey players. Together, the information assists in highlighting the current rate of specialization in Eastern Ontario, the parental perspectives on specialization versus diversification, and the factors that influence specialization in today's youth.

In this chapter, a discussion is presented regarding the study findings presented in chapter 4, which are embedded further within the specific case context of Eastern Ontario's youth hockey landscape. Notably, rates of specialization, the parental perception of specialization versus diversification, the factors influencing early specialization in minor hockey and Hockey Canada's disposition are central to the discourse. Concomitantly, both the extant literature and participant's further raw data (expressed through quotes) are provided to enable a deeper understanding of the phenomenon of interest.

Rates of Specialization

Survey findings divulge that minor hockey players are specializing at an alarming rate as 87% of survey participants ($n = 114$) were deemed specialized. As a result, this highlights that there is an overall acceptance of the trend of specialization within the context. Survey data revealed that 77% of participants considered hockey more important than other sports, which

underlines the elevated level of commitment toward the sport. In addition, data further revealed that 56% of survey participants indicated that their child trains more than 75% of the time (8 months or > in a year) exclusively in hockey. It is plausible however that the percentage of exclusive hockey players are higher than the reported 56%, as participants may have misinterpreted the question, “train more than 75% of the time exclusively in hockey”. The skewed result may be due to the fact that often participants cited school activities as an outlet to which a child pursues additional sporting opportunities, albeit the child continues to train exclusively in hockey and not truly discontinuing their hockey exclusive training. Furthermore, the traditional hockey season as established by Hockey Canada takes place over an 8-month period; participants noted an extensive financial and time commitment to hockey during this time. This is evident when 82% of survey participants noted that hockey requires extensive travel and 76% noted participation requires training more than 8 months a year. Thus, it can be assumed that the results presented from the question, “train more than 75% of the time exclusively in hockey?” are not an accurate representation of the phenomena but rather a misunderstanding of the question being asked. Nevertheless, the results revealed a substantial proclivity to specialization in the environment.

Parent Perception of Specialization versus Diversification

Analysis of the results presented in Chapter 4 of the parent perception of specialization versus diversification revealed an inclination towards diversifying sport participation. Survey participants articulated that diversified sport participation provides their child with the opportunity to develop a wide range of skills and the opportunity to break from the sport. More specifically, participants referenced *positive physical literacy* as the foremost characteristic to which youth athletes can benefit from through diversified sport participation. Further,

participants voiced the role diversification plays in the continued *motivation* of their child in their main sport.

In the primary, results revealed a strong favor towards diversified sport participation as it can allow for transferable skills to a child's main sport. For example, participant 2 notes:

Sport diversification is basically playing a multitude of different sports which expose you to different situations, parameters, movements, like basically coordination, aptitudes to just different environments. Every sport, from reading and from what I believe, is that every sport can bring something to the table for your sport of choice. I was a basketball player, I played all the way up into university and I never followed hockey until I had my son, and I see a lot of stuff from basketball that's very relatable to hockey, so I'm a firm believer that there's huge advantages to doing different sports, whether it's in the structured or unstructured environment to help your sport or to be a more efficient player (P2).

While participant 2 notes the opportunity to develop a wide range of skills through diversified sport participation, research has shown this to be true as diversification has been linked to increased overall motor skill development (Jayanthi et al., 2013; Kaleth & Mikesky, 2010; Malina, 2010; Merkel, 2013; Mostafavifar et al., 2013; Vealey & Chase, 2016; Wall & Côté, 2007). Additional findings by Kaleth and Mikesky (2010) further support the notion as “there is no direct research evidence supporting the physiological benefits of early sport specialization over those of a more diversified sport and physical activity approach” (p. 31). The authors argue that diversification can “improve skills that are important for success in multiple sports, result in

a well-rounded athlete, and increase the likelihood of achieving lifelong physical fitness and enjoyment of physical activity” (p. 32). In addition to motor development, parents further give preference to diversification as it sustains and cultivates a child’s motivation to continue participation in the sport of hockey as they have time to break from the sport:

I think parents...like it's one thing to have an opinion and it's one thing to know what the research says. And like you read about how specialization too early promotes injuries and promotes burnout. It promotes just loss of love for the game where if you give them, in my opinion, if you give them the opportunity to play different sports, you know it just kind of renews their love of the one sport because by the time you get back to it, and I'm thinking the summer off from hockey, not necessarily from the ice, but from the game, I think that that excitement comes back. At least at this age (P15).

To date, there have been no studies linking diversification to sport dropout. This can be attributed to the fact that diversification tends to provide a more enjoyable athletic experience for a child in comparison to specialization (Fraser-Thomas, Côté, & Deakin, 2005).

In contrast to diversification, interview participants noted the damaging effects specialization entails in the development of their child. Participants noted *negative physical literacy* as a resulting characteristic of the developmental pathway and articulated its resulting effects:

I think that we can kind of assume that as you approach that eight-month barrier you’re into the non-traditional season of hockey. They’re two things that happen. One is I think the kid becomes incredibly tired and their

development slows down quite considerably, and then the second thing that happens is there's absolutely no focus that's put on practicing actual skills development. So, I don't believe that if you're putting in more than eight months a year, you're actually increasing your chances for long term success (P5).

While participant 5 shares his insight into the effect's specialization can have on a youth hockey player such as hindered development, findings from additional participants further elaborate on the corollary's repetitiveness can have on a participating child. This is exhibited when participant 12 states:

I think just being in one sport...it makes the kids...I wouldn't say necessarily tired, but it's doing the same thing over and over, the same muscles and the same program. And they don't get a chance to discover new things (P12).

