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Craig A. Paiement

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AN ASSESSMENT OF THE FACTORS PREDICTING COACHING EFFICACY AND COACHING SATISFACTION IN YOUTH SPORTS

By

Craig A. Paiement

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ABSTRACT

AN ASSESSMENT OF THE FACTORS PREDICTING COACHING EFFICACY AND COACHING SATISFACTION IN YOUTH SPORTS

By

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The main purpose of this study was to investigate the relationships among sources of efficacy information, coaching efficacy and coaching satisfaction of youth hockey coaches. Previous research has shown that coaching education, experience, playing experience, perceived ability of the team, and social support significantly predicted coaching efficacy. This dissertation added perceived skill improvement of the team and age of the coach as predictors of coaching efficacy. The study also added coaching satisfaction as an outcome of efficacy information sources and coaching efficacy.

Participants for this study were 512 amateur ice hockey coaches attending USA Hockey coaching certification clinics in the Northeastern and Midwestern United States. The findings suggest that coaching efficacy and satisfaction of volunteer youth coaches is predicted by previous coaching experience, social support and playing experience. Perceived team improvement was also a significant predictor of coaching efficacy, but did not provide a large contribution to the regression equation. Age of the coach was significant and provided a small contribution to coaching efficacy but was negatively correlated with it, indicating that younger coaches perceived higher levels of efficacy. Coaching education level and perceived team ability did not provide a significant contribution to coaching efficacy in this study. These findings add to the coaching

efficacy literature, not only are social support and coaching experience strong predictors of coaching efficacy, but along with coaching efficacy they also predict coaching satisfaction.

Practically, coaching education programs may need to focus on instilling the skills necessary to garner social support from parents, athletes and the organization. Additionally, coaching education may need to include an internship or mentored coaching experience prior to a coaching assignment to provide opportunities for coaches to develop a sense of coaching efficacy.

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CHAPTER 1

Introduction

Coaching by definition is the task of assisting an athlete to achieve the best possible level of performance (Woodman, 1993). Coaching athletes can be a highly rewarding experience and a number of factors can influence the level of enjoyment that a coach has with his or her experience in an athletic leadership role. Athletic development begins with interest in a sport or activity and the motivation to participate. Coaching at the youth level often begins in much the same way; an interested person has the motivation to share his or her experience and knowledge of a sport with young athletes. Generally, the person coaching is trying to give back to the sport to help children improve themselves as athletes and as people. A coach's influence in this way has long been associated with benefits to athletes through improved performance, development of character, athlete satisfaction, and a host of other positive outcomes (Baker, Yardley & Cote, 2003; Gould, Greenleaf, Chung & Guinan, 2002; Gould, Greenleaf, Guinan & Chung, 2002; Greenleaf, Gould & Dieffenbach, 2001). A coach's behavior in trying to improve athletic performance can also have a large influence on some negative athlete outcomes, such as athlete attrition (Barnett, Smoll & Smith, 1992).

Although there have been numerous studies regarding coaching influences on athlete outcomes, there has been a paucity of research on the benefits of coaching for the coaches themselves. Understanding the motivation of participating in coaching, as well as the aspects that lead to coaches' satisfaction and retention, is important because it ultimately impacts the athlete development cycle. That is, if a coach has been involved

with a team and developing the skills and attitudes of these athletes, but then quits, the athletes' progress is disrupted, and they have to start the cycle with another coach. Coaching turnover has been linked to poorer performance in sport in numerous studies (Goines, 1997; Koning, 2003; Rowe, Cenella, Renski, & Gorm, 2004). If skilled coaches are not finding some personal satisfaction in coaching, then their long-term retention and motivation may be difficult to achieve (Andrew & Schwab, 1995, Raedeke, 2004; Raedeke, Warren & Granzyk, 2002).

Understanding coaches' participation motivation and satisfaction in coaching may be as simple as a father or mother volunteering to coach a little league team, regardless of knowledge of the sport or previous experience with coaching, or motivation that is provided by being paid to coach. However, most coaches in the athletic development cycle are not paid. For example, Martens (1984, 1996) estimates 2.5-3 million people volunteer as youth sport coaches annually, in contrast to the 30,000 coaches employed professionally each year in the United States (National Labor Bureau, 2002). Also, many coaches are not parents. A year 2000 survey of participation in Canadian youth sport revealed that 35% of youth athletes had a parent as a coach or team administrator (Statistics Canada, 2000). Therefore, the issues surrounding one's motivation to coach or to stop coaching may be more complex than money or involvement with their own children. Once a clearer understanding of the factors surrounding coaching motivation is constructed, then ways to foster such influential factors can be produced and incorporated into coaching development programs

Factors that Influence Coaching Motivation and Satisfaction

Numerous factors assessed in this study that may be linked to coaches' motivation and subsequent satisfaction with coaching including: coaching education, coaching efficacy, team factors (ability, perception of improvement), and personal factors (age, experience). These factors are embedded into two models of coaching effectiveness (e.g., Feltz, Chase, Moritz, & Sullivan, 1999; Horn, 2002). In order to understand the relationship of these factors to coaches' motivation and satisfaction, the models are presented in the following sections. Horn's model of coaching effectiveness is the most comprehensive model and the Feltz et al. model is specific to coaching efficacy. Both are presented as the framework for coaching satisfaction.

Horn's Model of Coaching Effectiveness

Horn's model (2002, see Figure 1) includes many of the variables assessed in this study such as coaches' personal characteristics (Box 3), coaches' expectancies of their athletes (Box 3) and coaches' behavior (Box 4). Horn (2002) developed a working coaching effectiveness model as a way to connect research on coaching inputs to athlete outcomes. Horn included the factors from Côté, Salmela, Trudel, Baria and Russell's (1995) coaching model, but addressed additional factors and expanded on the outcomes of coaching behaviors. Horn added organizational climate to the predictors of coaching behavior, but more importantly, separated the coaching process into two boxes (Boxes 4 and 5). This model purports that coaches' cognitions drive their behaviors. Horn also indicated that coaching efficacy is included in Box 3, which is titled "coaches personal characteristics." This may be conceptually troubling as, theoretically, efficacy is a part of Social Cognitive Theory (Bandura, 1986), which would frame efficacy as a cognition and

should be included in Box 4, not Box 3. Box 4 in Horn's (2002) model includes expectancies, values, beliefs, and goals, which all are inclusive of cognitions that affect coaching behaviors. Coaches' personal characteristics in the Horn model include such categories as playing and coaching experience, critical thinking skills, decision making styles and self-efficacy. Boxes 3-5 are fairly undefined and testing the conceptual links may reveal that certain categories need to be reassessed and shifted. Ideally, the links between the cognitive appraisals of one's coaching will create a better defined model. As Feltz, Short, and Sullivan (in press) noted, the consequences of coaching behavior in Horn's model focus solely on athletes' psychosocial growth and development and not on other coaching factors, such as coaching commitment and burnout. Although Horn's model appears to be complex, any model must match the complexity of the construct that it is purported to explain, and coaching effectiveness is an extremely complex construct.

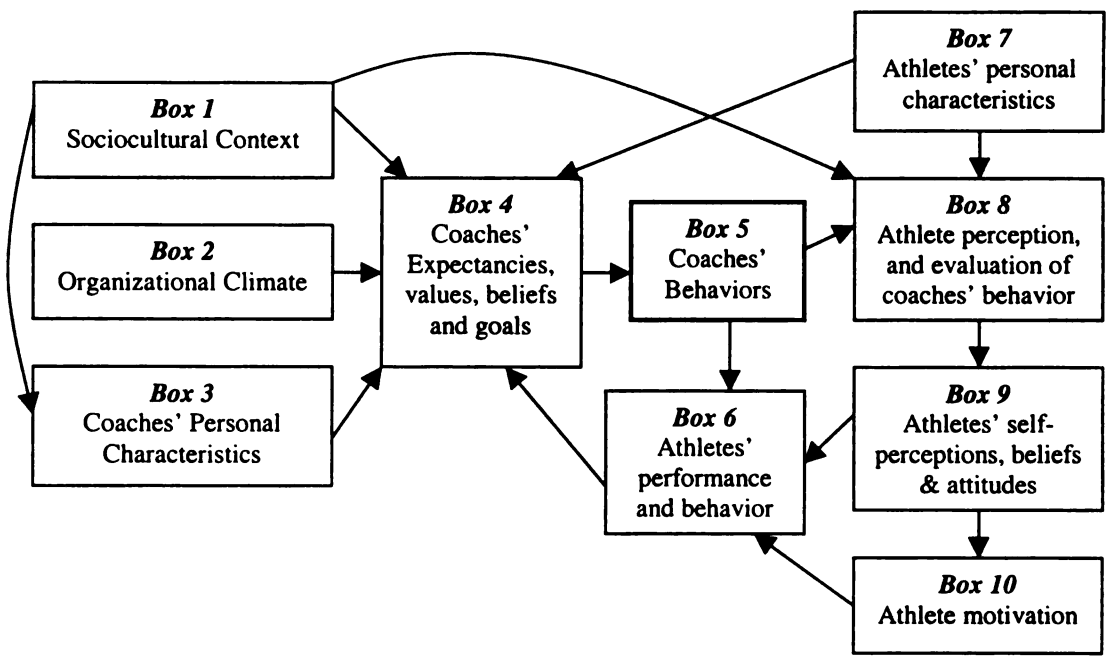

Figure 1. Model of coaching effectiveness (Horn, 2002)

Including other theoretical models within a proposed model can create additional complexities. For instance, as previously stated, coaching efficacy is a cognition and should not be grouped with coaches' personal characteristics, but rather with Box 4, as self-efficacy beliefs are more related to coaches' expectancies of athletes, values, and beliefs. Coaching efficacy is framed as a belief, and therefore should be included in Box 4. However, within social cognitive theory, efficacy beliefs influence goals and other cognitions (Bandura, 1986, 1997), and could be a box of its own.

Horn (2002) calls for research examining the effects of coaches' behavior, beliefs, and personal characteristics on their own psychological responses and reactions that influence coaching motivation. Specifically, Horn (2002) alludes to coaching burnout (Dale & Weinberg, 1990), commitment to coaching (Raedeke, 2004) and satisfaction with coaching. However, these coaching outcomes are not included in her model. The present study targets the influence of coaching efficacy and personal characteristics (e.g. experience, education, and age) as predictors on coaching satisfaction.

Model of Coaching Efficacy (Feltz et al., 1999)

Coaches have expectations related to their coaching actions. Most believe that they have the ability to affect change among their athletes. This belief is described by Bandura (1977, 1997) as self-efficacy. The theory of self-efficacy refers to the extent one believes he or she can be successful at a given task, which in turn, affects motivation and action. Bandura (1997) also warns that although self-efficacy plays a crucial role in social cognitive theory, it is not the sole determinant of action, as one will also see within coaching. Bandura cites four main sources that contribute to the development of self-efficacy: past performance accomplishments, vicarious experiences, verbal persuasion,

and physiological states. In applying the concept to coaching, Feltz et al. (1999) defined coaching efficacy as "the extent to which coaches believe they have the capacity to affect the learning and performance of athletes." While previous experience is a main construct of efficacy information, one area that may be related to experience is age of the coach. Even if a coach has less coaching experience, older coaches may have more vicarious experience to draw on for efficacy information.

In the development of a coaching efficacy model, Feltz et al. (1999) described four specific dimensions that contribute to general coaching efficacy: game strategy (GSE), motivation (ME), teaching techniques (TE), and character building efficacy (CBE) (see Figure 2). Feltz et al. (1999) documented some important outcomes of coaching efficacy, namely coaches with higher efficacy scores gave athletes more praise and instruction than coaches with lower efficacy scores.

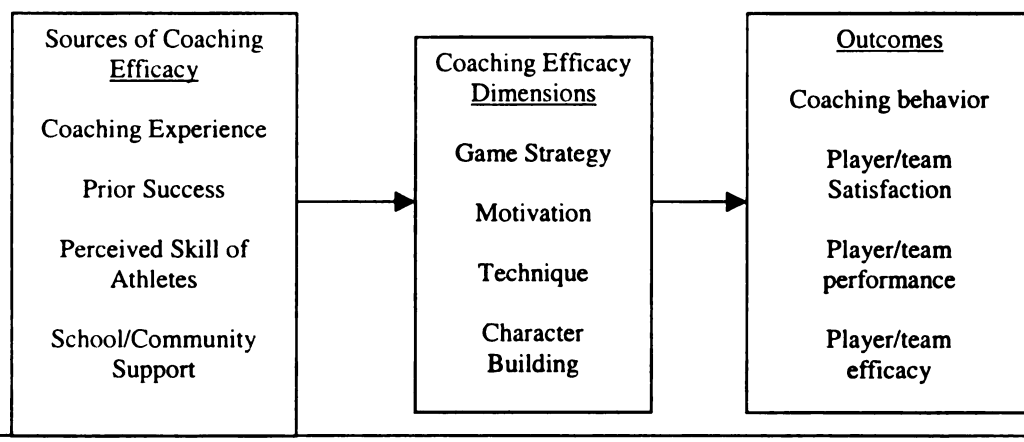

Figure 2. Coaching efficacy model (Feltz et al., 1999)

Additionally, athletes reported higher satisfaction scores with coaches that reported high coaching efficacy (Myers, Tonsing & Feltz, 2005). Conversely, commitment to coaching, a construct that was hypothesized as a possible motivational

outcome for coaches, was not related to coaching efficacy in Feltz et al. (1999), though Kent and Sullivan (2003) did find that commitment and retention of coaches was predicated by coaching efficacy. Coaching efficacy also has been found to relate to leadership style (Sullivan & Kent, 2003), coaches' expectations of their teams' performance (Chase, Lirgg, & Feltz, 1997), and team and player efficacy (Vargas-Tonsing, Warners, & Feltz, 2003). Outcomes of coaching efficacy provide useful information in coaching development, but discovering additional sources of coaching efficacy can provide important information to increase the level of coaching satisfaction concurrently with increases in coaching efficacy.

Feltz et al. (1999) found that community, parental, and athletic directors' support were significant sources for creating a sense of coaching efficacy for high school coaches. Coaching experience and the coaches' perception of the teams' ability also provided efficacy information to coaches. Others have found similar results with Division II and III collegiate coaches (Marback, Short, Short & Sullivan, 2005; Myers et al., 2005). Malete and Feltz (2000) also found support for coaching education as a source of efficacy.

As just noted, social support which can be thought of as a type of persuasion within self-efficacy theory, was an important source of efficacy information for coaches within the Feltz et al. (1999) model. Social support can be defined as information that leads individuals to believe that they are esteemed and valued and that they participate in a network of communication and mutual obligation (Cobb, 1976). In the coaching efficacy literature, social support is used to measure the support levels for the coach by athletes, parents, organizations, and the community. In addition to Feltz et al.'s (1999)

findings that parental, community, and athletic director support were significant sources, Chase, Feltz, Hayashi, and Hepler (2005) also found that player support was an important source of social support for coaching efficacy.

A coach's own prior playing experience has also been shown to be a source of coaching efficacy information (Chase et al., 2005; Sullivan, Gee, & Feltz, in press). Sullivan et al. (in press) assessed the relative importance of previous playing experience (while controlling for coaching experience) as a predictor of coaching efficacy and found that playing experience was a stronger predictor of GSE than was coaching experience, but not for the other dimensions of coaching efficacy. Thus, for those aspects of coaching that involve the application of practical game skills and knowledge, playing experience may be an additional source of coaching efficacy.

One additional predictor of coaching efficacy that must be addressed is the coaches' perceptions of team ability, because ability has been shown to have a strong relationship to efficacy (Lirgg, George, Chase & Ferguson, 1996; Myers et al., 2005). Lirgg, DiBrezzo and Smith (1994) found athlete ability to be the strongest predictor of coaches' efficacy. Coaches' perceived athlete ability may also be predictive of coaching satisfaction, because athletes with high ability and high levels of skill improvement may provide "success" information to coaches and a more enjoyable coaching experience. In youth sport, particularly in volunteer coaching situations, athletes' improvement may also serve as "success" information, because team win/loss records are not published publicly and do not follow the coach from year to year. Furthermore, in most youth sport organizations, the expressed purpose is for increased activity level and skill acquisition and improvement, not winning (Martens, 2004). For the present study, career winning

percentage and season win/loss records were not used, as they were deemed inappropriate for this population, and were impossible to confirm as accurate.

Satisfaction with Coaching

Satisfaction with one's coaching experience may also be a factor that influences coaching motivation and retention. This level of satisfaction may be influenced by coaching efficacy and the same sources of efficacy information. Satisfaction with one's own performance provides important information regarding motivation to strive toward certain goals. As Bandura (1997) states "efficacy is not the sole determinant of action," satisfaction or personal meaning must also be a contributing force to the action of human agency. If efficacy is high, but a lack of social support provides negative information, then those involved may begin to search out other means of activity that are more beneficial to the participant (Milner & Hoy, 2003). Feltz el al. (1999) expressed the need for the examination of additional sources and outcomes of coaching efficacy. One outcome that they did not include as a hypothesized motivational outcome of coaching efficacy was satisfaction with coaching. Satisfaction has been related to specific sources of efficacy beliefs, such as professional preparation and community support (Matthes & Duffy, 1989). In the field of teaching, outcomes of teaching efficacy, such as satisfaction with professional performance in teachers have been observed (Woolfolk-Hoy, 2000). Woolfolk-Hoy also notes that satisfaction with performance is affected by the difficulty of teaching assignment, which includes perception of student abilities and organizational support. As previously mentioned, many factors contribute to the action of human agency, and within this study, efficacy beliefs and satisfaction are two factors believed to have significant effects on coaches. If a lack of coaching efficacy or coaching satisfaction

is recognized, then the development of coaches can be hindered as retention becomes an issue and the end goal of athlete development slows.