To support participant 12's statement, Black et al (2019) found that a child who participates in one sport will only work certain muscle groups, therefore constantly placing their body through the same movement patterns and demand. As a result, the overuse of muscles can affect the longevity of one's career and even sideline them from future participation, as high degrees of sport specialization have been linked to higher rates of overuse injuries (Jayanthi, Post, Laury & Fabricant, 2019).

Participants further articulated the mental effects that can transpire as a result of specialized sport participation. Participants noted *burnout*, a condition characterized by emotional and physical exhaustion, sport devaluation, and reduced personal accomplishment (Raedeke, 1997), as a characteristic that can hinder the progress and overall well-being of the

child. Results presented in chapter 4 revealed both primary and secondary examples of such. For example, when speaking from his own experience as a parent whose child specialized in hockey, participant 7 notes:

I know come May he...with spring hockey...I think the last tournament he did this year of spring hockey, he went, and he did it but I'll say he wasn't that enthusiastic about going there. It was the last tournament and I think it seemed he felt like it was a little bit of a chore and that he really wasn't so interested (P7).

Thus, it is apparent that specialization can affect the mental well-being of a participating child as specialization has been linked to reduced enjoyment and increased chance of burnout (Soberlak & Côté, 2003; Wall & Côté, 2007). While the participants example above highlights a firsthand experience amidst their child's experience specializing in the sport of hockey, supplementary results exhibit experiences from the parent as an observer in the environment when participant 8 states, "You're seeing kids by mid-August, late August when tryouts come around, who have been going at it year-round, all summer just to get on a team, and they're fried" (P8). Therefore, this highlights the reality that burnout is present in the environment and affecting the overall well-being of the child. The purpose of underlining the quotes in this section is to gain a better understanding of the parent perception of specialization concerning their child's participation in the sport of hockey. It can be concluded that the results show there is no evidence in the parents supporting specialization in the development of youth, particularly in minor hockey players.

While interview participants revealed a strong favor towards diversification, it can be presumed that this population includes the small percentage of hockey parents who are troubled

by the phenomena and are pro-diversification. To reiterate, interview participation was voluntary, and participants were obliged to contact myself in order to participate in the qualitative segment of the study. Thus, it is believed that these participants had pre-existing knowledge of the phenomena which may have influenced their motivation to partake in the study. As a result, it can be assumed that the survey results are from parents who recognize specialization and who are merely providing insight. As such, it is important to note the key findings from the data. First, participants noted the positive effects as a result of diversification. This includes the opportunity to develop the physical literacy of the child in a constructive and safe matter. Additionally, parents note greater levels of continued motivation in a child as a result of sport diversification. On the contrary, participants noted the perilous effects associated specialization; negative physical literacy and burnout, which are an exact contrast to the participants' perception of diversification. These findings fall in line with that of previous research in the field, therefore highlighting that the position the participants entertain are of those who presumably recognise the phenomena.

Factors Influencing Specialization

Findings from the data revealed three prominent influences that contribute to specialization in minor hockey players: parents, coaches, and resources. In the primary, data revealed parents as a contributing factor in influencing specialization in minor hockey players. To elaborate further, data revealed that parents influence specialization in their child by way of their decision-making process:

I think it is mostly parents that actually do it (influence specialization)... the kids, at least the kids that I'm around, the age that I'm with them, I just don't

think they care one way or the other as long as they're doing stuff...but it's the parents that fundamentally drive this without the input of their kids (P5).

Above, participant 5 notes the lack of autonomy a child entertains regarding their participation in the sport of hockey. Subsequently, the results indicate various motives as to why parents influence specialization without the input of their child. First, the potential of achieving extrinsic rewards was highlighted by interview participants: "They want their kids to potentially get that chance for you know to play Junior, to get a U.S. scholarship, to make it to the pros or whatever, whatever the objective might be" (P5); "Parents feel the kids have to attain a certain level of excellence in order to achieve, maybe it be a scholarship, maybe it be a path to the "O", or the NHL contract" (P3). However, the possibility of achieving a status of such nature is proven improbable as research has shown only 0.0057 percent of all kids playing hockey will end up playing one game in the NHL (MacQueen, 2013). In addition to the potential extrinsic rewards parents seek for their child, results show that parents further influence specialization for the prospect of their child achieving a greater status within their current environment:

There are high-level teams from Toronto that'll draw maybe a few players from the Ottawa Valley and so the higher-level players are competing with each other to try and get one of those three slots on that team. Even though their spot on the AA team is well secure, that's not necessarily what they're concerned with. They're always concerned with that higher-level team (P7).

While participant 7 notes above the interest parents entertain in their child participating on a higher-level team, data revealed additional motives as to why parents endorse specialization in the sport. In particular, the fear of having their child fall behind:

So, I find that with my three children, obviously parents talk a lot at the rink and parents are often persuaded to do things because another parent says, “Oh, we're doing this and it's great and it's really helping my kid” which then a lot of times causes other parents to think I should do that for my kid. So, keeping up with the Joneses I think is a big driver of specialization in my opinion (P4).

As participant 4 articulates above, parents are under the impression that their child needs to maintain participation in the sport of hockey to “keep up with the Joneses”. Malina (2010) reinforces this conception by affirming that one of the main causes for sport specialization is the perception by parents that focusing on a single sport will allow them to get ahead of, or at least keep up with their peers. However, children can nonetheless diversify their sport participation and maintain their status within their primary sport (Baker, Côté, & Abernethy, 2003; Baker, Côté, & Deakin, 2005).

In addition to parents, coaches are yet another factor that influence specialization in minor hockey players. As it was previously mentioned, it is often the parent who decides to specialize on behalf of the child. However, at times they do so as a result of the recommendations advanced by the coaching staff. While it is noted that coaches use the opportunity to pursue higher levels as a motive to influence supplemental instruction, they further encourage parents to do so by instilling fear, as they allege that their child’s development can be hindered as a result, which could put their position on the team the following year in jeopardy. However, we know this to be false, as research has shown that athletes who had diversified sport backgrounds and engaged in deliberate play during childhood can still attain an elite level in sport (Baker, Côté, & Abernethy, 2003; Baker, Côté, & Deakin, 2005). It is clear that the use of fearmongering is an additional tactic coaches use to influence a child to specialize

in the sport of hockey. It can be presumed that coaches do so to increase their reputation as a coach in their pursuit of success.

Finally, the number of resources available to those within the hockey context is the last factor the data identified as an influence of specialization in minor hockey players. In particular, the amount of *coaching* and *supplemental teams* available. In the primary, data revealed that coaching, which refers to supplementary instruction available to those outside of their main team, as a contributing factor leading to specialization as there exist numerous opportunities within the environment to receive additional instruction. This is displayed when participant 5 noted:

You need only look basically at the surrounding environment every time that you walk into the rink that you will see sports schools cropping up, you will see specialty programs that will focus on specific skills, development and enhancement. You will see a couple of professional teams at various levels being kind of putting out skills camps capitalizing off of their brand and that sort of thing. And as well you see like these specialty areas where I guess programs end up being centralized and they just develop like really highly specialized programming around it (P5).

It is apparent that there exists a plethora of development tools available to those within the environment. Often, parents see fit that such programs will develop their child at an advanced rate to achieve elite status. In addition to coaching, the number of supplemental teams available to those within the context further contributes to the phenomena. Matz (2014) claims that the possibilities for youth athletes to specialize are endless, such that children have the opportunity

to play on local club teams, travel teams, interscholastic competitions, and even off-season training programs all for just a single sport, creating a year-round demand for constant training.

This is exhibited in the results when participant 7 states:

So, you know spring hockey in particular is kind of really taken off from what I've seen in the last five or more years. And so, and then this spring hockey has really even in that time frame from what I've witnessed expanded to...pretty well right to the end of July for the most part and our competitive hockey tryouts really start in mid-August. So, what I see is sort of a bit of a growing trend particularly amongst more of the higher end players on our teams, that they are playing hockey right into...well into July (P7).

While he notes above the surge of participation in supplemental teams, participant 7 further remarks on the escalation of the season's duration. As a result, he notes that kids end up playing hockey for a total of 11 months out of the year, which is 3 months in addition to the recommended 8 months advanced by Hockey Canada.

Hockey Canada Disposition

It has been recognized that hockey plays a critical role in defining Canada's national identity, thus maintaining higher levels of participation at the youth level remain important for the Canadian hockey system. Further, the need for high participation numbers at the youth level additionally benefits the elite levels of the sport, as a larger pool of participants is likely to yield a greater number of elite players (Green, 2005). As there exists a tremendous amount of pressure for Hockey Canada to be the best in the world and maintain dominance, it is hard to overlook the potential a mass pool of participants can provide for the future of the sport in Canada. Today, the

sport of ice hockey is the fastest and most skilled it has ever been, and while Hockey Canada promotes fun and positive hockey experiences, the fact of the matter is that the competitiveness that surrounds the environment has become part of the cultural engine; to be the best, therefore overshadowing its mission to “Lead, Develop and Promote Positive Hockey Experiences”, but rather focusing on its vision to be “World Sport Leaders” (Hockey Canada, 2019).

Upon research of Hockey Canada’s sources of funds, inferences can be made as to why Hockey Canada places a heightened level on their elite successes over those at the grassroots level. As mentioned in their 2018-2019 Annual Report, Hockey Canada finances its operations, “primarily through national and international events, sponsorship, donations and government funding, as well as a number of other sources” (Hockey Canada, 2019). During the 2018-2019 hockey season, funding for Hockey Canada was listed as follows: 36% Business Development & Partnerships, 27% Insurance Premiums, 13% Funding Agencies, 5% Hockey Development, 5% National Teams, 5% Branch Assessments, 4% Events & Properties, 3% Grow the Game, 2% Interest Revenue. To elaborate further, Business Development and Partnership includes the likes of Esso, Nike, Telus, TSN, Air Canada, Bauer, Chevrolet, Canadian Tire, Tim Hortons and many more nationally and internationally recognized companies; whereas Funding Agencies include the Government of Canada, Sport Canada, Coach.ca and additional agencies. Thus, it is apparent that the majority of Hockey Canada’s funding comes from partners, whereas only 13% of funding comes from funding agencies. As a result, this places a great level of pressure on Hockey Canada to succeed on the world stage. Accordingly, it can be presumed that the heightened pressure placed on Hockey Canada to maintain their dominance and retain funding yearly attributes to the trend of specialization, as a greater emphasis is placed on elite development in the hockey context rather than long-term development.