Herzberg, Mausner & Snyderman (1959) developed the theory of motivation-hygiene to explain the effect of job satisfaction on work motivation. Herzberg et al. explained motivation through satisfiers such as: recognition, achievement, and personal growth. This provides support to such predictors of coaching satisfaction as social support, team improvement, and coaching education respectively. Maslow (1970) also developed a popular theory of motivation focused on needs at various levels of development, concluding with self-actualization, which embodies the overall feelings of satisfaction with one's life put into action. Although self-actualization is rare, it does provide a theoretical argument that motivation derives its roots from satisfaction, just as Herzberg et al. (1959) hypothesizes that motivation to work is born from satisfaction.

A significant issue with the development of both athletes and coaches is the amount of annual turnover within each sport. Natural turnover will always be a part of any sport with developing athletes. Reasons for natural turnover in athletes may include the decision to concentrate on one sport, graduating from amateur age categories, and injuries. The natural turnover in coaches also seems to take on a similar pattern, in which parent-coaches leave with his or her child, or step out of coaching roles because of young children at home or family commitments (Cunningham & Sagas, 2003). The type of turnover that must be avoided for both athletes and coaches is the type that includes dissatisfaction with the experience and with those who are responsible for contributing to a positive experience (i.e., coaches, youth sport organization). If they are provided with a rewarding and satisfying environment, more quality coaches may be compelled to stay on

as coaches and continue to contribute positively to the personal development of youth athletes, regardless of participation of their own children. In assessing effective coaching, one must realize that coaches' cognitions (i.e., efficacy) have a significant impact on the athletes, as well as on the coaches themselves. Coaching at the amateur level involves athlete outcomes (e.g., athlete performance, athlete satisfaction, and athlete motivation) as well as coaching outcomes (e.g., positive coaching behaviors and satisfaction with coaching). These outcomes are important to such "final outcomes" as coach retention, athlete retention, and athlete development. Therefore, it becomes imperative to understand the factors that contribute to coaching cognitions, as well as the effect of such cognitions on coaching satisfaction.

The concepts of satisfaction and efficacy both stem from motivational research, as Herzberg et al. (1959) and Maslow (1970) explained in their early social psychological research. Their research portends that human agency is driven by motivation, and motivation is driven by various factors, specifically satisfaction (Herzberg) and actualization (Maslow), in addition to a sense of "self". Bandura (1986) forwarded this sense of "self" in motivation and human agency in sport through social cognitive theory. The constructs of coaching satisfaction and coaching efficacy have not yet been connected in sport, although recent research has produced evidence that coaching efficacy predicts team satisfaction with the coach (Myers, Vargas-Tonsing & Feltz, 2005). Myers et al. forwarded the assertion that a coach with increased feelings of confidence in his or her ability to coach will have more satisfied athletes. As presented in the teacher efficacy literature, it would then be reasonable to believe that a coach who is confident in his or her abilities to coach will also be more satisfied as a coach (Chapman

& Lowther, 1982). Obviously, there are other factors that contribute to coaching satisfaction; it would be naïve to assume that efficacy is the sole determinant of satisfaction, just as Bandura (1997) states that efficacy is not the sole determinant of human agency. Reason is served to hypothesize that efficacy is a significant predictor of personal satisfaction.

It is also reasonable to assume that other factors that predict efficacy, such aspects as previous experience, team abilities, education, and social support, would also contribute to coaching satisfaction. It is imperative to ascertain the possible predictors of coaching satisfaction, because this construct is somewhat overlooked, yet an important influence on motivated behavior of coaches. This motivated behavior that influences volunteers to continue to coach youth athletes needs to be understood. Understanding coaches' participation motivation is an important issue as researchers examine ways to maximize the talents of good coaches, reduce coaching turnover, and thus minimize the resources expended on developing coaches. In addition, maximizing coaches talent and reducing coaching turnover should provide an improvement to the quality of the athletic experience for kids, in both fun and skill development. Taking the relevant factors from both models that were reviewed, the following model was constructed and tested to examine the sources of coaching efficacy and its mediating influence on coaching satisfaction (see Figure 3). In my proposed model, the sources of coaching efficacy that Feltz et al. (1999) proposed are hypothesized to predict both coaching efficacy and coaching satisfaction. Coaching efficacy is also a predictor of coaching satisfaction.

Purpose

The main purpose of this study is to investigate the relationships between sources of efficacy information and coaching efficacy with non-professional youth sport coaches as predicted by the model of Feltz et al. (1999). Additional sources of coaching efficacy -- age of the coach and perceived skill improvement of the team -- and coaching satisfaction as an additional efficacy outcome were also investigated.

Hypotheses and Proposed Model

Four research hypotheses are assessed within a proposed mediational model based on the Feltz et al. (1999) model represented in Figure 3.

1. Coaching education, coaching experience, playing experience, perceived ability of the team, perceived skill improvement of the team, social support, and age of the coach are all significant predictors of coaching efficacy.

2. Coaching education, coaching experience, playing experience, perceived ability of the team, perceived skill improvement of the team, social support, and age of the coach are all significant predictors of satisfaction with coaching.

3. Coaching efficacy positively predicts satisfaction with coaching.

4. As illustrated in Figure 3, coaching efficacy is a significant mediator of the sources of coaching efficacy information and coaching satisfaction.

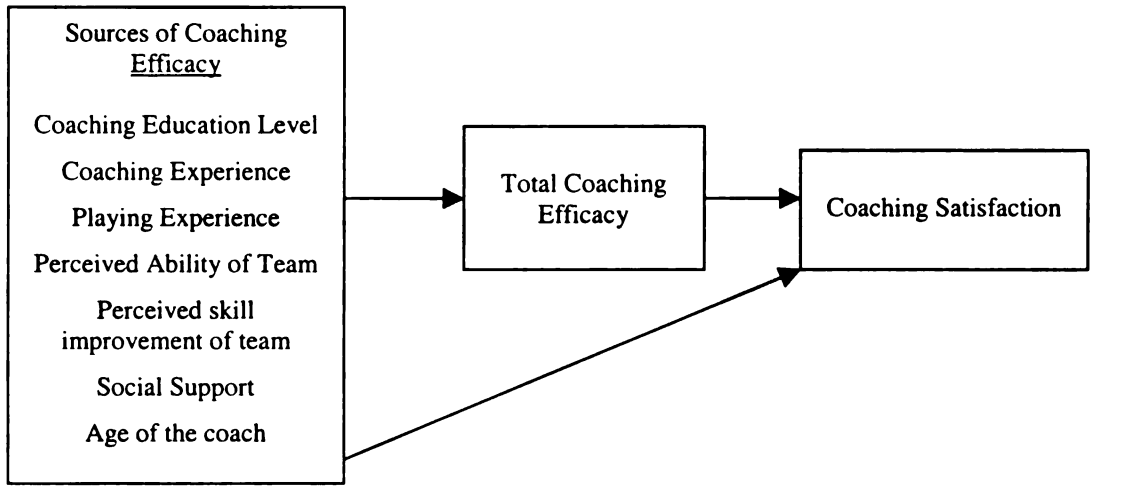

Figure 3. Hypothesized model of coaching efficacy and coaching satisfaction

CHAPTER 2

Review of Literature

Coaching is a unique and complex process that includes many roles, contexts and outcomes. Initial developments in the science of coaching were constructed with the bio-scientific and technique enhancement of athletes in mind (Woodman, 1993). Coaching and the education of coaches were previously presented as a technical and fairly straight-forward process. Recently, a shift has occurred in the literature, in an attempt to understand the psychological and sociological development of coaches. Thus, the study of effective coaches has shifted from an observable science of feedback patterns to the "art and science" of interpersonal relations, social support, satisfaction, and other emotional and cognitive precursors and outcomes, in addition to observable science (Woodman, 1993). Whereas a scientific approach to coaching undoubtedly has made a substantial contribution to the enhancement of athletic performance; science by its very nature has often ignored the reality and relevant issues of personal interaction, which are inherent within the coaching process (Potrac & Jones, 1999). Consequently, there is a need to understand this process, but there are significant gaps in the existing knowledge of coaching and the interaction of the athlete, coach and situational context (Cushion & Jones, 2001). However, Jowett and colleagues have begun an investigation into the coach-athlete relationship and the interdependence of the affective, cognitive and behavioral development of both the athlete and coach (Jowett, 2003; Jowett & Chaundy, 2004; Jowett & Cockerill, 2003). This chapter presents research intended to close these gaps through the development of conceptual frameworks and research on coaching

effectiveness models, the coaching process, coaching education, coaching efficacy, and coaching and leadership satisfaction.

Coaching Development and Effectiveness Models

The restructuring of coaching models remains a pre-occupation of current coaching research (e.g., Côte et al., 1995; Horn, 2002). The current coaching effectiveness models outline the possible conceptual links between athlete learning and coach effectiveness. An additional model focuses on coaching efficacy and coaching education (e.g., Feltz et al., 1999) and is covered in the following sections. This study, as well, is attempting to further the development of the coaching efficacy model (Feltz et al., 1999) by including additional coaching outcomes that may affect coaching motivation and coaching satisfaction.

Côte et al. (1995) Coaching Development Model

Côte et al. (1995, see Figure 4) initiated a coaching development model by examining expert gymnastics coaches and assessing the content of the coaches' knowledge. This was done in an attempt to understand necessary factors that affect coaches' knowledge and ultimately athlete performance. Using a qualitative inductive analysis process, Côte et al. (1995) found that the coaches' personal characteristics, the athletes' personal characteristics, and contextual or unstable factors (e.g., scoring politics, parents) contributed to the coaching process. The coaching process includes the coaches' knowledge of competition, practice and organizational techniques, which in turn lead to the goal of developing athletes. This coaching model provided an initial step for developing formal conceptual links between personal characteristics, knowledge, and performance.

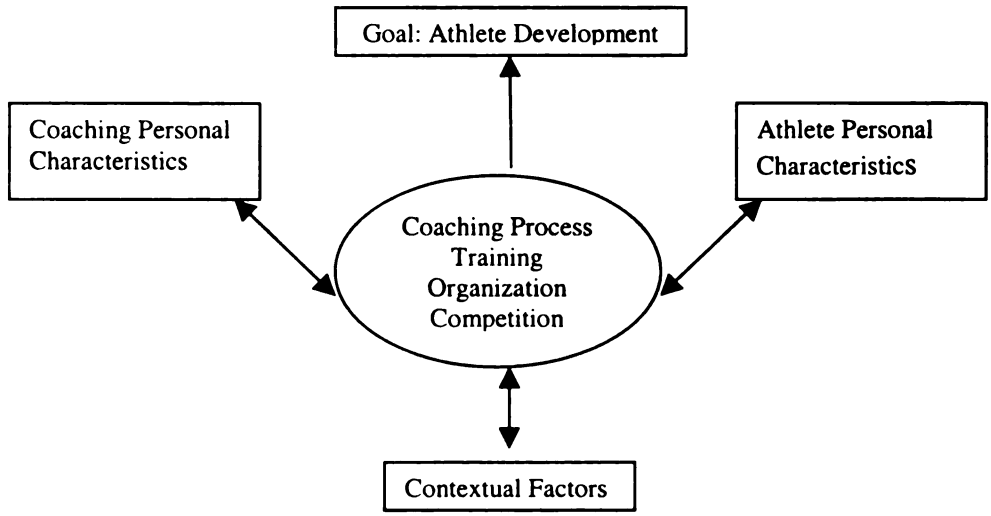

Figure 4. Côte et al. (1995) Coaching Model

Horn (2002) Coaching Effectiveness Model

Horn (2002, see Figure 1) furthered the development of a working coaching effectiveness model. As previously mentioned Horn included the factors from the Côte et al. model, added various important additional factors and expanded the possible outcomes of coaching behaviors. The most important development in Hon's Model was the separation of the coaching process into two boxes (Box 4 and 5). This primary focus of this model is the supposition that coaches' cognitions drive their behaviors. Box 3 which is titled "coaches personal characteristics," includes coaching efficacy. As discussed earlier, the inclusion of a cognition (e.g., efficacy, as defined by Bandura (1986) in Social Cognitive Theory) in a personal characteristics box may be incorrect. Box 4, not Box 3 may be more appropriate to include coaching efficacy in the model as Box 3 includes expectancies, values, beliefs, and goals, which all are inclusive of cognitions that affect coaching behaviors. Coaches' personal characteristics in the Horn

model include such categories as playing and coaching experience, critical thinking skills, and decision making styles. Boxes 3-5 may have significant crossover and testing the conceptual links may reveal a need to be reassess the included categories. As outlined in Chapter 1, this dissertation assessed some of the links between boxes 2-4. Boxes 5-10 are also important to understanding coaching effectiveness. Box 5 is simply headed *coach behaviors*, which in terms of research means leadership style and feedback patterns. As Horn points out, this limited view of coach behaviors may be due to measurement concerns. Identifying other types of coaching behaviors has been problematic as accessibility and accurate measurement have been difficult. Box 6, titled athlete *performance and behavior*, is shown as a direct link from box 5 to box 9 (*athlete self-perceptions*) and box 10 (*athlete motivation*). Athletic performance and behavior could be framed as the end result of the model. Box 7, which includes athlete personal characteristics, is linked to box 4 and box 8, which is athletes' perceptions and evaluation of the coaches' behavior, which leads to box 9 which is the athletes' self-perceptions based upon their perception of the coaches' behavior and interaction with them as athletes. Essentially, Horn's model links sources, such as personal characteristics and beliefs of athletes and coaches, to behaviors of coaches and the athletes' cognitive appraisal of those behaviors, and the athletes' subsequent behaviors. The area that seems to be absent is the coaches' cognitive appraisal of his or her and others' behaviors. Ideally, identifying the links between the cognitive appraisals of one's coaching will create a better defined coaching effectiveness model. As Feltz, Short, and Sullivan (in press) noted, the consequences of coaching behavior in Horn's model focus solely on

athletes' psychosocial growth and development and not on other coaching factors, such as coaching commitment and burnout.

Coaching Efficacy

Coaching efficacy, although only one element of the coaching process, provides significant insight into the study of developing effective coaches. Feltz et al. (1999) defined coaching efficacy as "the extent to which coaches believe they have the capacity to affect the learning and performance of their athletes" (p.765). Coaching efficacy was developed from the self-efficacy literature (Bandura, 1986, 1997) and teacher efficacy literature (Ashton & Webb, 1986; Coldarci, 1992; Gibson & Dembo, 1984; Hoy & Woolfolk, 1993; Woolfolk-Hoy, 2000), as teachers and coaches have similar end goals for their students and athletes respectively. One important distinction must be mentioned between the performance of athletes and the performance of students. Learning is inherent to both students and athletes in the teacher-student relationship and coach-athlete relationship, but the actual level of importance placed on performance and performance measures may be more salient in sport, as performance in sport even at the youth level is typically a public event.

Development of the Coaching Efficacy Model

Self-efficacy theory background. Bandura (1977) defines self-efficacy as people's judgments of their capabilities to organize and execute courses of action required to gain specific levels of attainment. Self-efficacy is concerned with judgments of what one can do with whatever skills one possesses, not with the actual skills. Bandura (1977, 1987) presents self-efficacy as a part of his social cognitive theory, which defines human behavior as a triadic, dynamic, and reciprocal interaction between personal factors,

previous behavior and the environment (Bandura, 1986). In social cognitive theory, Bandura asserts several key constructs. The construct we are most concerned with is *self-reflective capabilities*. Self-reflection enables people to analyze their thought processes and experiences, and adjust their thinking accordingly. This construct is of particular interest as one of the most important types of self-reflection is self-efficacy. An argument can be made that satisfaction is also self-reflective, or at least satisfaction with one's activity or career.

According to Bandura (1986, 1997) people develop perceptions about their own capabilities, feelings, and characteristics that guide their behavior such as what one tries to achieve, subsequent effort and commitment. These perceptions or efficacious beliefs guide action in many settings, and to understand sport coaching one must build upon this understanding from other previously examined fields. Specifically, the effects of efficacy have led to research in various fields related to coaching, such as teaching. This began with Denham and Michael (1981) who presented research in teacher efficacy. They defined teacher efficacy as one's sense that ideal teaching can bring about positive changes in a student and teachers' assessment of their abilities to bring about such changes.

Teacher efficacy background. There is a significant amount of teacher efficacy literature that has linked high levels of teacher efficacy to positive classroom behaviors and outcomes. Hoy and Woolfolk (1993) suggest that high levels of efficacy are correlated with increased feelings that teachers can motivate their students, even the most difficult of students. Teacher attrition also appears to be influenced by feelings of efficacy, with low efficacy teachers turning over more frequently than high efficacy

teachers (Stinnet, 1970). Gibson and Dembo (1984) examined the relationship between teacher efficacy and observable teacher behavior. They found that highly efficacious teachers tend to have a stronger academic focus in their classrooms with more time spent on task. On-task classroom activity includes instruction versus non-instructional activities such as games and art.

Denham and Michael (1981) sought to investigate teacher efficacy and its effect on teaching effectiveness. After examining the literature and consulting with various specialists in the fields of psychology, sociology, and education, they developed a multidimensional model of teacher efficacy. The researchers posited that a teacher's cognitive and affective appraisals have a reciprocal effect on their consequences and antecedent convictions. The consequences were defined as teacher behaviors and student outcomes, although teacher outcomes such as commitment or satisfaction were not included in the model. Antecedents for teaching are similar to antecedents for coaching efficacy: formal teacher training, previous experience, system variables and personal variables. Formal teacher training has been found to increase efficacy by giving teachers the knowledge they feel is essential to teaching. It directly increases their sense of preparedness (Housego, 1992) and their commitment to continue teaching (Woolfolk-Hoy, 2000).

Coladarci (1992) defines commitment to teaching as an indicator of a teacher's psychological attachment to the profession. Coladarci looked at the relationship between teacher efficacy and commitment to the profession of teaching. Coladarci administered a modified version of the Gibson and Dembo (1984) instrument for teacher efficacy. A school climate assessment appraising perceptions of working conditions for the teachers

and teacher personal characteristics was included in the study. Coladarci (1992) found that personal and general efficacies were strong predictors of commitment to teaching and that a positive and supportive school climate predicted commitment. This finding presents some support for the notion that increased efficacy and social support can slow professional attrition. In the process of developing coaches, practitioners and researchers must understand the role that efficacy plays in commitment and satisfaction of coaches. Feltz et al. (1999) set forth to develop a specific model of coaching efficacy utilizing similar antecedents and outcomes to those presented in the teacher efficacy literature.

Development and Examination of the Feltz et al. Model (1999).

Feltz et al. (1999) used the multidimensional model of teacher efficacy by Denham and Michael (1981), Bandura's (1986) theory of self- efficacy, and the work done by Park (1992) to influence the conceptual development of a preliminary model of coaching efficacy (See Figure 2 in Chapter 1). Specifically, Feltz et al. (1999) used the *National Standards for Athletic Coaches* (NASPE) and information from Park's (1992) exploratory factor analysis to forward the conceptual development of a measure that included four factors elicited during the conceptual development stage. The factors included GSE, which is the confidence that coaches have in their ability to coach during competition and lead their team to successful performance (p. 766). TE entails the belief coaches have in their ability to instruct the proper skills of the sport and detect errors in execution of the technical skills. ME is the confidence that coaches have in their ability to affect the psychological skill and physiological states of their athletes. Finally, CBE is defined as the confidence coaches have in their ability to influence the personal

development of and positive attitude toward sport in their athletes (Feltz et al. 1999, p. 766).

Feltz et al. (1999) tested their model in a two-phase process utilizing high school coaches. The first phase included the preliminary scale development and an assessment of the internal factor structure. They were able to develop a 24-item scale that provided a reliable and valid four-factor first-order model, and a single-factor second-order measure of total coaching efficacy. The second phase included assessing sources and outcomes of the coaching efficacy model. Feltz et al. (1999) acknowledged that the sources and outcomes included in this study were not an exhaustive list, but merely a starting point including sources and outcomes that were conceptually linked to efficacy through the teacher efficacy and coaching effectiveness literature. Feltz et al. (1999) found that perceived social support and previous coaching experience provided significant efficacy information to coaches. Previous winning percentage and perceived team ability provided information but the relationship was moderate. This may be due to the coaches' realization that they cannot control specific outcomes like winning or the natural ability of their athletes in a non-recruiting high school situation where they must coach whoever joins the team. Feltz et al. (1999) also assessed outcomes of coaching efficacy and found support for higher levels of feedback and praise. Players reported higher satisfaction with the high-efficacy coaches, and team performance was better for high-efficacy coaches. This result provokes the idea that performance and coaching efficacy may have a reciprocal relationship, similar to what has been found with collective efficacy and performance (Myers, Payment & Feltz, 2004). Feltz et al. (1999) stimulated a provocative line of research based upon their preliminary model of coaching efficacy with additional

leadership outcomes and behaviors, although coaching outcomes were limited to behaviors. The construction of the coaching efficacy model built upon the teacher efficacy literature and the work of Park (1992).

Park (1992) developed a measure of coaching confidence that was a precursor to the coaching efficacy model and utilized the work of Denham and Michael (1981) to identify antecedents and consequences of coaching confidence. Park's work presented antecedent variables including the coaches' personal factors such as: education in coaching, playing experience, coaching experience, and coaches' win-loss records. The antecedent variables were presented in concert with situational factors such as: teams' win-loss record, athletes' skill level and school support. Park posited that the antecedent variables would predict consequent variables such as team performance and coaching behaviors with coaching confidence as the mediating factor. Park (1992) reported findings that support Feltz et al. (1999), as social support and coaching experience were the most salient predictors of coaching confidence. Park did not find support for participation in formal coaching education, previous playing experience, prior win-loss record, and team ability. Outcomes of coaching confidence were examined and Park did not find support for team performance as an outcome of coaching confidence, but did find support for confidence predicting coaches' effort put forth in-season, but not out of season. The operational definition of effort put forth by Park (1992), which included hours spent planning and organizing, may not capture the entire construct of effort or commitment by the coaches. Park (1992) did not find support for coaching education as a predictor variable, but with the recent emergence of coaching education as an important

factor in the development of coaches, it is believed that there is a relationship between coaching efficacy and formal coaching education.

Research on coaching efficacy and coaching education. Despite Park's (1992) finding, Malete and Feltz (2000) set out to examine the relationship between coaching efficacy and coaching education. In their study, high school coaches took part in a 12-hour coaching education program that included topics on effective instruction and game strategy, developing personal and social skills, positive coaching, and others. The coaches who took part were compared to a control group of coaches at the same level who had not participated in formal coaching education. Malete and Feltz (2000) found support for the positive effect of coaching education on the coaches' perceptions of efficacy with the trained coaches versus the untrained coaches. Although support for GSE and TE was significant, little support was found for motivational efficacy; this could be due to the content nature of the coaching program and the focus on instructional techniques and positive coaching. Lee, Malete and Feltz (2002) also examined the relationship between coaching certification and coaching efficacy in coaches in Singapore. They found support for the positive relationship between coaching experience, coaching education and coaching efficacy.

One concern with Malete and Feltz (2000) and Lee et al. (2002) is that coaching knowledge was not examined either prior to or after the coaching education program. Malete and Feltz (2002) presented a two-week gap between measures, but two weeks may not be enough time to assess a difference in coaching knowledge or efficacy. These studies made an assumption that merely attending a coaching education program would have an effect on efficacy, which did prove to have a measurable effect. However,

considering the numerous other factors affecting efficacy, coaching education in and of itself may not provide as much meaningful information as intended and an increase in coaching knowledge may be minimal. One other concern with Lee et al. (2003) regarding the coaching education program utilized in Singapore is that CEP does not address motivating athletes as a topic until coaches progress past the level of certification examined in this study, which may explain the lack of support found for ME.

Fung (2002) examined community (i.e., volunteer) coaches in Hong Kong and the effect of "task familiarity" on coaching efficacy. Task familiarity included: coaching experience, coaching education and hours spent coaching the previous year. Fung reported that mean scores for all four factors of coaching efficacy increased with the level of coaching education. Findings for the construct of "task familiarity" were in conflict with previous literature. She found that game strategy was the least salient predictor of coaching efficacy. This may be due to the values of coaches in Hong Kong, or the nature of volunteer coaches, where game strategy knowledge may not be as valued as CBE and subsequent behaviors. Fung (2002) examined the perceptions of efficacy of high school coaches in Hong Kong and confirmed the findings that game strategy was rated the lowest by coaches and character building was rated the highest. She concluded that coaching education practitioners should focus more on game strategy during coaching courses in Hong Kong. However, this solution may not apply to coaches in the United States.

Kent and Sullivan (2003a) addressed some possible differences in American coaches and coaches from other countries with coaching education programs by assessing the differences between American and Canadian coaches and their level of efficacy and

organizational commitment. Kent and Sullivan (2003a) propose that American university coaches are more committed to their coaching position as they may be paid more or exhibit other professional issues that provide higher levels of satisfaction, including additional benefits. They also reported findings that GSE was rated significantly higher in American coaches; this could also be due to the importance placed by Americans on winning, with game strategy as an important component to winning. In contrast, coaches in Hong Kong focus on character building (Fung, 2002), which makes sense when considering the values of most Asian cultures.

Research on outcomes of coaching efficacy. Researchers have examined some of the possible outcomes of coaching efficacy, such as coaches' commitment, leadership style, and beliefs and behaviors of athletes. Kent and Sullivan (2003b) and Sullivan and Kent (2003) looked at outcomes of coaching efficacy. Kent and Sullivan (2003b) examined the relationship between coaching efficacy and coaches' organizational commitment. There is a difference between commitment to coaching (Raedeke, Granczk & Warren, 2000) and organizational commitment as defined by Chelladurai (1999). Chelladurai (1999) defines organizational commitment as a workers wholehearted participation in organizational activities, exertion of efforts and performance in those activities. Raedeke (2004) defines commitment to coaching as an attraction to and satisfaction with coaching as a profession. Kent and Sullivan (2003b) studied the organizational commitment of university coaches. They found support for the second-order factor of total coaching efficacy predicting affective and normative commitment. The findings present an important result as commitment has been linked to satisfaction. In the study, Kent and Sullivan (2003b) do not indicate if the participants are full-time,

part-time or volunteer coaches, as this relationship may have an effect on organizational commitment, as well as satisfaction with such items as pay or personal recognition, depending on the role of the coach as full or part-time.

Sullivan and Kent (2003) also studied coaching efficacy as a predictor of leadership style. They used the Leadership Scale for Sport (LSS), developed by Chelladurai and Saleh (1980), which may not provide enough leadership style information, but does provide information on leadership behaviors. Chelladurai's multidimensional model of leadership provides some conflicting information on leadership style, behaviors and decision making style. Regardless of the murkiness for the purpose of the current study, Sullivan and Kent (2003) make a contribution to the argument. The findings suggest that all factors of coaching efficacy were highly correlated with teaching and instruction behaviors, and that ME, TE and CBE were correlated with social support. Sullivan and Kent (2003) did not find support for democratic and autocratic leadership style. This could possibly be explained in that coaches may use their own personality as a natural leadership style, but positive coaching behaviors are learned and enacted by confident coaches. This result also provides support for Feltz et al. (1999) in that both high school and university coaches with high efficacy display more praise, encouragement and positive coaching behaviors.

The effect of coaching efficacy on positive coaching behaviors should then provide information to the athletes and in turn increase player efficacy and team efficacy. Vargas-Tonsing, Warners and Feltz (2003) researched the predictiveness of coaching efficacy on team and player efficacy. In this study collegiate volleyball coaches and athletes were examined. Coaching efficacy was found to predict collective team efficacy,

but not player efficacy (Vargas-Tonsing et al., 2003). This could have been due to the actual effect of coaches at the collegiate team level and the skill level that should have been attained prior to reaching the collegiate ranks. The researchers found that ME and CBE were the strongest predictors of team efficacy. This would be appropriate at the collegiate level as the relationship a coach has with such highly skilled athletes would involve motivation and personal development more than instruction (Bloom, Schinke & Salmela, 1998). Thus, the consequences of coaching efficacy may differ in coaches of collegiate sports versus high school coaches.

Research on sources of coaching efficacy. Researchers have examined some of the sources of coaching efficacy, such as coaching experience, playing experience, success, and social support. Feltz et al. (1999) assessed the sources of coaching efficacy in high school coaches, and as noted in the previous coaching and coaching efficacy literature, context can have a very real effect on coaches and athletes. Myers, Tonsing, and Feltz (2005) examined the relationship between coaching efficacy and its sources, coaching behaviors, personal characteristics and team variables. Social support, team ability, previous coaching experience and career success were significant sources of efficacy information. Team ability and career success predicted male coaches' efficacy, whereas team ability and social support were significant predictors of female coaches' efficacy. Coaching efficacy exerted different influences on male and female coached teams (Myers et al. 2005). In men's teams coaching efficacy predicted efficacy-enhancing behaviors, team satisfaction and team success. On women's teams coaching efficacy only predicted efficacy-enhancing behaviors. This provides relevant information that differential effects for male and female coaches and teams may occur.

Barber (1998) examined the differences in sources of coaching competence by gender of the coach. Barber found that coaches relied on improvement of athletes as a source of coaching competence information. Contrary to efficacy research, success and social support were not significantly related to perceptions of coaching competence. Barber's (1998) study reported a very small amount of explained variance of the construct, so the results should be assessed with caution. Marback et al. (2005) also explored the sources of coaching confidence and difference by gender. Additionally, Marback et al. (2005) examined the relationship between Feltz et al.'s, (1999) coaching efficacy model and Barber's (1998) coaching competence construct. Marback et al. (2005) found that male coaches' perceptions of coaching efficacy was higher on GSE and ME and lower than females' perception of CBE. The sources of coaching efficacy found to have a significant relationship in this study included coaching experience, gender, as well as Barber's addition of social processes (i.e., feedback from athletes, affect of athletes) that may be likened to Feltz et al.'s (1999) social support measure. Coaching experience and social support have been consistent predictors of coaching efficacy. Although playing experience has conceptual links to perceptions of efficacy, it has not been studied extensively in the coaching efficacy literature.

One study that has examined playing experience as a source of coaching efficacy is Sullivan et al. (in press). In this study, the researchers compared the predictive strength of playing and coaching experience as sources of efficacy information. Sullivan et al. found that coaching experience provided significant information to all four first–order factors of coaching efficacy and playing experience only added predictive information to game strategy efficacy. The sample was comprised of curling coaches. The sport of

curling at the competitive level is generally considered a strategy game, and does not typically include intricate technical components or major motivational and emotional components. Therefore, playing experience may have a significant effect on the success of curling coaches, and is very relevant to efficacy information of curling coaches. Sullivan et al. (in press) provide information to consider coaching experience and playing experience as sources of coaching efficacy. As studies of coaching efficacy have provided ample evidence for predictors and specific outcomes, Feltz et al. (1999) and Sullivan, Paiement, Brachlow and Bagnell (2005) asserted that additional outcomes may be relevant to coaching efficacy. In the present study, coaching satisfaction is one such outcome that has been posited to have a relationship with coaching efficacy.

Coaching Process

As discussed previously, the coaching process is not only a scientific one but also a social one (Jones, Armour, & Potrac, 2002). As such, social activities involve interaction between people regardless of gender, race, class, values and experience. Accordingly, there has been increasing interest among researchers of the sociocultural and contextual factors in investigations on the dynamic coaching process as indicated by Horn (2002). Additionally, organizational climate is also a social factor in the development of a coach. Within the framework of Horn's model of coaching effectiveness, a reasonable question to ask is how does the development of effective coaches occur and where does development fit into the model.

Development as a coach involves numerous factors including communication skills, feedback patterns, and instructional techniques, each of which interacts in a social environment. Martens and Gould (1979) examined volunteer coaches' orientation

towards coaching. Their results revealed that coaches do understand that coaching and youth sport are social processes, as coaches rated socialization outcomes as the most important for youth sport. One caveat regarding the results of this study is that youth sport has become "professionalized" and specialized in the past 25 years; therefore, the results may not be indicative of the attitudes of today's coaches. Social processes are still of great interest in the development of coaches and athletes. Martens and Gould's (1979) study provided a number of pertinent findings. Namely, coaches with less experience placed more emphasis on fun, and coaches with more formal training, experience, and a career in education placed more emphasis on winning.

This result may be of concern as development of coaches includes formal education and experience (i.e., mentorships), which should translate into positive development of the athletes, but may refocus coaches on success outcomes and not skill and personal development. Even legendary coaches focus more on the development of the athletes through instruction and drilling. Tharp and Gallimore (1978) observed legendary UCLA basketball coach John Wooden to study his teaching technique and athlete interaction skills. They outlined his coaching background to understand the pyramid of success as presented by Wooden. Wooden (2004) reports that the pyramid of success took him 15 years to conceptualize, organize, and complete and it mirrored his coaching development. Tharp and Gallimore (1978) simply observed his coaching style, which had been honed over 45 years. They observed Wooden providing instruction, error correction/reinstruction, and encouragement (i.e., hustles) nearly 70% of the time, which all relate to social interactions and teaching, the crux of his pyramid of success. In developing coaches' interaction with athletes, understanding how best to instruct and

having confidence in one's teaching technique may have important consequences to athlete development.

Gallimore and Tharp (2004) reexamined their earlier data and enhanced the previous study retrospectively. They found that in teaching, Coach Wooden planned every interaction prior to presenting anything to the athletes. The results of these two studies may speak to the importance of teaching technique efficacy in developing athletes. Although the other factors are important, if a coach of this stature, coaching elite athletes spends 70% of his time teaching, then technique efficacy and teaching coaches how to teach may be a more relevant part of the coaching development process than is presented in most coaching education programs.

Sage (1989) examined the entry of coaches into coaching and found that novice coaches used personal experience and informal knowledge gathering in their teaching and athlete development skills. Rushall (2004) warns against this type of coach development, or as he cites, belief-based coaching. He encourages evidence-based coaching, because utilizing knowledge learned only from observing leads to reintroduction of skills and methods that may be incorrect and outdated. Rushall (2004) supports the development of coaches through evidence-based training rather than experiential training, although there is a significant amount of research that supports the use of both evidence-based coaching education and experience-based mentorships (Gilbert & Trudel, 2001). Douge and Hastie (1993) argue that effective coaching comes from knowledge, as well as self-reflection on ones' skills and interactions with others. They also cite the need for coaches to observe, analyze, and modify their coaching to fit the specific situation; this is typically learned in

action, therefore providing support for an experience-based component to coach development.