In contrast to source of funds, Hockey Canada's fund allocation was listed as follows: 28% Administration, 21% National Teams, 21% Insurance Costs, 7% Events & Properties, 5% Hockey Development, 5% Technology, 4% Business Development & Partnerships, 4% Other, 3% Grow the Game, 2% Operations. Upon review of these numbers, it is evident that there is a greater emphasis placed on elite development as 21% of funding is expended on National Teams. In a video discussing the importance of multi-sport participation, Hockey Canada CEO Tom Renney was quoted saying, "We love hockey, we identify with it, but at the end of the day we need to do other things. We need to build a complete person, a diverse citizen that's not just married to hockey" (Strashin, 2018). However, with the exception of a joint public-service campaign with Baseball Canada, the Canadian Soccer Association and the Canadian Olympic Committee, Hockey Canada hasn't taking the initiative to endorse their recommendations and this is evident in their spending. As a result, this exhibits Hockey Canada's objective to maintain their position as world leaders in the sport, rather than "Lead, Develop and Promote Positive Hockey Experiences" as their mission statements reads.

Theoretical Contribution

The phenomena of early sport specialization continues to be practiced despite empirical evidence asserting it is superfluous and arguably ineffective in attaining elite success. Currently, there are no position statements in favor of early specialization in minor ice hockey. Nevertheless, parents continue to influence specialization concerning their child's participation in the sport. Consequently, the notion of transitioning to elite levels needs further consideration in terms of the important parental perspective and their role in understanding specialization versus diversification in sport.

During the retention/transition stage of Sotiriadou and colleagues (2008) sport development process, the academics articulate the importance of retaining participants and assisting them to obtain the required skills to achieve high standards of performance. However, the question then becomes at what cost and to what extent?

As found in this study, parents are influencing rates of specialization even at the potential detriment to the physical and mental wellness of their child. Sotiriadou et al (2008) noted that: “To achieve a successful retention/transition process, sport development stakeholders are involved through various strategies” (p. 262). Yet, as we have seen through this thesis, the environment for the sport can have plentiful opportunities that may propagate specialization and as such, this highlights the need for minor hockey organizations to foster a development process that advances participant’s overall wellness in a practical manner. Consequently, it becomes imperative to reflect on the “requirements and needs of the different stage of sport development” (Sotiriadou et al., 2008, p. 262). This is especially true with the sport of ice hockey in Canada.

The parental perspective in this study demonstrates that there is an additional responsibility of the coaches to facilitate the participant’s wellness during the retention/transition stage to ensure they are successful in their competition but also, that they are not feeling overly stressed by participation. In line with Sotiriadou et al’s (2008) recommendation then, “The intention of a well-established retention/transition process is to cater for all junior participants and provide the springboard for the pathways to the elite and successful performances” (p. 263). While Hockey Canada has recognized that this time is a significant period for development (Hockey Canada, 2013), the parents in this study noted that more nurturing and education is needed. Thus, both parents and coaches nurture the development of their players throughout this stage as it is here where players accelerate their development in preparation for the elite levels.

In his DMSP, Jean Côté (1999) perceives that it is during the sampling years where parents allow their child to, “Sample a wide range of enjoyable activities without focusing on intense training” (Côté, 1999 p. 401). Côté states that during this stage, the main emphasis is to have children experience fun and excitement through sport. Further, he asserts that it is during this time where children experiment, “with new or different means of doing things rather than attaining a goal” (Côté, 1999 p. 401). The children of the participants of this study fall into the sampling years of the DMSP. It is clear that parents do not provide for their children the opportunities Côté illustrates when he articulates the requisite for sampling multiple sports without focusing on intense training. In his study, Côté notes that the sampling years are an important stage of development, even for those who went on to become elite performers. Further, he concludes that active participation that is voluntary and pleasurable, provides immediate gratification, and includes intrinsic motivation is imperative during this stage (Côté, 1999). As Côté highlights the tools necessary for transition to the elite stages in a safe manner, it can be inferred that the results from this study highlight that parents do not adhere to the advancements presented by Côté. Thus, akin to the recommendations cited above, parents must recognize the role they entertain in influencing the development of their child as it is during the sampling years in particular where parents must assume a leadership role, “by initially getting their children interested in sport and allowing them to sample a wide range of enjoyable sporting activities” (Côté, 1999 p. 412). As this study shows, there is a need for educating parents around the importance of sampling different sports in particular.

Chapter 6: Conclusion

The purpose of this study was to uncover practices around specialization in Minor Peewee AA ice hockey players in Eastern Ontario. Additionally, this study sought to understand the rates of specialization as well as the parental perspective of specialization versus diversification relative to their child's participation in the sport of hockey. Last, the study worked towards uncovering factors that influence a child to specialize in the sport of hockey.

Based on the results of the study, it is apparent that youth hockey players are specializing at an alarming rate as 87% (n = 114) of survey participants identified their child as being an early specializer. However, results from the study exhibited a strong favour towards diversification in contrast to specialization as participants noted the advantageous effects of diversification and the deleterious effects of specialization. Through interview data, participants further shared their perceptions of the hockey context and the factors that influence specialization within. Parents, coaches, and the number of resources available were all shown to contribute to the phenomena of specialization.

While it is revealed that parents favor development by way of diversified sport participation, it can be assumed that they forgo such for a couple of reasons. First, parents entertain extrinsic rewards for their child, and though they may perceive diversification as an effective development tool, they yet continue to hold to the belief that specialization will provide their child with the best opportunity to achieve said rewards. One reason this may be is that coaches verbalize the need to continue participation in the sport for skills development. Thus, there needs to be educational awareness in the environment for both parents and coaches to highlight the fact that specialization is not necessary. Next, parents further influence specialization because they feel as though their child may fall behind the pack should they take a

break from the sport. Similarly, this can occur because coaches instill fear in the parent that their child will fall behind such that their position on the team the following year will be jeopardized. Thus, it is essential that coaches provide equal opportunity to all participants, and allow for children to break from the sport without repercussions.