Additionally, Bloom et al. (1998) contrast the communication skills needed by novice and elite coaches. The skills needed by novice coaches are more basic, such as the principles of positive feedback, and can be instructed in a formal coaching education environment. For elite level coaches, communication skills need to be learned and developed over time because the needs and coach-athlete relationships change to a collegial advice seeking relationship at the elite levels. In constructing the beliefs of youth coaches, it may be important to provide more interaction, both formal and informal. Wilcox and Trudel (1998) examined how youth coaches construct their beliefs about the important aspects of coaching. Their results revealed that winning and player development were of somewhat equal importance to coaches, but character building and sportsmanship were considerably less important and they suggest may be somewhat falsely elevated in other research studies.

Abraham and Collins (1998) provide a provocative statement about research in coach development. They posit the same concerns that Rushall (2004) presented, that "accepted" knowledge is masked as expertise and erroneous information is promulgated to new coaches. They also call for the inclusion of contextual information about the coaches and the situation, as detailed in Horn's (2002) model. It may be prudent to coach development to separate sport and coaching knowledge as has been done in some coaching education programs. The Canadian Association of Coaching provides all three areas: sport-specific knowledge competency, general coaching competency, and formal mentoring to provide a more thorough knowledge base for developing coaches. Abraham

and Collins (1998) also discuss the need for content knowledge, which is the sport specific knowledge such as the specific skills and strategies needed for success in whichever sport the coach is involved. It is also necessary to encourage the understanding of process knowledge, which are basic teaching skills or pedagogical content, so coaches can effectively instruct the youth athletes.

Process knowledge may be more easily gained through observation of coaches and personal experience. Gould, Giannini, Krane and Hodge (1990) cite experience and observation as important sources of process knowledge for coaches. Gilbert and Trudel (2001) examined directly how coaches learn to coach. They imply that experience is a very important part of coach development and suggest that coaching education use an issue-based approach, which would provide practical knowledge to the learning process. Additionally, they provide support for a reflective environment in coaching development possibly with mentors or peers because coaches are already involved in personal reflection. In the development of coaches, one final skill that should be discussed is how coaches frame their role as a coach within the athlete development cycle. Gilbert and Trudel (2004) suggest that tacit role framing be taught in coaching education because coaches will be more effective in their role if it is framed correctly during their development as coaches. As coaches continue to develop their coaching skills through education and endure experiences in which they and their athletes improve and experience success, then their personal or "coaching" efficacy begins to increase (Feltz et al., 1999; Woolfolk-Hoy, 2000).

Coaching Education

As children increasingly joined organized sports teams, the need to provide training for coaches increased (Martens, 1984). As athletes progress through their developmental stages, coaches must be prepared to provide adequate instruction to athletes in an attempt to continue the development cycle. It is simply not enough to expect volunteer coaches to know how to coach based upon limited playing experience or limited understanding of pedagogical principles. Teachers are required to have a college degree, yet we allow youth sport coaches to simply volunteer, even though the level of influence can be similar. An argument could be made that coaches have enough time with the athletes to have a significant influential effect, either positive or negative, on youth athletes. Therefore, coaching education programs developed in response to this need for training of coaches, such as Coaching Effectiveness Training (CET: Smith, Smoll, & Curtis, 1979), American Sport Education Program (ASEP: Martens, 2004), Program for Athletic Coaches Education (PACE: Seefeldt & Brown, 1990), the National Youth Sports Coaches Association (NYSCA: 2003), and the National Coaches Certification Program (NCCP) in Canada. One concern is the level of motivation that coaches have for attending coaching education programs

Coaching Preparation Motives

Coaching education should be a standard requirement because many coaches do not have any professional preparation prior to beginning coaching. Stewart and Sweet (1992) examined the professional preparation of 288 high school coaches. They found that 82% of coaches participated for "love of the kids" or "personal enjoyment", but less than 50% had any formal coursework in any topic related to coaching. While the

participation motives of coaches are encouraging to organizers of youth sport, the lack of coaching preparation is discouraging. Houseworth, Davis and Dobbs (1990) indicated that unprepared coaches lacked sufficient knowledge in key areas of coaching and putting competent and confident coaches into leadership positions should be more important than promoting coaches that are interested for "personal satisfaction". Weiss, Barber, Sisley and Ebbeck (1991) examined female coaches who attended a coaching workshop then completed a season-long internship. Although they found that 25% of the coaches had low perceived coaching competence even after the internship, they did notice an increase of confidence in communication (89.7%) and motivation skills, as well as teaching skills, knowledge of the game and leadership skills. Female coaches rated lack of sport-skill knowledge as their greatest weakness, which contrasts the findings of Houseworth et al. (1990) who did not find a difference between sexes and sport-specific knowledge.

Formal Coaching Education Programs

Smith, Smoll and Curtis (1979) developed a coaching effectiveness training program for little league baseball coaches based upon Bandura's (1977) social-cognitive theory. Smith et al. (1979) pioneered the vision of large scale improvement to youth coaching through specific education. Their program was based upon teaching coaches how to provide positive, meaningful instruction and continuous encouragement and limit punishment and negative feedback. Smith et al. (1977) found that children evaluated the trained coaches more positively than untrained coaches and that there was no difference in the win-loss success of trained and untrained coaches, suggesting that on-field success would not affect the evaluations. They also found that children who played for trained coaches had higher post-season self-esteem, and children with lower pre-season self-

esteem were more attracted to trained coaches. This study did not measure whether the athletes felt they improved, which is one factor in athlete development, but did indicate that positive behavior by the coach increased attraction to the coach and a return to play the following year. Support for coaching education began to increase during the decade following this study.

Martens (2004) recognized the need for widespread coaches' education and developed ASEP, based upon similar principles of coaching, such as positive reinforcement, encouragement, and sport knowledge. Martens did incorporate a more broadly presented program to include the needs for skill development. As Feltz, Short & Sullivan (in press) noted, other programs, such as PACE, NYSCA, and NCCP are generally similar and cover topics on legal responsibilities, prevention and care of athletic injuries, organizing practices, motivating athletes, and sport-specific technical and tactical skills. Their program lengths vary from 7 to 12 hours.

Problems with Coaching Education Programs

Houseworth et al. (1990) examined the features of these widely accepted coaching education programs (e.g., ASEP, PACE, NYSCA, and NCCP). They determined at that time that none of the programs provided direct development of, and testing for, high school coaches. Houseworth et al. (1990) also examined the needs of high school coaches themselves. The researchers indicated that coaches felt most knowledgeable with sport specific skill, game strategy and teaching technique, and less knowledgeable about motivation, psychology, injury prevention and physical training. Coaches wanted information about topics on which they felt less knowledgeable. Coaches in this study believed that coaching education should be a requirement prior to

any coaching assignment. Although coaches agreed that coaching education was important, the authors acknowledged that actually getting coaches to participate has been a long standing problem unless the program is mandatory.

It is a common conception that coaching education and coaching certification are one and the same. It would seem to reason that coaching education is the act of providing resources and information to coaches to improve their knowledge. Coaching certification, on the other hand, should be a measure of minimal content or experiential knowledge that must be possessed prior to beginning coaching; this can be identified by examination or other minimum standard criteria. Campbell (1993) examined coaching education in various countries and determined that coaching education takes on many forms dependent upon the culture, politics, traditions and goals of the country. She presented a thorough examination of coaching standards determined by certain European sporting bodies and concluded that sport-specific knowledge, performance-related core knowledge (i.e., motivation, psychology) and practical experience are key components to coaching education. She also suggested that coaching certification is more important than general coaching education, as minimum standards of knowledge must be attained and recertification keeps coaches up to date on skills and information.

Critical Evaluation of Coaching Education Programs

In response to Campbell (1993) and sensing a need to better understand the applied work in coaching education, Gilbert and Trudel (1999) developed a strategy to evaluate coaching education programs. Their investigation utilized a case study of one coach attending a single coaching seminar, which provides a weakness for generalizing to other programs, but the information gleaned may be useful in developing formal

evaluations for coaching education. They determined that a thorough and well developed national coaching education curriculum was not presented as intended and no new knowledge was gained. Gilbert and Trudel (1999) suggest that one must consider the coaches' pre-existing knowledge base and the delivery of the material in developing coaching education. If the coaching education program is not properly conducted or delivered or if the information is repetitive or too elementary it may not provide efficacy information or any contribution to feelings of competence.

Building upon the Gilbert and Trudel (1999) study and Weiss et al. (1991) study, Cushion, Armour and Jones (2003) argue that coaching education programs are somewhat murky in their actual effectiveness in increasing coaching knowledge in the application to the "fieldwork" of coaching. Therefore, Cushion et al. (2003) indicate that it may be more appropriate to build coaching education around workshops and formal mentoring programs to maximize the effect of coaching education and increase levels of confidence and perceived competence prior to coaching one's own team. They argue that a workshop/mentoring program would provide praxis for coaches by combining coaching knowledge, theory and practice to their repertoire prior to the responsibility of developing athletes. Weirsma and Sherman (2005) followed Houseworth et al. (1990) with an updated assessment of volunteer coaches' beliefs about coaching certification. Although Cushion et al.'s suggestions are sound; Weirsma and Sherman provide some information about barriers when addressing volunteer coaches. Their findings suggest that volunteer coaches are interested in the content areas of psychological development, managerial aspects of coaching and skill development of athletes. The coaches discussed barriers to formal coaching education, such as time constraints and the transient nature of volunteer

coaches. Themes that arose from the volunteer coaches were activities such as: round table discussions about problems that occur, mentoring relationships, and self-study.

One topic that was discussed in Weirsma and Sherman (2005) and may need to be addressed in general coaching education programs is age-specific and level-specific training sessions. Sullivan et al. (in press) have also addressed this issue and the difficulty with varying contexts that coaches face in participating in coaching education.

Coaching Satisfaction

Satisfaction with coaching has largely been ignored in the sport psychology literature. The outcome of coaching satisfaction has not been included in any of the theories forwarded in the sport psychology or sport leadership literature. Chelladurai and Ogasawara (2003) developed a measure of coaching satisfaction recently. By using questionnaires from the job satisfaction literature and adapting the Reimer and Chelladurai (1998) Athlete Satisfaction Questionnaire, Chelladurai and Ogasawara forwarded the construct of coaching satisfaction. The primary problem with their measure is the limited use, as the measure was intended for collegiate and professional coaches. The categories that were outlined in their study included satisfaction with pay, supervision, benefits, etc. Although a similar definition for satisfaction was used for their study, a very different construct emerged and proved to be a significant contrast to the current study. Regardless, Chelladurai and Ogasawara (2003) found that the highest rated categories were process-oriented and were consistent among Division I, III, and Japanese college coaches. Categories such as *coaching job, autonomy,* and *team performance* were rated the highest. Content-oriented categories such as *pay, job security,* and *facilities* were rated the lowest. This may be an example of Herzberg et al's theory (1959) that

process-oriented categories are actual measures of satisfaction, while the content-oriented categories are actual measures of dissatisfaction.

Satisfaction is defined as anything that brings about a happy feeling or the fulfillment of a need, appetite or desire (Webster, 2005). Satisfaction, whether it is job satisfaction, personal satisfaction or satisfaction with those who affect your daily activities, can have a significant effect on your motivation to work or perform. There is a paucity of research on satisfaction with coaching and the limited research that has been completed is derived from the theoretical background of organizational psychology and job satisfaction (i.e., Chelladurai & Ogasawara, 2003). While relevant to this study, job satisfaction literature may not adequately explain satisfaction and motivation of non-professional coaches, due to the focus on satisfaction with pay, benefits, supervision and other extrinsic factors. I propose in this study that motivated behavior of volunteer coaches may find its roots intrinsically, with such constructs as coaching efficacy and satisfaction. Farrell, Johnston & Twynam (1998) examined the motivation of volunteer coaches in sport and the relationship with satisfaction. They found that purposive motivation was the most significant contributor to motivation as a volunteer. Purposive motivation is operationally defined as the desire to do something useful and give back to the community, which is a similar reason found in studying motives of youth sport coaches. They found that volunteer satisfaction was related to organizational behavior and support. A key component to satisfaction may be perceived social support, which has been linked to such outcomes of coaching and leadership as satisfaction, burnout, and commitment.

Social Support and Satisfaction

Coaches derive feedback from parents, athletes, the organizations they represent and the community as a form of social support, either positive or negative. Coaches may perceive a significant amount of pressure and stress due to the level of responsibility they have to the athletes, parents, and organization they represent. There is a considerable amount of literature that has examined the relationship between social support and positive feelings and cognitions. In contrast, feeling a lack of support may cause stress and a lower level of satisfaction with the activity. While parental support has been hypothesized to be an important predictor of coaching satisfaction, the support of the organization may also be an important factor in youth sports. This may be due to the responsibility that a coach has to answer to the organizational board, and the organization is responsible for important decisions about the team, including scheduling. In youth sports, the organization has a similar role to the athletic director in the aforementioned coaching efficacy studies. In many situations social support also comes from significant others. In youth sport, coaches have numerous significant others, namely: the athletes, the parents, the community and the youth organization they represent.

Taylor (1992) first discussed the main sources of stress for coaches, specifically: interactions with fans, media, and parents. Additionally, he indicted that a lack of support in any area of the coaches' social network could cause an increase in stress level. In reducing stress of the coach, Taylor (1992) indicates that support from the athletes may play a significant role. In addition to Taylor's premise, Cohen and Wills (1985) purport that social support is beneficial regardless of level of stress by providing positive affect, the perception of stability and a sense of self-worth. Reimer and Chelladurai (1995) also

showed a positive relationship between social support from the coach and athlete satisfaction. As presented earlier, at higher levels of competition, with a mutually respectful environment, a reciprocal relationship between support and satisfaction may occur with the coach and athletes. Support from the athletes may be an important part of satisfaction, but support from the parents can have a significant impact as well. Strean (1995) quotes a coach as indicating that, "the hardest part of coaching is the parents, you never please them, never" (p. 27). Also noted by Strean (1995), the coach discussed the support of the good parents, "the 90% you never talk about, that 90% are good supportive parents."

Related to satisfaction, Kelley and Gill (1993) examined the predictors of burnout in coaches. They found that social support was a strong predictor of burnout in coaches, among other predictors such as win/loss record. Martin, Kelley and Eklund (1999) used the Kelley and Gill (1993) study in developing a model based on stress and burnout in athletic directors. Their findings conflicted with Kelley and Gill as they did not find social support to be a significant predictor of burnout. This may be due to the nature of the hours and interaction difference between coaches (Kelley & Gill, 1993) and athletic directors (Martin et al., 1999). Social support may be more vital to coaches as they deal with athletes and parents on a daily basis. Athletic directors do much of their work behind the scenes, and social support may not be as relevant to stress and burnout. Reimer and Toon (2001) also measured social support, but they focused on the coach-athlete relationship. They tested the athlete satisfaction questionnaire (ASQ), and validated the result that positive social support behavior was predictive of higher athlete satisfaction ratings, although gender moderated the effect. Davis (2002) provided some new insight

into social support; he examined collegiate athletic director behaviors and coaches' ratings of satisfaction with their job. His findings revealed that organizational support was a strong predictor of coaches' satisfaction. Athletic director's personal characteristics did not produce a significant effect on coaches' satisfaction. The results outline a fairly compelling argument that social support has an effect on one's level of stress and satisfaction in particular situations. Finally, in assessing which type of social support (i.e., social pressure) or lack of social support leads to the highest level of stress, Scantling and Lackey (2005) examined the relationship between coaching turnover and stress through four decades in high school sports. They indicated that pressure and stress was rated higher on coaches in the 2000's than in the previous three decades, which would make social support even more important to satisfaction and retention of coaches now. Scantling and Lackey also indicated that for the past two decades, parents of athletes placed the most pressure on coaches, followed by the community/fans, and the organization. Athletes were rated last among sources of pressure for coaches. This finding may be relevant if coaches' efficacy beliefs are influenced more strongly by positive social support and not sources of pressure or perceived threat. Coaching by nature is a stressful environment, and strong leaders learn how to diffuse stress and channel the social support they need to be successful.

Leadership and Satisfaction

Satisfaction as an outcome has been utilized in various leadership studies based on the multidimensional model of leadership (Chelladurai, 1984; Chelladurai et al., 1988; Horne & Carron, 1985; Riemer & Chelladurai, 1995; Riemer & Toon, 2001). In Chelladurai's model, leader behaviors are suggested to be antecedents of member

satisfaction. The model proposes that the discrepancy between athletes' perceived and preferred leadership style would impact their level of satisfaction. Chelladurai (1984) found that divergence in leadership behavior for athletes in various sports was associated with three measures of satisfaction: satisfaction with performance, satisfaction with leadership, and satisfaction with overall involvement. While coaches may not provide a rating for satisfaction with leadership as they are the leader, satisfaction with performance and overall involvement may be a relevant measure of satisfaction for the coach. Horne and Carron (1985) studied the compatibility in coach–athlete dyads in Canadian university volleyball, basketball, track and field, and swimming athletes. They found that lower divergence between preferred and perceived training and instruction, social support, and rewarding leadership behaviors had higher levels of satisfaction. Also, lower discrepancies between athletes' perceived and preferred leadership behaviors led to increased success. These findings were important because success has been found to be associated with high athlete satisfaction.