While it is highlighted that parents and coaches are influential in fostering specialization in a child, the resources available to those in the context further provide the opportunity for specialization. The amount of coaching available and supplemental teams offered are catalysts of year-round participation. Thus, the private sector is capitalizing on hockey's popularity and the false positive belief held by parents that specialization is necessary to achieve success. To combat such, parents must be aware and accepting that children can attain an elite status through diversified sport participation. This provides the child the opportunity to develop safely and the best opportunity to continue their participation in the sport in an enthusiastic manner.

It is apparent that there exists pressure for Hockey Canada to maintain their dominance in the sport of Ice Hockey on the world stage. It can be presumed that there is a correlation between funding and success, as it is exhibited that the majority of Hockey Canada's funding derives from private partners, and that a hefty portion of their spending is expended on their national teams. While this may be a resulting effect of their vision to be "World Sports Leaders", it yet disregards their mission to "Lead, Develop and Promote Positive Hockey Experiences", as only 5% of spending is allocated to hockey development compared to the 21% allocated to the national teams. In summary, it is apparent that there is a disregard for participating members and their parents in the Canadian hockey environment and a strong emphasis on the goal of attaining success on the world stage.

Practical Recommendations

Based on the results of this study, three recommendations are proposed. First, parents need to be educated on the importance and benefits of diversification and the damaging effects associated with specialization. Studies show that parents play an instrumental role in their child's success (Cotton & Wiklund, 2011; Jeynes, 2007; Hughes, & Kwok, 2007; Rogers et al., 2009), and the results show that parents are a key driver in the trend of specialization, therefore, Hockey Canada must take measures to ensure that parents are aware of the resulting outcomes of their decisions. To ensure best practice, parents need to be educated yearly, before the commencement of each hockey season, on successful long-term development strategies and the importance of diversified sport participation. In doing so, parents will receive information that will advance their knowledge and consideration of each development pathway and the best practices for continued participation. In addition, parent education will allow for informed decision making. So, if they choose to continue specializing, they do so with an understanding of the potential resulting consequences. In addition to yearly education, the information should be made readily available to parents who seek to learn more about specialization and diversification. For example, academic research and studies can be made available through Hockey Canada's website. Currently, there exists a section on Hockey Canada's website for parent's which includes links regarding fair play and an introduction to the sport, but nothing that addresses sport participation concerning specialization and diversification. Thus, the need for accessible, peer-reviewed information is instrumental. Parents of young minor hockey players today need to be aware of the recent changes in the youth hockey landscape and of the research outcomes regarding youth athletic development. Some parents may decide not to adapt to what is being

taught, however, an entire environment with the appropriate knowledge may find it within themselves to hold each other accountable.

Second, hockey governing bodies must implement policies and a coaching accountability framework to ensure coaches are supporting diversification and creating equal opportunity for every child. Results show that coaches facilitate specialization by way of demand, pressuring a child to work on and improve their skills throughout the off-season, often citing falling behind and not making the team the following season as a driver. By doing so, parents perceive it is in the best interest to continue their participation so that their child will remain on the team the following season. To implement such change, policies should inform coaches that they are not permitted to influence a decision of a child, or penalize them for diversifying their sport participation, whether it be in-season or off-season. In addition, associations must limit the number of team participation hours per week coaches can utilize. This will provide an opportunity for players to pursue avenues outside of the team which can lead to more time spent with friends outside of sport, on schoolwork, playing another sport, or enjoying leisure activities. To ensure best practice, coaches must be advised before their commencement in the coaching role. Afterward, they should have to sign contracts outlining their role and responsibilities as a coach. Throughout the season, they need to be monitored and evaluated by the organization that granted them the position to ensure they are abiding by the policies in place. Policies should also address disciplinary action to be undertaken when coaches conduct violates organizational policy and/or the coach accountability framework. Disciplinary measures should include suspension or being flagged so that they are not able to pursue coaching opportunities elsewhere. Additionally, parent-coaching evaluations should be required to ensure policies are being respected.

Evaluations can be offered once during the season and after the season. This will allow for feedback to be considered when selecting coaches the following season.

Last, Hockey Canada must develop a new long-term player development model, and it must be promoted so that governing bodies, coaches, parents and players are aware of its components. In their current long-term player development model, Hockey Canada addresses the need to specialize in sport to attain elite success as it features research linked to early sport specialization when referring to Starkes and Ericsson's (2003) research on deliberate practice, "Research has concluded that it takes a minimum of 10 years and 10,000 hours of deliberate training for a talented player to reach elite levels" (Hockey Canada, 2013, p. 11). It further states, "for a player and coach this translates into slightly more than 3 hours of training or competition daily for 10 years" (Hockey Canada, 2013, p. 11). Additionally, it fails to include guidelines for diversified sport participation during the off-season. For example, in every model specific to age, Hockey Canada fails to include information pertaining to participation outside of the traditional 8-month hockey season. Finally, Hockey Canada must abide by their policies, and ensure they are being employed and respected by all member associations. It is one thing to induce change, but it is another to ensure it gets practiced.

Limitations and Future Research

The purpose of this study was to explore practices of early specialization within Minor Pee wee AA hockey players in Eastern Ontario. Due to the nature of the study, several limitations need to be noted. First, selection bias; as participation in the study was voluntary, those who chose to participate may have had pre-existing knowledge on the phenomena or were exceedingly interested in the study. Future research should target a sample that is more inclusive of the entire population. Second, parents were asked to respond based on their perception of their

child's participation within the sport of hockey. Therefore, responses may not be indicative of the child but rather what the parent perceives. Future research ought to study the perspective from the participant to ensure stronger validity. Third, as recruitment emails were entrusted to the parents via the teams coaching staff, it is uncertain whether every parent in the league received the email. Future research should omit the use of the coaching staff but rather contact the parent directly.

In addition, the study sample derived from Eastern Ontario, Canada, therefore limiting generalizability to other geographic locations. Future research should utilize a similar design within samples in other geographic locations within Canada. This also allows for the opportunity to investigate socioeconomic factors. Also, data collection took place over 8 months, which consisted of two hockey seasons and two years of teams. Thus, participants were interviewed at the end of one season and in the middle of the next. As a result, this may have affected their perceptions of the study and their motivation to participate in the study. One final limitation is the possibility that I was unable to get the participants to elaborate on their responses to certain interview questions during the data collection phase of the study. Although the semi-structured interview questions were designed as open-ended and accompanied with probing questions, some participants chose to provide fewer details about their personal experiences than others. Finally, future research should study different levels of play and different age groups to comprehend the depth of the phenomena. Further, this study could be applied to female youth as there continues to be a growth of female minor ice hockey participants in Canada.

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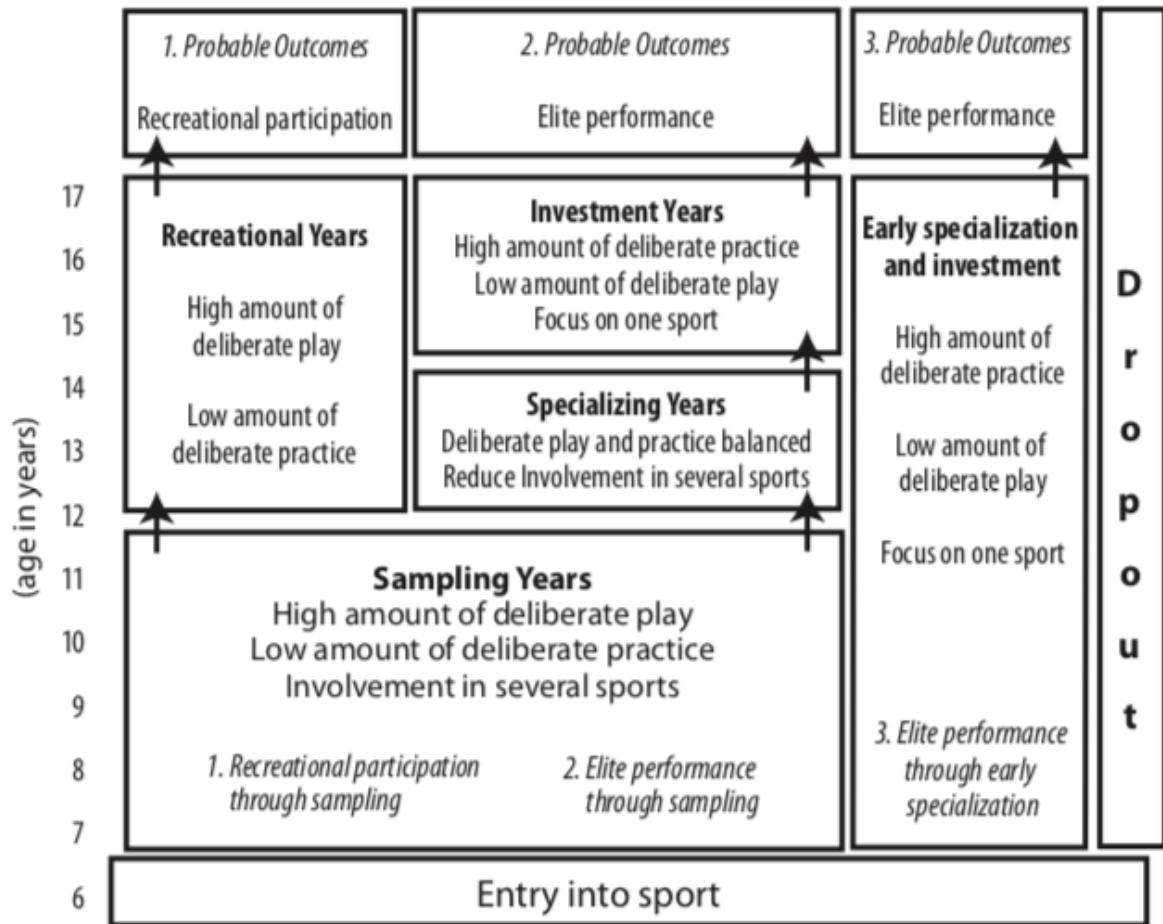
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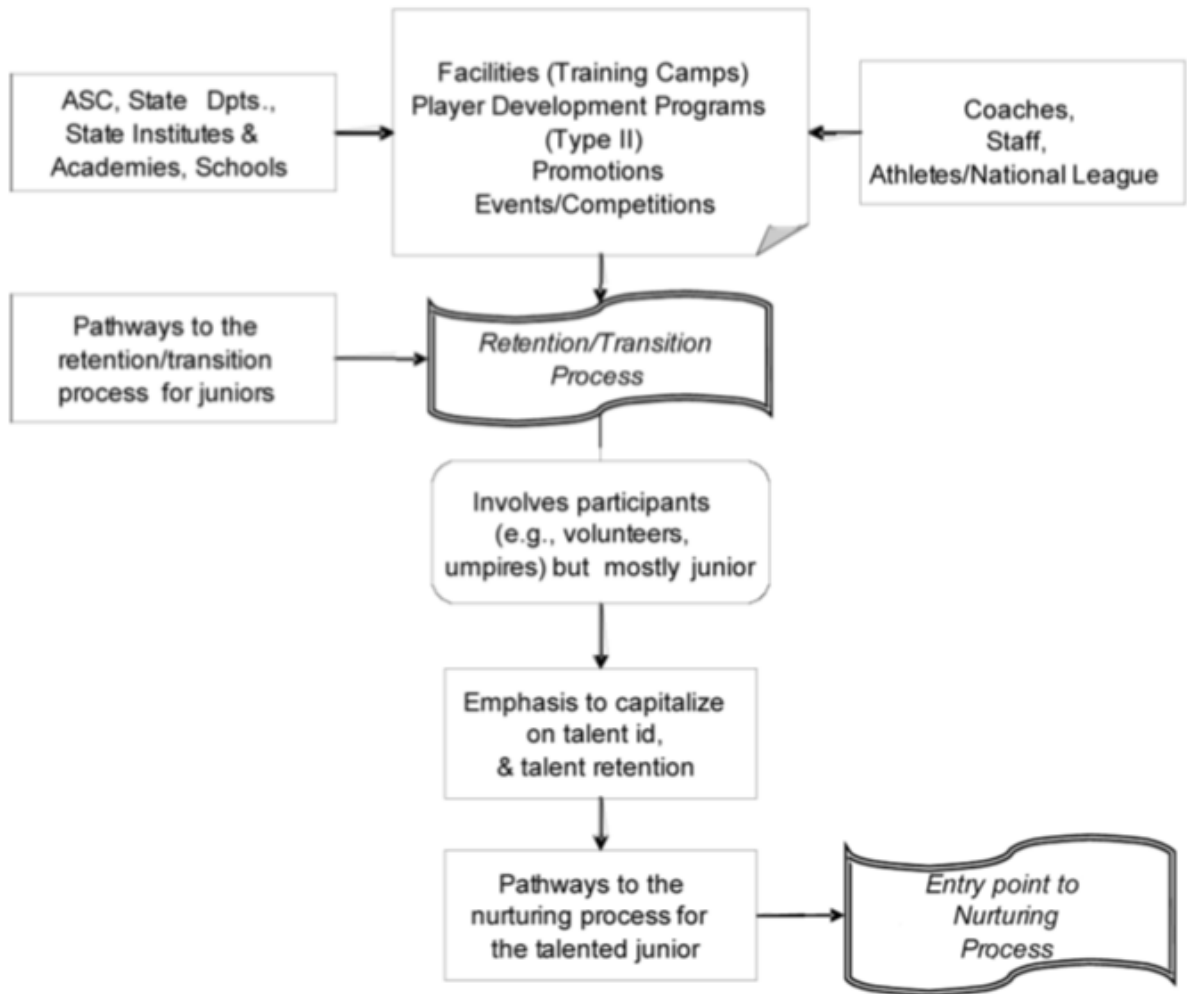
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Appendix A: Côté’s Developmental Model of Sport Participation