Weiss and Friedrichs (1986) explored the influence of leader behaviors, coach attributes, and institutional variables on performance and satisfaction of collegiate basketball teams. They found that perceptions of all leader behavior dimensions were predictive of team and individual satisfaction scores, and democratic behavior and social support were the best forecasters of individual satisfaction. The link between social support and satisfaction has been developed and it would serve to reason that coaches would react to positive social support in the same way as athletes. Social support as one predictor to satisfaction makes sense, but understanding the relationship of satisfaction on other factors such as burnout, commitment and retention should be examined.

Job Satisfaction

Job satisfaction has been defined as the feelings a worker has about his or her job or job experiences in relation to previous experiences, current expectations or available alternatives (Balzer et al., 1997). Job satisfaction is generally explained by either content or process theories. Content theories are based on various specific measurable factors such as pay, co-worker relationships, and supervision, which influence job satisfaction. Process theories consider the process by which variables, such as expectancies, values and needs, relate with the job to produce job satisfaction. Process theories represent the interaction between these variables and their relationship to job satisfaction. Process theories of satisfaction seem to relate better to satisfaction with coaching in volunteer or non-professional settings. Additionally, expectancies, values and needs are also explained in Horn's (2002) model of coaching effectiveness.

Job satisfaction, as it relates to coaching, is an important factor given the relationship found between job satisfaction and retention. There is a litany of research that examines the relationship between satisfaction and turnover intentions of coaches. Additionally, turnover of coaches has typically revealed a performance decrement in teams. Dobson, Audas and Goddard (2002) examined the performance of British soccer teams and coaching changes over a 25-year period. They concluded that team performance suffers after a coaching change. Jacobs and Singell (1993) found similar results in assessing turnover of managers in major league baseball in that teams generally performed worse after a coaching change. Reasons for the performance decrement were not examined, but turnover did provide decrement to the athlete development and performance model. Goines (1997) also examined team performance after a turnover in

coaching in the NFL from 1984 to 1994. Goines's study confirmed the Jacobs and Singell (1993) study results that team performance decreases when coaches turnover. This provides evidence for the importance of retention in the coaching ranks.

Sagas and Batista (2001) studied male and female collegiate coaches and their turnover intentions. They found that there was no difference in satisfaction by sex, but did report that as job satisfaction increased, intent to leave coaching decreased. Hart, Hasbrook and Mathes (1986) examined the reasons for female coaches leaving the coaching profession. They cite reasons such as value orientation toward coaching, or that the cost does not equal the benefits. They did not find adequate results based upon their hypothesis but allude to the idea that it was not ineffectiveness, role conflict or discrimination. They did not examine coaches' cognitions about the coaching experience such as attraction or satisfaction.

Weiss and Stevens (1993) did assess the motivation and attrition of female coaches at the high school level through the framework of social exchange theory. They distinguished the motivation to coach with benefits, costs and satisfaction with coaching. Weiss and Stevens (1993) reported findings that satisfaction was related to retention of female coaches. Cunningham and Sagas (2003) also examined the turnover intentions of coaches. They presented results that indicated that inclusivity is a significant reason for turnover intentions. Inclusivity is measured as a coaching cognition related to the coaches' relationship to others in the athletic department. Finally, Surujlal, Singh and Hollander (2005) examined coaches' turnover intentions and commitment based upon ratings of job satisfaction. They reported that a higher level of job satisfaction was positively related to commitment and negatively related to turnover intentions. Smucker

and Whisenant (2005) examined the satisfaction of coaches by comparing content- and process-based approaches. They reported findings that suggest that coaches are more satisfied with process-based approaches due to self-referent comparison and find less satisfaction with content approaches (i.e., pay) due to referent comparison to other coaches. Thus, the coaches lack investment due to comparison to others in the organization.

Work Motivation

Maehr and Braskamp (1986) forwarded a theory of work motivation, dubbed *personal investment theory.* They describe its effect in organizational settings, especially the function among adults in work setting with a task incentive. They conclude that personal investment increases by knowing something about the cultural facets of an organization, and can predict an employee's job satisfaction and commitment. Further, Maehr and Braskamp (1986) determined that motivation has something to do with the inner energies of a person, and motivation drives and directs human behavior. Therefore, *personal investment theory* is generally concerned with how people choose to invest their energy, talent, and time in specific activities. Personal investment theory is a social cognitive theory that emphasizes the role played by social contexts in shaping motivation to participate. Additionally, the theory emphasizes the subjective meaning of situations as framed by one's belief systems, perceptions, goals and values, just as in Horn's model (2002). Maehr and Braskamp (1986) do consider the concept of motivation as it relates to obtaining a meaningful and satisfying existence. No single influence alone will determine a person's motivation and various extrinsic influences may be affecting personal

motivation (Maehr & Braskamp, 1986). A satisfying experience then should lead to greater satisfaction and higher levels of commitment.

Outcomes of Job Satisfaction

As previously mentioned, some of the related outcomes of satisfaction may include both positive and negative outcomes, such as commitment and burnout respectively. Raedeke (1997) first examined burnout as a function of commitment and satisfaction. He began by examining the levels of enjoyment, entrapment and commitment of swimmers. His findings suggest that feelings of entrapment lead to higher levels of burnout and less commitment. Raedeke, Granzyk, and Warren (2000) then forwarded the same theoretical model to coaches. They reported results that include higher levels of satisfaction indicate high levels of coaching commitment; high perceived entrapment feelings led to higher levels of burnout. Also, the greater perceived level of personal benefits and low costs correlated significantly with satisfaction. Raedeke, Warren and Granzyk (2002) followed the previous studies with a comparison of commitment, satisfaction and coaching turnover between current and former club swimming coaches. They determined that commitment and perceived benefits were significantly related to satisfaction in coaches. They also examined the differences between former and current coaches and determined that satisfaction provided a significant difference between the two groups, although they reported that both current and former coaches rated satisfaction highly. Many coaches indicated that coaching did not meet their personal needs.

Identifying burnout in coaches from the sport commitment model was established by Raedeke (2004) as a follow-up to his previous work. He reported that satisfied

coaches continued to experience attraction to coaching, and coaches that rated lower levels of satisfaction also increased in their level of feelings of entrapment and exhaustion. Therefore, examining a coach's level of satisfaction and attraction to coaching may be an important part of evaluating coaches, as it seems that positive and negative affect and cognitions do not change with time, unless another event is enacted, they only become stronger (Raedeke, 2004; Rushall, 2004). This may also have an effect on other cognitions such as efficacy.

Haugen and Short (2004) studied the relationship between coaching efficacy and burnout in high school basketball coaches. Their findings suggest that high efficacy coaches are less likely than lower efficacy coaches to suffer from burnout by the end of the season. In discussing coaching efficacy, efficacy and satisfaction have not previously been linked, but Cunningham, Sagas and Ashley (2003) did study the effect of coaching self-efficacy on turnover intentions, which has been related to satisfaction. They did not find support for their study, as efficacy had a very small relationship with turnover intentions. They postulate that other reasons may affect turnover intentions, such as satisfaction and commitment, which they did not measure in their study. Jaros (1997) did examine these measures and found support for satisfaction and commitment having a negative relationship with turnover intentions in non-sport organizations.

Summary

Coaching is a complex task that is affected by numerous factors, such as personal characteristics, cognitions, values, behavior and social interactions. The relationship of these factors affects both the development of coaches and the development of athletes. It is of the utmost importance to understand participation motives of both coaches and

athletes. Athletes have garnered much of the attention in sport literature. The motivation to coach needs to be thoroughly understood and satisfaction is one area of motivation that has been overlooked. The literature alludes to certain predictors of satisfaction in other areas of sport and organizations. This research should be adapted and applied to the sport context more specifically. If the majority of coaches are volunteers, then understanding the factors that affect their participation and retention should be evaluated. It does become imperative as the role of a coach is to further the development of our youth as athletes and people.

CHAPTER 3

Method

Study Design and Participants

This study was conducted using a survey questionnaire methodology and was quantitative in nature. Participants for this study were 512 (496 male, 16 female) amateur ice hockey coaches attending USA Hockey coaching certification clinics in the Northeastern and Midwestern United States. 560 coaches were provided questionnaires at the clinics, 23 exercised their right to refuse participation. 537 coaches filled out surveys, with 25 eliminated due to incomplete questionnaires. Tables 1-4 summarize the descriptive statistics for the participating coaches. Participants ranged in age from 17 to 65 years old (μ=37.93, *SD*=7.87). More than 97% of the coaches were white. Seventy-seven percent of the coaches coached athletes younger than 14 years of age, 3.9% coached athletes older than 18 years of age. The sample included 110 head coaches, while 402 identified themselves currently as assistant coaches. The mean years of coaching experience as a head coach was 1.09 years (*SD*=2.42) and experience as an assistant was 2.45 years (*SD*= 2.52), with 67.5% of coaches with no experience as a head coach and 46.1% having one year or less as an assistant. The average length of the coaches' previous total playing experience was 6.21 years, and encompassed youth through professional playing experience. This includes 40% of coaches with no playing experience at all, 40% reaching the high school level, 12.5 % playing collegiate hockey, and 1.5% playing professionally. An unexpected finding in the data indicated that 14.2% of the participants had no previous playing or coaching experience. The sample included 242 coaches who were USA Hockey Level 1 (initiation level) coaches, 129 who had

earned their Level 2 (introductory) certificate, 140 who were Level 3 (intermediate) coaches.

Table 1

Means, Standard Deviations and Range for Age, Years of Coaching and Playing Experience for the Participants

Variables *(N= 512)*	Mean	SD	Range
Age of Coach	37.93	7.87	17-65
Total years of coaching experience	3.54	3.87	0-32
Total years of playing experience	6.21	5.96	0-23
Years as Head Coach	1.09	2.42	0-20
Years as Assistant Coach	2.45	2.53	0-21
Years played youth hockey	4.28	4.47	0-17
Years played high school hockey	1.19	1.60	0-5
Years played junior hockey	.25	.76	0-4
Years played Major junior hockey	.02	.25	0-4
Years played college hockey	.31	.94	0-5
Years played professional hockey	.04	.41	0-7

Table 2

Frequency of Age Level of Teams Coached by Participants

Age group coached *(N=512)*	Frequency	Pct%
Under-10	160	32.1
Under-12	122	23.5
Under-14	111	21.5
Under-16	67	12.7
Under-18	32	6.3
Over-18	20	3.9

Table 3

Frequency Table for Sex and Ethnicity

Sex (N=512)	Male	Pct. Male	Female	Pct. Female
Team Coached	477	92.7	35	7.3
Coach	496	96.5	16	3.5
Ethnicity (N=512)	**Frequency**	**Percent**		
White	501	97.5		
African American	1	.2		
Native North American	4	.8		
Asian-American	2	.5		
Hispanic	2	.5		
Other	2	.5		

Table 4

Coaching Experience

Coaching Position	Frequency	Percent
Head Coach	110	23.0
Assistant Coach	402	77.0
Total	512	100.0
Experience as Head Coach	**Frequency**	**Percent**
None	346	67.7
1-2 years	94	18.3
3-5 years	44	8.7
6-10 years	21	4.2
11+ years	6	1.1
Experience as Assistant	**Frequency**	**Percent**
None	84	16.4
1-2 years	249	48.9
3-5 years	132	25.6
6-10 years	41	8.1
11+ years	6	1.1
Coaching Education Level	**Frequency**	**Percent**
Level 1- Initiation	242	47.5
Level 2- Introductory	129	25.2
Level 3- Intermediate	141	27.3
Playing Experience	**Frequency**	**Percent**
Youth hockey	312	
High School hockey	217	
Junior hockey	71	
Major junior hockey	5	
College hockey	66	
Professional hockey	8	

Instrumentation

Coaching Efficacy Scale (Feltz et al., 1999; see Appendix A). The CES is a 24-item multidimensional scale that was designed to measure a hierarchical model of coaching efficacy that indicated a four first-order factor structure converging to a second-order general factor of total coaching efficacy (TCE) (Myers et al., 2005). The four first-order factors include: GSE, ME, TE and CBE. Feltz et al. (1999) reported a confirmatory factor analysis (CFA) that revealed all significant parameter estimates ($p < .01$) for the first order factor structure, all R^2 values surpassed .40, and the results indicated an acceptable fit of the model using appropriate global indices of non-normed fit index (NNFI) =.88, comparative fit index (CFI) = .89, root-mean-square residual error of approximation (RMREA) = .08. The second-order CFA indices regarding total coaching efficacy differed slightly, but were also readily acceptable. Lee et al. (2002) and Sullivan and Kent (2003) also found adequate goodness of fit tests for the model. Additionally, internal consistency estimates of .93 for the total CES and .90, .88, .89, and .87 for the subscales of motivation, technique, character building, and game strategy, respectively, were reported by Feltz et al. (1999). Subsequent studies utilizing the CES, as well as internal reliability alphas for this study are summarized in Table 5. In each of these studies Cronbach's α's are greater than .70, which is the generally acceptable minimum criterion according to Nunnally (1970).

Table 5

Internal Consistency Estimates for CES Dimensions

Study	TCE	ME	GSE	TE	CBE
Feltz et al. (1999)	.93	.90	.87	.88	.89
Malete & Feltz (2000)	n/a	.92	.88	.82	.93
Kent & Sullivan (2003)	n/a	.90	.87	.84	.87
Myers, Tonsing, & Feltz (2005)	.94	.90	.92	.84	.87
Paiement (2005)	.89	.88	.91	.88	.84

The construction of the CES follows Bandura's (1997) suggestions for ascertaining valid efficacy beliefs including confidence in specific behaviors relevant to the overall construct being measured. Each scale item begins with the stem "How confident are you in your ability to...." Specific examples of coaching efficacy questions include "How confident are you in your ability to understand competitive strategies?" (GSE). "How confident are you in your ability to detect skill errors?" (TE), "How confident are you in your ability to maintain confidence in your athletes?" (ME), and "How confident are you in your ability to instill an attitude of respect for others?" (CBE).

A 5-point Likert-scale ranging from no confidence (1) to complete confidence (5) was used to assess coaching efficacy. This varies from the previously mentioned coaching efficacy studies, which employed a 10-point Likert-scale. Myers, Wolfe and Feltz (2005) examined the range that coaches used within the 10-point scale version of the CES, and discovered that coaches failed to utilize 0-4 (which indicates low levels of efficacy) at a high enough frequency to warrant the inclusion of these lower-end categories. Myers, Wolfe and Feltz (2005) suggested that employing a smaller scale would allow for coaches to differentiate more readily between categories, and is within the recommendations of the use of the Likert-scale (Likert, 1932). Furthermore, utilizing

a scale that includes no-confidence as the lowest rating was deemed appropriate as a considerable proportion of participants (40%) had no previous experience coaching.

An additional note of caution was considered in this study with utilizing the CES in its current format. Myers Wolfe and Feltz (2005) warned against the structural validity of the second-order factor of total coaching efficacy in favor of the four first-order factors in most research featuring the CES. They provided psychometric evidence suggesting that TCE should only be used when ascertaining outcomes in which total coaching efficacy is one of several predictors. However, TCE was used in the current study as the criterion variable of sources of satisfaction information and evidence showing significant relationships between sources and TCE exists (Feltz et al., 1999; Myers, Wolfe and Feltz, 2005).

Demographic Questionnaire (Appendix B). A demographic questionnaire was designed for this study. The questionnaire solicited descriptive information on each coach including: sex, age, sex of team coached, and ethnicity. Additionally, educational background (level of formal education obtained), specific level of the USA Hockey Coaching Education program (I-V) currently attained, present coaching position (Head or Assistant), and number of years experience as a coach and hockey player at various levels (youth, high school, junior, college, professional) were also included. Finally, hours of preparation time devoted to coaching each week, and a question to confirm that coaches were amateur and not paid for their services concluded the demographic survey.

Satisfaction. (Appendix C). The need to develop a satisfaction measure for this study was necessary, as no previously constructed measure of satisfaction was sufficient for the research question. Modifying a measure such as the Athlete Satisfaction

Questionnaire (ASQ; Reimer & Chelladurai, 1998) posed problems because their complex 15-dimension, 56-item structure encompassed many specific areas that were not modifiable to coaching satisfaction. Chelladurai and Ogasawara (2003) developed a coaching satisfaction questionnaire that was somewhat related to the ASQ, but it too was unsatisfactory within the context of this study. Theoretically, the Chelladurai and Ogasawara questionnaire bases its focus on human resource management theory (Dawis & Lofquist, 1984; Smith, Kendall, & Hulin, 1969). Thus, the dimensions developed in their study were more theoretically similar to job satisfaction and content theory measures of professional coaches, which focuses on external factors that affect satisfaction. The intention of this study was based in social cognitive theory, and reciprocal determinism in which satisfaction is due to the interaction experience and that experience will modify the consequent behavior and influence perseverance to continue the task of coaching. The dimensions that Chelladurai and Ogasawara (2003) identified include such categories as: *satisfaction with pay, job security, supervision, facilities, and media support.* Although two categories within their questionnaire may be appropriate, *coaching job* and *team performance*, structurally, all of the dimensions should be utilized as intended to retain validity. Therefore, this questionnaire was deemed inappropriate for this reason and because the population sampled in the current study was comprised of volunteer coaches of youth sport, not collegiate coaches performing their specified professional job duties. Additionally, volunteer satisfaction questionnaires, such as the one designed by Farrell et al. (1998) were not appropriate to utilize. Although volunteer motivation is a relevant topic to this population, youth sport coaches have a significant level of interaction with the athletes and influence on the athletes' subsequent

performance. Influence and interaction are not measured in volunteer satisfaction questionnaires. The dimensions of volunteer satisfaction focus on communication with organizers and other volunteers, as well as recognition for contribution to the activity.