Table 1: The Developmental Model of Sport Participation (DMSP, Côté et al., 2007)



Appendix B: Sotiriadou, Shilbury and Quick’s Study of the Sport Development Process



Appendix C: University of Ottawa Ethics Approval Notice

12/04/2019

Université d'Ottawa

Bureau d'éthique et d'intégrité de la recherche

University of Ottawa

Office of Research Ethics and Integrity

CERTIFICAT D'APPROBATION ÉTHIQUE | CERTIFICATE OF ETHICS APPROVAL

Numéro du dossier / Ethics File Number	H-03-19-3014
Titre du projet / Project Title	Early Specialization in Youth Hockey: A Parental Perspective
Type de projet / Project Type	Thèse de maîtrise / Master's thesis
Statut du projet / Project Status	Approuvé / Approved
Date d'approbation (jj/mm/aaaa) / Approval Date (dd/mm/yyyy)	12/04/2019
Date d'expiration (jj/mm/aaaa) / Expiry Date (dd/mm/yyyy)	11/04/2020

Équipe de recherche / Research Team

Chercheur / Researcher	Affiliation	Role
Jacob RUEST	École des sciences de l'activité physique / School of Human Kinetics	Chercheur Principal / Principal Investigator
Eric MACINTOSH	École des sciences de l'activité physique / School of Human Kinetics	Superviseur / Supervisor

Conditions spéciales ou commentaires / Special conditions or comments

Please ensure that the Consent Form for Interviews is printed on official uOttawa letterhead.

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Appendix D: Letter of Information (Quantitative)



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Participant Letter of Information

Early Specialization in Youth Hockey: A Parental Perspective

Dear Participant,

My name is Jacob Ruest and I am a Master’s candidate in the School of Human Kinetics at the University of Ottawa. My reason for contacting you today is to invite you to participate in a research study on specialization in youth hockey.

You are invited to participate in a research study that will examine specialization rates among Minor Peewee AA hockey players in Eastern Ontario. Additionally, the study will gain an understanding of a parent’s perception of specialization versus diversification relative to their child’s experience with the sport of hockey. To date, little research has been conducted on the topic, especially from the parental perspective.