Without a coaching satisfaction questionnaire that provided the necessary questions to fit the intended population, it was imperative to develop an acceptable measure of coaching satisfaction for this study. There is speculation that commitment, success, enjoyment, and knowledge may be central themes to the process of coaching and satisfaction with said process (Raedeke, 2004; Raedeke, Warren & Granzyk, 2002). For the present study, the coaches' perception of satisfaction with their coaching performance was assessed by developing a measurement tool derived by modifying the athlete perception scale originally constructed by Smoll, Smith, Curtis, and Hunt (1978). Originally, a seven question instrument was adapted. The items regarded success, enjoyment, knowledge, commitment and perceived attraction. The seven-item scale developed for this study was modified from Smoll et al.'s (1978) measure that assessed athletes' satisfaction with several aspects of the coach and coaching behaviors.

The measure used in the current study included a 10-point Likert-scale to address the coaches' satisfaction with coaching and with their team. Examples of modified items in this scale from the original Smoll et al. (1978) scale are "How much do you like playing baseball?" [original] to "How much do you enjoy coaching hockey?"[modified] and "How good is your head coach at teaching kids how to play baseball?"[original] to "How much do you know about coaching kids?"[modified]. After developing the modified seven-item measure and collecting data, a principle components analysis (PCA) with oblique rotation was conducted to assess the factor structure. Results of the PCA

revealed a single factor with five items that could be interpreted to assess satisfaction and had an eigenvalue of 2.473 that explained 49.47% of the variance. Two questions regarding perceived attraction (questions 3&4) were not included in the factor for two reasons. The first reason is a lack of statistical evidence of a contribution to the factor structure. The second reason is conceptual, athlete attraction to the coach is not a perception made by the coach about his or her experience, as the other five items were. A CFA was conducted on the remaining five items. The five-item factor returned an eigenvalue of 4.878 and explained 97.6% of the variance. Factor loadings from the CFA are included in Table 6.

Table 6

Factor Loadings for Satisfaction Measure

Item	Factor
Success	.70
Enjoyment	.99
Commitment	.77
Knowledge hockey	.95
Knowledge coaching	.70

Team ability and team improvement (Appendix C). In addition to the satisfaction measures, coaches were also asked to rate the ability of their team and to rate their perceptions of their athletes' level of improvement over the course of the season. The team ability measure was taken from Park's (1992) one-item measure of overall perceived ability of the team, "How would you rate the overall ability of the athletes on your team this year?" Feltz et al. (1999) reported test-retest reliability of this question at .83. Myers, Wolfe and Feltz (2005) also utilized this measure, but cautioned that need for

more items to assess the construct of team abilities may be warranted. The current questionnaire also assessed the coach's perception of the team's improvement. The improvement question was "How would you rate the overall improvement of your athletes so far this season?" Perceived team improvement was used as an indicator of team success instead of the past winning percentage variable that Feltz et al. (1999) and Myers, Tonsing and Feltz (2005) used because in youth sport settings, team records are not public knowledge or archived after a season, and athlete improvement may be as salient to the coaches as winning. Both perceived team ability and perceived team improvement were measured on a 10-point Likert scale ranging from 0 (poor) to 10 (excellent).

Support (Park, 1992; Appendix C). Park (1992) also developed a social support questionnaire, which contained five questions regarding coaches' perceptions of support for their teams from their athletic director, faculty, students, parents, and the community. Each support question was scored on a 10-point Likert scale ranging from "not at all supportive" (0) to "extremely supportive" (9). This cognitive appraisal of social support has been shown to be predictive of coaches' efficacy beliefs (Feltz et al., 1999; Myers, Tonsing, & Feltz, 2005). Additionally, Feltz et al. (1999) indicated acceptable levels of test-retest reliability of .80-.89 for the five items of social support. In the current study, a four-item questionnaire was used to assess social support on a 10-point Likert-scale ranging from 0 (poor) to 9 (excellent), to rate their perception of the level of support given to them by appropriate significant others. In amateur ice hockey, the coach has four groups that hold an interest in their programs. The four groups include the athletes on the team, the parents of the athletes on the team, the local youth hockey organization they

represent, and the local community as a whole. The 10-point Likert-scale was used within this measure because evidence suggests that coaches' ratings of factors external to themselves (i.e., community support) encourage the utilization of the full range of the scale (Feltz et al., 1999; Myers, Wolfe & Feltz, 2005).

Procedure

Permission to conduct the study was granted by the University's Institutional Review Board (see Appendix E) and USA Hockey. The participants were recruited from USA Hockey Level 1, 2, and 3 coaching clinics in the Midwestern and Northeastern United States that were held within the final six weeks of the 6-month long season. The sample included respondents who were participants at the coaching clinics; the level 1 clinic was an initiation level and is targeted at first-year coaches. Level 2 clinics are called introductory level and are for more experience coaches, level 3 clinics are for intermediate level coaches with at least three years of coaching experience. The timing of data collection was selected to allow participants to gain the experience necessary to accurately assess their perceptions of efficacy, satisfaction, social support, and athlete improvement. Participation in this study was requested during the welcome statement of the coaching clinic. All coaches in attendance (560 total) at the clinics were then provided with a consent form (see Appendix D) and the coaching efficacy, satisfaction, and demographic questionnaires. Instructions were read aloud to the participants, including the right to refuse participation. Following the instruction period, the coaches were given 15 minutes to complete the questionnaires. All consent forms and questionnaires were then collected, including blank forms from coaches who refused to participate.

Data Analysis

Data analysis was conducted in a three-step process. The first step involved the examination of data for missing data points, outliers, and tests of the assumptions of normality. Missing data were handled after assessing the effect and trend of the missing data. The effect and seriousness of missing data depends on several factors: the size of the data set, the number of missing cases within that set, and the randomness of the missing data (Tabachnick & Fidell, 2001). The size of the original data set was large (N=537) and the number of missing cases was small (1.5%); therefore, there was no danger of a significant loss of statistical power do to missing data. Upon in-depth examination of these missing cases, I determined that the missing values were distributed randomly throughout the entire sample. The analyses for outliers and normality were done by creating frequency tables and graphs, examining means, variance, kurtosis and skewness statistics for all variables collected. Results for these tests are presented in Chapter 4, Table 7.

The second step in data analysis included the calculation of descriptive statistics for the relevant variables utilized in testing the hypotheses. Pearson-product moment correlations were calculated for all of the predictor variables with the four dimensions of coaching efficacy and satisfaction to determine (a) if there was a sufficient relationship between each predictor variable and each criterion variable to warrant inclusion in tests of the hypotheses, (b) if there was a sufficient relationship between each predictor variable and TCE for the latter to be used as the single measure of coaching efficacy, and (c) if there was any possible mutlicollinearity among the predictor variables.

The third step in the data analysis examined the four hypotheses. First a correlation matrix was created with the predictors and the coaching efficacy dimensions. The predictor variables showed significant correlations with most of the dimensions of TCE and also with TCE, therefore the first hypothesis that *coaching education, coaching experience, playing experience, perceived ability of the team, perceived skill improvement of the team, social support, and age of the coach are all significant predictors of coaching efficacy*, was tested with a univariate multiple regression (MR) analysis with TCE as the criterion variable. Further examination of the correlations suggested that the four dimensions of the CES should also be assessed as criterion variables, then a multivariate multiple regression (MMR) analysis was to used to test the first hypothesis. Although it is a reasonable assumption that gender also would be a predictor of coaching efficacy, for this study gender was not used because of the small number of female coaches.

The second hypothesis, i.e., *coaching education, coaching experience, playing experience, perceived ability of the team, perceived skill improvement of the team, social support, and age of the coach are all significant predictors of satisfaction with coaching,* was tested with a MR analysis with coaching satisfaction as the criterion variable after a correlation matrix was created to confirm the presence of a relationship of the variables with coaching satisfaction. The third hypothesis, *coaching efficacy positively predicts satisfaction with coaching*, stated a bivariate relationship and was tested with a bivariate regression analysis.

The fourth hypothesis, which states that, *coaching efficacy is a significant mediator of the sources of coaching efficacy information and coaching satisfaction*, was tested first by using criteria set forth by Barron and Kenney (1986) for determining the mediating influence of a variable. According to Barron and Kenney, three conditions must

be met to demonstrate the mediating influence of coaching efficacy. The first condition is that the sources of efficacy must significantly predict coaching efficacy. The second condition to be met is that the sources of efficacy must significantly predict coaching satisfaction. The third step is that coaching efficacy must predict coaching satisfaction and the effect of the sources of efficacy information must be altered when coaching efficacy is entered into the equation. In addition to the Barron and Kenney procedure, a path analysis was conducted using AMOS 5.0 to test the overall model fit. The fit indices included chi-square statistic (χ^2), the Non-normed Fit (NNFI), the Comparative Fit (CFI), and Root Mean Square Residual Error of Approximation (RMSEA).

CHAPTER 4

Results

The results are presented in several sections, beginning with the preliminary analysis to evaluate the accuracy of the data. The second section presents descriptive data for the participants and correlations among the variables to determine if there were sufficient relationships to warrant their inclusion in tests of the hypotheses. The third section presents the results of the hypotheses and a path analysis for the proposed model in Hypothesis 4.

Preliminary Analyses

The preliminary analyses were conducted to evaluate the effect of missing data, the accuracy of data entry, and normalcy of the data. Initial data entry was performed using SPSS 13.0; all data were coded and entered into an SPSS spreadsheet. There were very few instances of missing data within any individual questionnaire, and only three participants omitted answers from an entire section located on a single separate page. The omitted sections indicate that these particular participants were not thorough in answering the questionnaire, but the omission appeared to be random. Furthermore, no other participant questionnaire included more than three missing data points. Due to the high number of participants, I decided a listwise elimination was appropriate for any subject who provided missing data. The listwise elimination then presented an N of 512 for the following analyses.

The data were analyzed for incorrect entry and outliers using descriptive and frequency analyses, as well as visual comparison between questionnaires and the data

spreadsheet. An inspection of the minimum and maximum values for out of range and outlying values was completed. Results indicated that no incorrect values were entered, and the entire range of answers was used in the completion of the instruments. The treatment of potential outliers within this study was not of concern as initial descriptive analyses indicated that the entire range within the Likert-scale was used on cognitive questionnaires and values entered in the demographic questionnaire were within the expected range. Skewness and kurtosis values for each of the variables were examined to assess the assumption of normality (see Table 7). The variables' skewness values for the measures ranged from -.13 to -89, and kurtosis values ranged from .95 to -.57. The skewness and kurtosis values for the variables were different from zero, indicating that none of the distributions was perfectly normal, although all of the values were within +/-1 *SD*, so reasonable assumptions about normality could be made, as this indicates that no substantial departure from normality occurred (Tabachnick & Fiddell, 2001).

Table 7

Summary Statistics for Normality

Variable	N	Skewness	Kurtosis
Coaching Efficacy	512	-.18	.68
Motivation Efficacy	512	-.24	.29
Teaching Efficacy	512	-.25	-.23
Game Strategy Efficacy	512	-.13	.50
Character Building Efficacy	512	-.32	-.58
Support of the athletes on the team	512	-.62	.47
Support of my parents	512	-.85	.95
Support of my local community	512	-.58	.26
Support of the hockey organization	512	-.88	.86
Perception of team ability	512	-.51	.67
Perception of team improvement	512	-.64	.92
Coaching Satisfaction	512	-.81	.82

Descriptive Statistics

Descriptive statistics for the subscales of coaching efficacy, proposed sources of efficacy, and coaching satisfaction are presented in Table 8. The values for each of the variables and the related statistics appear to be representative of the expected responses by the population of respondents. There are some specific values that may be of particular interest. Specifically, the disparity among support measures, with support from the athletes (M= 7.07, SD= 1.16) having the highest average and lowest disparity, and the support from the local community (M= 5.81, SD=1.81) presenting the lowest mean and the highest dispersion among the four social support measures. The perception of team ability (M= 5.62, SD=1.42) and team improvement (M= 6.66, SD=1.30) also provided ample dispersion and a moderate difference in means among the coaches' perceptions of the two performance measures regarding athletes. Additionally, coaching satisfaction (M= 7.14, SD=.92) was rated as relatively high and the dispersion among scores was relatively low, indicating that on the whole coaches are fairly satisfied with their experience coaching youth sports. The efficacy scales also provided some insight; character building efficacy was rated exceptionally high on a 5-point scale (M=4.31; SD .55), while game strategy efficacy was rated considerably lower (M=3.49; SD=.64).

Table 8

Descriptive Statistics for Sources of Support, Satisfaction and Coaching Efficacy

Variable	*N*	*M*	SD	Minimum	Maximum
Total Coaching Efficacy	512	3.83	.51	1.67	5.00
Motivation Efficacy	512	3.85	.53	1.86	5.00
Teaching Efficacy	512	3.65	.71	1.20	5.00
Game Strategy Efficacy	512	3.49	.64	1.00	5.00
Character Building Efficacy	512	4.31	.55	2.75	5.00
Support of the athletes on the team	512	7.07	1.16	2.00	9.00
Support of the parents	512	6.51	1.55	.00	9.00
Support of my local community	512	5.81	1.81	.00	9.00
Support of the hockey organization	512	6.38	1.68	.00	9.00
Perception of team ability	512	5.62	1.42	1.00	9.00
Perception of team improvement	512	6.66	1.30	1.00	9.00
Coaching Satisfaction	512	7.14	.92	3.40	9.00

Correlations among the Predictor and Criterion Variables

In an attempt to ascertain which predictors showed sufficient relationship with coaching efficacy and coaching satisfaction and whether there was any multicollinearity among them, Pearson-product moment correlations were calculated for all variables. To assess the relationship between social support and coaching efficacy, Pearson-product moment correlations were calculated for all four social support items and the four dimensions of coaching efficacy. Results indicated that all areas of social support correlated significantly with all four subdomains of coaching efficacy. Given the consistency of the correlations, total support ($r = .35$) was used as the variable to represent social support as a source of coaching efficacy. Table 9 displays the correlations between coaching efficacy and social support.

Table 9

Pearson Correlation Coefficients between Coaching Efficacy and Social Support

Social Support	Coach Satisfaction	Total Coaching Efficacy	Coaching Efficacy			
			Motivation	Technique	Game Strategy	Character Building
Total Support	.41*	.35*	.37*	.22*	.25*	.32*
Parents	.34*	.24*	.25*	.14*	.19*	.21*
Community	.26*	.19*	.21*	.13*	.12*	.21*
Organization	.29*	.26*	.28*	.18*	.17*	.25*
Athletes	.44*	.37*	.40*	.23*	.28*	.31*

* Correlation is significant at the 0.01 level (2-tailed).

Pearson-product moment correlations were also used to asses the relationships among the other predictor variables, coaching efficacy dimensions, and coaching satisfaction. Results are presented in Table 10. Results indicate that all the proposed predictors correlated significantly with TCE and GSE. Playing experience produced high correlations with TCE (*r= .38),* TE (*r= .55)* and GSE (*r=.39).* This analysis provided enough evidence to make a reasonable assumption that all sources should be included in the MR using TCE as the criterion variable for Hypothesis 1 and coaching satisfaction for Hypothesis 2. Furthermore, none of the correlations were high enough to consider the threat of multicollinearity.

Table 10

Pearson Correlation Coefficients for Coaching Efficacy and Sources

Sources	Coaching Satisfaction	Total Coaching Efficacy	Motivation	Coaching Efficacy		
				Teaching	Game Strategy	Character Building
Playing experience	.29**	.38**	.12**	.55**	.39**	.05
Coaching experience	.30**	.24**	.17**	.20**	.26**	.12**
Age of Coach	-.14**	-.16**	-.04	-.28**	-.19**	.06
Coaching Education Level	16**	15**	.07	.13**	.19**	.08
Team ability	.27**	.15**	.17**	.08	.16**	.07
Team Improvement	.31**	.28**	.26**	.23**	.21**	.19**

** Correlation is significant at the 0.01 level (2-tailed).
* Correlation is significant at the 0.05 level (2-tailed).

Tests of the Hypotheses

The first hypothesis stated that *coaching education, coaching experience, playing experience, perceived ability of the team, perceived skill improvement of the team, social support, and age of the coach are all significant predictors of coaching efficacy.* This hypothesis was tested in a MR analysis using all seven predictors and TCE as the criterion variable. Results indicated that the MR produced a significant result, $F(7, 505) = 30.71$; $p < .0001$) and a strong predictive relationship ($R = .55$; $R^2 = .30$) thus supporting the hypothesis. The strongest predictors of TCE within the MR were social support ($\beta = .23$) and playing experience ($\beta = .29$). Only coaching education level ($\beta = .07$, $p = .121$) and team ability ($\beta = -.05$, $p = .314$) were non-significant in the MR.

The second hypothesis stated that *coaching education, coaching experience, playing experience, perceived ability of the team, perceived skill improvement of the team, social support, and age of the coach are all significant predictors of satisfaction with coaching*. This hypothesis also was tested using all seven predictors and coaching satisfaction as the criterion variable. Results indicated that the MR produced a significant result, $F\ (7, 505) = 36.91;\ p < .0001)$, and a strong predictive relationship ($R = .58;\ R^2 = .34$) thus supporting the hypothesis. The strongest predictors of TCE within the MR were social support ($\beta = .30$) and coaching experience ($\beta = .25$). Again, coaching education level ($\beta = .05$, p= .250) and team ability ($\beta = .06$, p= .141) were non-significant in the MR.

The third hypothesis stated a bivariate relationship between coaching efficacy and coaching satisfaction and was tested using a bivariate regression with TCE as the predictor variable. The result of a linear regression of coaching efficacy on satisfaction indicated a significant result, $F(1, 505) = 431.41;\ p < .0001$, and a strong predictive relationship ($R^2 = .45; \beta = .67$) thus supporting the hypothesis.

The fourth hypothesis stated that the role of coaching efficacy was mediational between the predictors and satisfaction, as was indicted in Chapter 1. Therefore, an analysis was conducted to test the application of the conditions set forth for a mediational relationship by Barron and Kenney (1986). The previous multiple regressions provided information about the specific strength of the predictors of coaching efficacy and satisfaction. The predictors found to have a significant contribution included: social support, team improvement, playing experience, coaching experience, and age of coach. Coaching education level and team ability were not included, as their contribution was

not supported in the previous multiple regressions. The predictors were then subjected to additional MR analyses with coaching satisfaction as the criterion variable while controlling for coaching efficacy to test the mediational relationship prior to conducting a path analysis.

Results for the MR on coaching satisfaction while controlling for coaching efficacy revealed that social support and coaching experience were at least partially mediated by coaching efficacy. Furthermore, the influence of playing experience, team improvement and the age of the coach on coaching satisfaction was completely mediated by coaching efficacy. Results for all three analyses are presented in Table 11.

Table 11

Results for Univariate Regressions for Mediational Effect of Coaching Efficacy

	Coach Efficacy		Coaching Satisfaction		Control for Coaching Efficacy	
Predictors	β	P	β	P	β	P
Social Support	.23	.000	.29	.000	.17	.000
Coaching Education Level	.065	.121	.047	.250	.013	.707
Coaching Experience	.190	.000	.247	.000	.151	.000
Playing Experience	.286	.000	.214	.000	.066	.063
Team Improvement	.195	.000	.141	.001	.042	.256
Age of Coach	-.098	.001	-.109	.009	-.060	.092
Team Ability	-.045	.314	.064	.142	.087	.018
Coaching Efficacy			.514	.000		

The previous analyses provided evidence to include the significant predictors from the univariate regression analyses in the path analysis as modeled below in Figure 5.

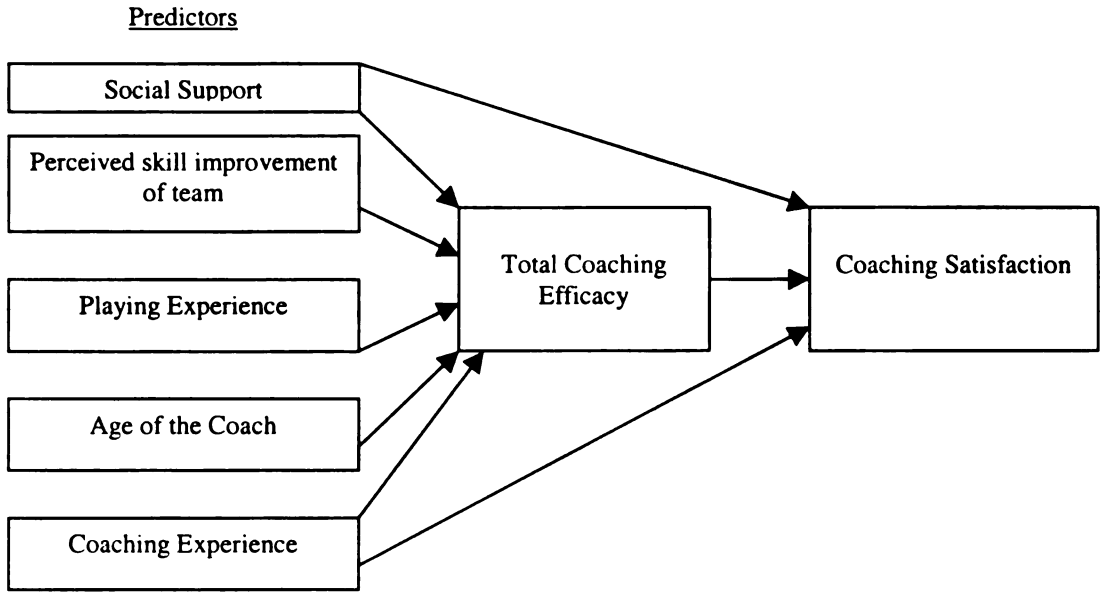

Figure 5. Proposed model for the path analysis

Path analysis

The path analysis was designed to measure the relationship between the coaches' sources of efficacy information, coaching efficacy, and coaching satisfaction. The path analysis was performed using AMOS 5.0. The full model was put forth in the initial analysis and included social support *(β =.275)*, team improvement *(β =.179)*, playing experience *(β =.296)*, age of coach *(β =-.103)* and coaching experience *(β =.197)* as predictors of TCE and social support *(β =.216)*, coaching experience *(β =.141)* and TCE *(β=.563)* as predictors of coaching satisfaction. The initial path analysis revealed a poor fit, χ^2 (13) =266.5; age of coach was the weakest variable (β=-.006, p =.008). The NNFI (.69) and CFI (.68) were significantly less than .90, which is the generally accepted limit to good fit of a path model. The RMSEA should be under .08, but was also not considered a good fit (RMSEA= .191). A second analysis was conducted after reducing

the model by eliminating age of coach as a predictor variable. The global fit indices were considerably improved, but still inadequate regarding the generally accepted levels. The chi-square was greatly reduced but still large, χ^2 (8) = 120.91, p <.001, the NNFI (.83) and CFI (.83) were also improved but less than the accepted .90. The RMSEA was still not considered a good fit (RMSEA= .162). The previous data in the multiple regressions as well as the Pearson-product moment correlations were re-examined in an attempt to provide a lucid model. It was determined that only the predictors that provide little or no influence would be reduced. The previous conceptual arguments for the importance of efficacy sources and the small beta weight indicated that team improvement could be reduced.

The further reduced model was examined as the final path analysis was conducted. This model included social support and coaching experience as partially mediated by coaching efficacy and playing experience being fully mediated by coaching efficacy. The global fit indices produced accepted levels for a good fit, the chi-square was significant, χ^2 (4) = 15.96, p =.003. The NNFI = .98, the CFI = .98 were also significantly higher than .90. The RMSEA (.075) was also a good fit because it was lower than the acceptable level of .08. Therefore, the data examined did create a more acceptable fit by reducing the model. The final path analysis included social support *(β =.323)*, playing experience *(β =.334)*, and coaching experience *(β =.183)* as predictors of TCE and social support *(β =.213)*, coaching experience *(β =.139)* and TCE *(β=.568)* as predictors of coaching satisfaction. The reduced model is presented in Figure 6.

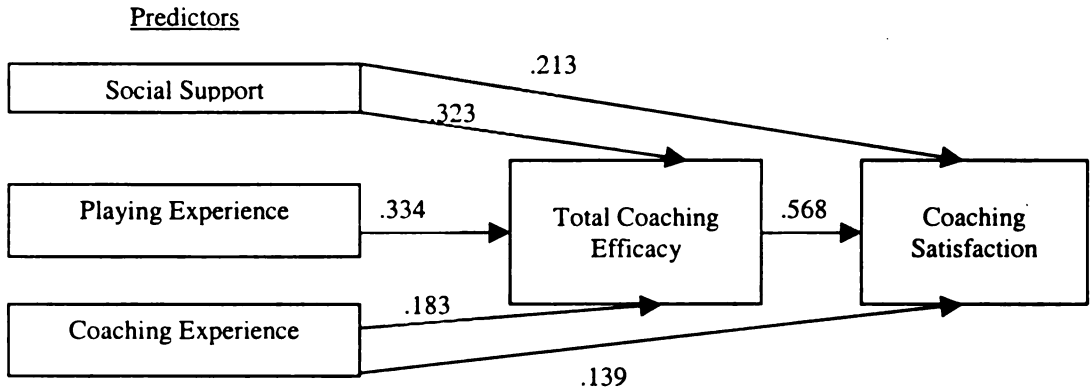

Figure 6. Significant Parameter Estimates for the Reduced Model

Exploratory Analysis for Coaching Education

Due to the nature of the research questions, the importance of coaching education, previous research on coaching education and coaching efficacy (Malete & Feltz, 2000) and the recruitment of the participants at a coaching education program, an exploratory analysis was conducted to assess the influence of coaching education level (1-3) on coaching efficacy and coaching satisfaction. Tables 12 and 13 display the means and standard deviations for each of the coaching education levels, coaching efficacy and satisfaction. A MANOVA was conducted with the three levels of USA Hockey coaching education as the independent variable. Coaching education level was significant, *Wilks* $\lambda = .934$; $F(12,1038) = 3.02$, $p < .001$. Total coaching efficacy, $F(2,509) = 7.51$, $p = .001$, and satisfaction, $F(2,509) = 7.33$, $p = .001$ were also significant. The first order factors of coaching efficacy were also analyzed. Game strategy efficacy, $F(2,509) = 11.12$, $p < .001$, technique efficacy, $F(2,509) = 4.16$, $p = .016$, and character building efficacy, $F(2,509) = 3.71$, $p = .025$, provided a significant result. Only motivation efficacy, $F(2,509) = 2.31$, $p = .101$, was not significant. Results for the MANOVA are reported in Table 14.

Table 12

Means and Standard Deviations for Coaching Education Level

	Coaching Ed Level	N	Mean	Std. Dev
Coaching Efficacy	Initiation- I	242	3.76	.53
	Introductory- II	129	3.77	.42
	Intermediate- III	141	3.95	.47
	Total	512	3.81	.49
Satisfaction	Initiation- I	242	6.99	.96
	Introductory- II	129	7.21	.77
	Intermediate- III	141	7.35	1.04
	Total	512	7.15	.95

Table 13

Means and Standard Deviations for Coaching Education Level and First-Order Factors of Coaching Efficacy

	Coach Ed Level	N	Mean	SD
Efficacy	Introductory- II	129	3.82	.50
	Intermediate- III	141	3.95	.50
	Total	512	3.88	.53
Teaching Efficacy	Initiation- I	242	3.60	.77
	Introductory- II	129	3.66	.65
	Intermediate- III	141	3.82	.69
Game Strategy Efficacy	Initiation- I	242	3.47	.72
	Introductory- II	129	3.51	.55
	Intermediate- III	141	3.78	.58
	Total	512	3.57	.65
Character Building Efficacy	Initiation- I	242	4.28	.51
	Introductory- II	129	4.21	.51
	Intermediate- III	141	4.38	.58
	Total	512	4.29	.53

Table 14

Multivariate Analysis of Variance of Coaching Education Program Level

Coaching Education Level	Sum Sq	Df	M Sq	F	Sig.
Satisfaction	12.940	2	6.470	7.333	.001
Coaching Efficacy	3.569	2	1.785	7.507	.001
Motivation Efficacy	1.280	2	.640	2.305	.101
Teaching Efficacy	4.289	2	2.145	4.157	.016
Game Strategy Efficacy	9.164	2	4.582	11.124	.000
Character Building Efficacy	2.095	2	1.048	3.709	.025

Although conceptually three levels of coaching education were represented in this sample, it would be naïve to assume that coaching education was independent of coaching experience, as the CEP program presented to the participants was also a year by year progressive certification program (i.e., level 1 is taken in the first year, level 2 is taken in the second year). Therefore, a MANOVA was conducted on coaching efficacy with coaching education level as the independent variable and coaching experience as the covariate. Coaching education level when controlling for coaching experience was not significant, *Wilks* $\lambda = .966$; $F(12,1038) = 1.52$, $p = .112$. Neither total coaching efficacy nor satisfaction provided significant results. Additionally, of the first order factors of coaching efficacy only game strategy efficacy was significant, $R^2 = .08$, $F(2,509) = 3.22$, $p = .041$. This indicates that coaching education level may not have an effect on coaching efficacy beyond what they obtain through experience, except when considering game strategy.

Results for the MANOVA controlling for coaching experience are presented in Table 15.

Table 15

Multivariate Analysis of Variance of Coaching Education Program Level while Controlling for Years of Coaching Experience

Coaching Education Level	Sum Sq	Df	M Sq	F	Sig.
Satisfaction	2.001	2	1.000	1.205	.300
Coaching Efficacy	.808	2	.404	1.764	.172
Motivation Efficacy	.264	2	.132	.486	.615
Teaching Efficacy	.615	2	.307	.610	.544
Game Strategy Efficacy	2.550	2	1.275	3.221	.041
Character Building Efficacy	1.176	2	.588	2.095	.124

Summary

In summary, in this study increased levels of social support, playing experience, and coaching experience predicted higher ratings of total coaching efficacy. Additionally, increased levels of social support, more coaching experience and higher ratings of total coaching efficacy served as predictors of higher ratings of satisfaction with coaching. Furthermore, coaching education may not have an effect on coaching efficacy when controlling for years of coaching experience.

CHAPTER 5

Discussion

The purpose of this study was to investigate the relationship between coaching efficacy and coaching satisfaction, and their relationships to personal characteristics (i.e., experience, age, etc.) of youth hockey coaches within the framework of the Feltz et al. (1999) model. The first hypothesis stated that coaching efficacy of volunteer youth coaches would be predicted by the seven sources outlined in the models. Support was found for this hypothesis with previous coaching experience, social support and playing experience providing the most efficacy information to youth hockey coaches. Team improvement was also a significant predictor, but did not provide a large contribution to the equation. Age of the coach was significant and provided a small contribution. Although, age was negatively correlated with coaching efficacy and coaching education, indicating that younger coaches perceived higher levels of efficacy and had achieved higher levels of coaching education, which may contribute to higher efficacy beliefs. However, coaching education level and team ability did not provide a significant contribution to coaching efficacy in this study.

These findings support Feltz et al.'s (1999) model and their previous research that social support and coaching experience appear to be important sources of coaching efficacy. Social support and coaching experience have consistently been revealed to predict coaching efficacy. Myers et al. (2005) provided evidence that social support and coaching experience were relevant sources of efficacy information. Feltz et al. examined high school coaches, while Myers et al. (2005) examined collegiate coaches. Therefore,

one would assume that social support and coaching experience are fairly stable and consistent predictors in any coaching situation. Marback et al. (2005) also found support for coaching experience and support from athletes as significant predictors of coaching efficacy. Social support as a source of coaching efficacy in youth sport coaches is not a surprising result. Social support, or lack thereof, can be found in comments made by players, parents, or organizational leaders to the coach, as well as body language and actions directed at the coach or made to additional significant others. Although, coaches with higher efficacy may also command more respect from parents. If the type of behavior exhibited by parents is perceived as positive, the coach garners that information as positive approval of his or her coaching actions, which in turn boosts the coach's level of efficacy.

Previous coaching experience was also supported, and according to Bandura, (1997) is the most salient source of information on which to base efficacy judgments. In general, a coach with more experience will have developed methods of teaching skills, manipulating game strategy, evaluating talent, and other coaching skills that serve to provide efficacy information based upon such measures as athlete improvement, which was also supported in this study.

Perception of team improvement were presented in this study as a way to provide success information to youth coaches, where perceptions of team ability and overall win/loss success may not be the end goal in youth sports. Although perception of team improvement was not as strong a predictor of coaching efficacy as were social support and playing experience, its significance provides a novel corroboration to the Feltz et al.

(1999) model and supports what Chase et al. (2005) found as important efficacy sources in their interviews with high school coaches.

In contrast, perceptions of team ability as a predictor of coaching efficacy did not find support in this study as it did in Myers et al. (2005). Myers et al. surmised that the importance placed on team ability and the subsequent influence on efficacy may be due to the competitive nature of collegiate sports. Although, in youth sports there may be a difference as a youth coach must coach the players they are given and ideally, recruiting does not exist as it does at the collegiate level. Although in a collegiate sport team ability is a direct reflection of a coaches' recruiting success. Perhaps this provides ample explanation for the findings that team improvement was supported and team ability was not supported, as youth sport does not have the same competitive nature, therefore youth coaches may derive perceptions of efficacy from different sources than collegiate coaches (i.e. recruiting, team ability).

Playing experience was another predictor of coaching efficacy that found support in this analysis. This supports the findings of Sullivan et al. (in press) as they found that previous playing experience was a significant source of game strategy efficacy, but was moderated by coaching experience in other areas of coaching efficacy. Park (1992) did not find support for playing experience as a source of coaching confidence, and explained that previous playing experience was not a requisite component of coaching competence. An example of good coaching being unrelated to playing experience may be found in Scotty Bowman, the legendary Hall of fame coach for Detroit, Pittsburgh and Montreal of the NHL, who guided his teams to twelve Stanley Cups in the late 1970's through 2002. Scotty never played above junior hockey, could barely skate, and did not step foot

on the ice for a team practice from 1991 until his retirement in 2002. Although playing experience may contribute to coaching efficacy of youth-aged athletes, it might not offer a strong influence to confidence in coaching more experienced athletes, such as at the collegiate and professional levels that typically have more playing experience than their coaches. In addition, at higher levels of coaching, other aspects of coaching efficacy that playing experience may not account for are probably more important, such as skill diagnostics, motivation, recruitment, and management. Future research is necessary to examine the influence of playing experience at different levels of coaching and with various dimensions of coaching efficacy.