Thus, you are invited to participate in the study. The study consists of a 10-15 minute online survey and is being conducted solely in English. The online survey has 17 questions accessible via a direct URL link. The online survey should take approximately 10-15 minutes to complete. Participants will only be asked to complete the online survey one time. In order to participate, you must be 18 years of age and older and a parent of a child participating in the Minor Peewee AA hockey division of the Hockey Eastern Ontario league. Your participation is strictly voluntary. You may refuse to participate, refuse to answer any question, or withdraw from the study at any time without any negative consequence. However, given the anonymity of the study, once a survey is submitted researchers will not be able to remove survey responses. You will not be identified by name and your responses will remain strictly confidential. All data is stored in a password protected electronic format.

At the end of the study, an executive summary of the findings will be made available through Hockey Eastern Ontario. The summary will ensure anonymity of the participants as all results will be aggregated so as to not identify any parent or their particular team. The report will highlight the rates of specialization versus diversification in the Minor Peewee AA division. Further, it will provide an understanding of a parent’s perception of specialization versus diversification.

Findings will be used to better understand current trends among minor hockey players. The study is being conducted independently from the Hockey Eastern Ontario league.

To participate, please click the following link:



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<https://www.surveymonkey.ca/r/P7VFLDB>

If you have any ethical concerns regarding this study, you may contact the University of Ottawa's Protocol Officer for Ethics in Research, Tabaret Hall, 550 Cumberland Street, Room 154, Ottawa, ON, K1N 6N5, tel.: 613.562.5387, email: ethics@uottawa.ca.

Thank you for your time. Please contact us if you have any questions or concerns.

Sincerely,

Jacob Ruest, Master's Candidate

[Redacted]

Eric MacIntosh, Ph.D.

[Redacted]

*School of Human Kinetics, University of Ottawa, Ottawa, Ontario,
Canada*

Appendix E: Letter of Information (Qualitative)



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Participant Letter of Information

Early Specialization in Youth Hockey: A Parental Perspective

Dear Participant,

My name is Jacob Ruest and I am a Master's candidate in the School of Human Kinetics at the University of Ottawa. My reason for contacting you today is to invite you to participate in a research study on specialization in youth hockey.

You are invited to participate in a research study that will examine specialization rates among Minor Pee wee AA hockey players in Eastern Ontario. Additionally, the study will gain an understanding of a parent's perception of specialization versus diversification relative to their child's experience with the sport of hockey. To date, little research has been conducted on the topic, especially from the parental perspective.

Thus, you are invited to participate in the study. You may have received an earlier invitation to participate in the first part study, which consisted of an online survey. This invitation is to participate in the second part of the study exclusively. The study consists of a 30-45 minute semi-structured interview and is being conducted solely in English. In order to participate, you must be 18 years of age and older and a parent of a child participating on the Seaway Valley Minor Pee wee AA Rapids in the Minor Pee wee AA hockey division of the Hockey Eastern Ontario league. Your participation is strictly voluntary. You may refuse to participate, refuse to answer any question, or withdraw from the study at any time without any negative consequence. You will not be identified by name and your responses will remain strictly confidential. All data is stored in a password protected electronic format.

At the end of the study, an executive summary of the findings will be made available through the Seaway Valley Rapids organization. The summary will ensure anonymity of the participants as all results will be aggregated so as to not identify any parent or their particular team. The report will highlight the rates of specialization versus diversification in the Minor Pee wee AA division. Further, it will provide an understanding of a parent's perception of specialization versus diversification.

Findings will be used to better understand current trends among minor hockey players. The study is being conducted independently from the Seaway Valley Rapids organization.

To participate, please respond by email or phone to principal investigator Jacob Ruest indicating your interest.



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If you have any ethical concerns regarding this study, you may contact the University of Ottawa's Protocol Officer for Ethics in Research, Tabaret Hall, 550 Cumberland Street, Room 154, Ottawa, ON, K1N 6N5, tel.: 613.562.5387, email: ethics@uottawa.ca.

Thank you for your time. Please contact us if you have any questions or concerns.

Sincerely,

Jacob Ruest, Master's Candidate

[Redacted signature]

Eric MacIntosh, Ph.D.

[Redacted signature]

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Appendix F: Semi-Structure Interview Guide



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Early Specialization in Youth Hockey: A Parental Perspective

Semi-structured Interview Guide

Preamble: Thank you for agreeing to take part in this study. As you are aware, we are interested in learning more about the parental perspective on the important contemporary topic in hockey within the country specifically, the notion of playing one sport or playing several sports. This interview will provide a chance to understand more about what parents think regarding the ideas of specialization and diversification.

Question 1: In your view, what is sport specialization?

Question 2: Please elaborate on anything you have seen, heard or been exposed to through various mediums pertaining to specialization in hockey?

Question 3: In your view, what is sport diversification?

Question 4: Please elaborate on anything you have seen, heard or been exposed to through various mediums pertaining to diversification in hockey?

Question 5: From your perspective as a parent with a child playing hockey, do you think sport specialization provides children with increased enjoyment versus playing multiple sports? Please elaborate.

Question 6: Do you believe children who focus more than eight months a year on their chosen sport (e.g., hockey) are more likely to achieve elite sport status than those that diversify their sport participation? Please elaborate.

Question 7: From your experience, do you observe other parents and their children partaking in the sport more than 8 months a year.
- If yes, do you feel your child needs to keep up with the other children and increase their participation in that sport. Please elaborate.

Question 8: (Present the interviewee the findings from the quantitative study) What are your thoughts on these findings (e.g., rates of specialization)?

Question 9: Can you describe what you think is influencing the decision to play sport more than 8 months a year?

Question 10: Is there anything else you would like to add which you feel is pertinent to understand the parental perspective on sport specialization and diversification?