As Feltz et al. (in press) noted, the associations between specific sources and the dimensions of coaching efficacy are likely to be dependent on the level of coaches involved (e.g., youth, high school, or collegiate) and organizational factors of the program (e.g., premier leagues, size of school, competitive divisions). Thus, they suggested that years of playing and coaching experience may be most important to TE and GSE at the youth level; coaching experience may be most important to GSE and ME at the high school level; and, perceived team ability may be most closely tied to ME and CBE at the college level. Coaching experience and social support appear to cut across coaching levels and coaching efficacy dimensions. Future research is needed to understand the sources of coaching efficacy by coaching levels in a systematic fashion.

The second hypothesis stated that coaching satisfaction will be predicted by the same aforementioned seven sources. This hypothesis was also supported, with social support, coaching experience and playing experience again providing the largest contribution. Furthermore, coaching education level and team ability did not provide a

significant contribution to this analysis. Social support supplied a stronger beta for satisfaction than for efficacy, even though social support provides efficacy information, support from significant others can also lead directly to such satisfaction issues as commitment, enjoyment, and burnout. Vealey, Udry, Zimmerman and Soliday (1992) examined coaching burnout and found that a lack of social support led to higher levels of burnout in coaches. Raedeke and his associates (Raedeke, 1997; Raedeke et al., 2000, Raedeke et al., 2002) examined the effect of satisfaction on burnout and found that social support was a significant predictor of satisfaction and satisfaction subsequently affected burnout.

While burnout and commitment are related outcomes of satisfaction (Raedeke et al., 2000), they also have been examined in relation to coaching efficacy. Haugen and Short (2004) found support for the relationship between coaching efficacy and burnout, and Kent and Sullivan (2003) found that coaching efficacy predicted coaching commitment. Therefore, if continued coaching commitment increases the athlete development cycle, and is predicated by coaching efficacy and satisfaction, then both coaching efficacy and satisfaction must be developed and nurtured. Weiss and Freidrichs (1986) first presented the notion that social support leads to increases in satisfaction within sports. Reimer and Toon (2001) found similar results between social support and athlete satisfaction. Specifically, those athletes who perceive more support from coaches will report higher levels of satisfaction with the coach. Davis (2002) found that the actual number of interactions between the coach and significant others provided social support information to the coach and led to higher levels of satisfaction for the coach. Although social support is typically a perception, there may need to be actual overt interaction

between significant others and the coaches that provides coaches with information for accurate perceptions about social support (Ladd, 1981).

Social support as a predictor of satisfaction in youth coaches is logical, because coaches who meet with abnormal resistance or opposition by significant others (i.e., parents) may not experience enough benefit to continue on as a coach in a non-professional (non-paid) setting. Although, opposition could be framed as negative social support and may not be the same as a lack of social support, it would provide similar information to the coach. Social support has been a consistent finding in providing efficacy information and had a significant effect on satisfaction in this study. A lack of social support or a perception of negative support could certainly provide a stressful environment for coaches and present burnout as a possibility. Although, burnout may not be a large issue among youth sport coaches because the rewards may not provide enough incentive to push oneself to such a stress level that burnout would be the resultant outcome. That is, youth sport coaches may drop out before they become burned out, and if they drop out, they would not be in the data set in which to measure such constructs. This may explain the high mean ratings of satisfaction in the descriptive data. Volunteer youth coaches who experience a waning level of satisfaction will discontinue coaching prior to experiencing the negative effects of burnout, but the discontinuation may stem from a lack of support, or experience. The problems that coincide with high rates of turnover still exist, such as a decrement of athletic performance (Dobson et al. 2002; Koning, 2003), and a break in the athlete development cycle, as proposed in Chapter 1.

This reiterates Cunningham and Sagas' (2002) findings that coaching turnover is related to career satisfaction, but coaches with more experience rated coaching

satisfaction higher than coaches with less experience. Experience was tested in two ways, previous playing experience and previous coaching experience. Specifically, Cunningham and Sagas (2002) found that coaches with more playing experience reported higher levels of satisfaction and lower turnover intentions. This may be due to the coaches' commitment to the sport, as coaches with significant playing experience may be committed to the sport as a way of life. Coaches with no playing experience, on the other hand, frame their experience as a passive participant and may not understand the life commitment to the sport as compared to the commitment of a coach with a 20-year playing career. Thus, the more social support that coaches perceive they have, the more playing experience, and the more coaching experience, the more satisfied they should be with their coaching experience and their chances of dropping out should be less. Years of coaching experience were also a significant predictor of satisfaction with coaching. This could be due to coaching style or as mentioned beforehand, coaches who are not satisfied by their experience dropout or burnout and do not continue to coach. As for coaching style, as coaches gain experience, they learn how to garner social support from significant others and handle problems that, ideally, limit the amount of unpleasant experiences and increases satisfaction. Additionally, tenure of coaching experience can be related to success in many situations, and success may not be directly related to satisfaction, but practically, people are usually more satisfied after a successful performance.

One pertinent finding in the first two analyses was the lack of contribution found from coaching education. Malete and Feltz (2000) and Lee et al. (2002) both found support for coaching education as a predictor of coaching efficacy. The results of this study did not support these findings. This may be due to the use of coaching education

levels and not just dichotomous groups of those who had completed coaching education versus those who had not completed a coaching education program. Fung (2002) assessed coaches who were attending three ordered levels of coaching education, much like the current study, and found similar results. Both Fung (2002) and the results of this study found that coaches with more coaching education experience had higher mean scores on the efficacy scales. While differences were found in this study, when years of coaching experience was included as a covariate, the only significant difference between coaches' ratings of their coaching efficacy within the three levels of coaching education was for GSE. This may explain the lack of a contribution to the regression equation, as the contribution of coaching education is explained partially by years of coaching experience, which is a strong predictor of both efficacy and satisfaction. This suggests that coaching education contributes to GSE more than the other efficacies, which supports previous findings (Lee et al., 2002; Malete & Feltz, 2000). This could also indicate that the coaching education programs presented by USA Hockey focus on topics related to the sport of hockey and less on motivational and character-building skills.

The issue of what topics should be addressed in coaching education is a recurring theme in the coaching education literature (Woodman, 1993). Specifically, it is unclear what topics are central to coaching youth sports, and how important specific game strategy topics are to general coaching education. Based on personal involvement in the USA Hockey coaching education program, strategy is the main topic of the clinics. Many clinics are designed to bring in collegiate and professional coaches to give "chalk talks" to the coaches in attendance about systems and strategies utilized at the collegiate and professional levels. This may be inappropriate for a beginning youth coach who would

benefit more from information regarding legal and ethical behavior, teaching and pedagogical techniques, and personnel and parent management. The curriculum is set up to instruct on the basic topics, but the freedom of the instructors to adapt the coaching clinic programs, leaves coaches without the necessary information that has been forwarded in the curriculum (Gilbert & Trudel, 1999).

Finally, the finding that coaching education did not present a significant result on coaching efficacy when controlling for years of coaching experience may be indicative that coaches receive their educational experience from practical means. This may provide evidence that supports the impetus for mentored coaching experience or internships as a portion of the coaching education programs. If experience provides such prominent coaching efficacy information, then support for Gilbert and Trudel's (2001) proposition that active experience becomes a part of coaching education may be the most logical step in further development of coaching education. Their proposition also provides support for including mentored experience in the Sullivan et al. (2005) coaching education model.

The third hypothesis stated that coaching efficacy would significantly predict satisfaction with coaching as an outcome. This hypothesis was supported and provides another novel corroboration to the Feltz et al. (1999) model; there is no previous research link between coaching efficacy and satisfaction. Chelladurai and Ogasawara (2003) discussed the importance of predictors of satisfaction and subsequent satisfaction on outcomes such as commitment and retention. Feltz et al. (1999) also indicate that such coaching outcomes may be relevant to the coaching efficacy model. A strong sense of self-efficacy as a coach can lead a coach to feel successful and satisfied even in times of opposition. This is where confidence and satisfaction make a practical connection. If a

coach has confidence in his or her abilities and believes that s/he did a good job, then subsequent satisfaction is likely to occur, regardless of measurable success. This result also addresses the missing link to coaching outcomes in Horn's Model of coaching effectiveness (2002). If coaches' beliefs, values and cognitions have a link to the affective cognitions of coaches, then coaches have definitive outcomes that provide information to make the coaching effectiveness model more complete. The inclusion of coaching outcomes in Horn's model may be necessary to forward a more complete understanding of coaching effectiveness.

The final hypothesis stated that coaching efficacy would mediate the relationship between the seven sources and satisfaction with coaching. The model was analyzed with a path analysis and results showed that playing experience was mediated by coaching efficacy, and social support and coaching experience were partially mediated. These findings provide unique pathways between playing experiences, social support and coaching efficacy and satisfaction. As discussed previously, social support has both a direct and indirect (through coaching efficacy) relationship with satisfaction. Significant others can present information and actions that both provide efficacy information and lead directly to satisfaction with the experience of coaching. Opposition from parents and the organization may lead a confident coach to lower levels of satisfaction, while support for the coach, even if the coach lacks confidence, may also occur. Generally, positive social support presents coaches with information that lead them to believe they are doing a good job, which leads to an increase in efficacy. This increase in efficacy, as well as the positive affect ascertained from the social support, should lead to increased satisfaction. This increase in satisfaction supports Raedeke et al.'s (2002) premise that increased

commitment will reduce turnover intentions. Turnover is less likely to occur when coaches are satisfied and committed to the coaching profession. (Cunningham & Sagas, 2002).

Implications for Coaches

The findings of this study indicate that coaching efficacy has a significant relationship with coaching satisfaction. Although the study design does not support a conclusion that efficacy beliefs affect coaching satisfaction, it is predictive of higher levels of satisfaction and in accord with Bandura's (1977, 1997) theory of self-efficacy. The predictors of both coaching efficacy and satisfaction include coaching experience and social support. The practical information regarding increasing coaching efficacy and satisfaction is probably best directed at coaching education programs. The purpose of coaching education is to increase knowledge and confidence of novice coaches. Therefore the implication of social support as a predictor of both would be to include social support as a topic in coaching education programs.

Many believe social support to be a passive activity in which one receives approval, acceptance or endorsement from others. However, this belief runs counter to the social-cognitive perspective (Bandura, 1986) that people are active participants in creating their own environments. Social support can be an active process in which one pursues the social support that is needed. This occurs naturally in many leadership situations, and many times provides the impetus for new leadership within a team. Garnering social support in a positive manner can be accomplished with such activities as team social functions or parties, parent orientation meetings, and fundraising activities (Feltz et al., in press). Typically, open communication is one of the strongest precursors

to social support from parents and administrators. If parents feel that they are informed and understand the intentions of the coach, they are more likely to provide the requisite support. If a coach has not informed his or her superiors or the athletes' parents the coaches' intentions, then problems can arise and support may wane.

Teaching coaches how to garner social support may be a valuable commodity that should be added to coaching education. Arming coaches with the knowledge of how to deal with parents and administrators can be invaluable, and the proper methods for team meetings, and open communication should be instructed. This may provide more satisfaction among coaches as well as parents. Coaching education requires more information than simply providing "chalk talks" from professional coaches. Providing real information to coaches on how to deal with real problems, such as parent interaction and parental support, should be a part of any coaching education program.

A second implication is the addition of mentored experiences to all coaching education programs. Coaching experience has consistently appeared as a predictor of coaching efficacy (e.g., Feltz et al., 1999; Fung, 2002; Myers et al., 2004). Confident coaches typically have the ability to address challenges and report higher levels of satisfaction. Therefore, it may be prudent to provide experiences where coaches are set up for success and not failure. By requiring a mentored coaching experience, coaches would get the opportunity to gain valuable experience under an experienced coach. Ideally this would help to build coaching efficacy and coaches would perceive themselves to be better prior to taking head coaching duties that may require expectations that exceed the coaches' capabilities. Coaching education has been shown to increase coaching efficacy (Malete & Feltz, 2000), as efficacy has been in turn, shown to predict

satisfaction with coaching. Although coaching education did not provide a significant contribution within this study, it has been shown to have positive effects and may be most effective as a combined classroom and mentored experience. A combined coaching education experience that provides ample coaching knowledge and experience should provide relevant efficacy information. In conclusion, two additional areas of coaching education that may provide important information to coaches are dealing with social support and experiential coaching education. Experiential coaching education would include such activities as coaching internships, mentorships and directed study in which coaches gain experience as a coach under the direction of a master or professional coach.

Limitations

There are some limitations to this study. The first limitation regards the design. The study presented a one-shot questionnaire submitted at the two-thirds mark through the hockey season. Although Bandura (1997) indicates that efficacy beliefs are predictive over time within the assessed situation, the number of inexperienced coaches in this study may create a situation where efficacy information such as performance accomplishments and verbal persuasion have more impact on efficacy beliefs and may be less stable than the beliefs of veteran coaches. Feltz et al. (1999) provided sufficient evidence to assume test-retest reliability of the CES, which supports the notion that the measure is valid. Myers et al. (2005) called for research to assess the stability of coaching efficacy over the course of a season, which also addresses this as a limitation of concern reiterating that efficacy beliefs may be less stable with less experienced coaches. Additionally, it was necessary to measure coaches at a minimum of two-thirds through the season, as the inexperienced coaches needed time to formulate a sense of efficacy belief for this specific

coaching situation. An improvement for future studies may be to examine efficacy change by measuring at the one-third, two-third and end points of the season.

A second limitation to this study was the lack of availability of an adequate tool to measure coaching satisfaction. Although Chelladurai and Ogasawara (2003) did construct a coaching satisfaction measure based upon factors influencing job satisfaction, it was deemed insufficient for our purposes. One major concern with adopting satisfaction questionnaires adapted from industrial/organizational psychology literature like Chelladurai and Ogasawara's questionnaire are the content factors assessed, which include job satisfaction with pay, supervision, benefits, offices, etc. This is problematic for the non-professional coaches. As non-professional coaches make up 97% of the 2.5-3 million coaches in North America, it may be more appropriate to develop a measure that can be utilized by the majority of coaches. Utilizing a measure that was constructed for coaches that are employed full-time by colleges and professional sports teams and ascertains information about such professional expectations would not provide a valid measure of satisfaction with volunteer or amateur coaching positions. The questionnaire adapted from Smoll et al. (1979) and Raedeke et al. (2002) focuses more on process satisfaction and future commitment. This was deemed a more appropriate measure for this study.

Future Directions

Based on the literature review and findings of this study, recommendations for future research directions are presented. As previously mentioned, future research is needed to develop a measure of coaching satisfaction with non-professional coaches. The use of qualitative methods will help to define a coaching satisfaction construct that is

sharply focused on the volunteer coach and a process-based approach to coaching satisfaction. This study has provided evidence that suggests satisfaction with coaching needs to be further understood and may provide some insight into such outcomes as coaching dropout and burnout.

Additionally, researchers should look at the development of coaching efficacy and satisfaction in different contexts, such as temporal development, possibly over a single season or multiple seasons. Gathering data at several time points during the season may provide a more representative picture of the development of coaches' confidence and fluctuations in satisfaction throughout the year. This could provide insight into the nature of the changes in confidence and satisfaction, particularly with new and developing coaches throughout their first season. This study should also provide information about the influence of fluctuating perceived social support and team performance on coaches' efficacy and satisfaction. Within a temporal study, the question of a reciprocal relationship may be addressed.

Another direction of future research in coaching efficacy and satisfaction should include an assessment of gender of the coaches and athletes. Previous research on coaching confidence and gender (Barber, 1998; Vealey et al., 1992) has been limited to female athletes and both genders for coaches, but male athletes have not been assessed and it is conceivable that the coaches' efficacy and satisfaction outcomes may vary depending on athletes' gender and coaches' gender in a four-way model. This study did include male and female athletes and coaches, but the representation of female coaches was too small to be analyzed effectively. Marback et al. (2005) did find support for gender of the coach as predictor of GSE and CBE, and it may provide information about

satisfaction, as well as social support perceptions. Therefore, future research should include sufficient data to take these variables into consideration.

One additional direction that should be examined is comparing the perceptions of the coaches' efficacy to the athletes' and parents' perceptions of the coaches' competence, as well as the athletes', parents', and coaches' level of satisfaction with the coach and his or her coaching. In studying the congruence between the parent, athlete and coaches' perceptions, researchers may be able to acquire more in-depth information into the social support, efficacy and satisfaction relationships. Based upon the results of this study, higher congruence between perceptions of competence and efficacy may lead to higher levels of perceived social support and coaching satisfaction. This may include the use of interventions, such as coach training or mentoring during the season to assess changes with direct coaching development.

Appendix A
Coaching Confidence Questionnaire

Coaching confidence refers to the extent to which coaches believe that they have the capacity to affect the learning and performance of their athletes. Think about how confident you are as a coach. Rate your confidence for each of the items below. Your answers will be kept completely confidential.

How confident are you in your ability to--

(Circle the most appropriate answer)	No Confidence	Low	Moderate	High	Complete Confidence
1. help athletes maintain confidence in themselves?	1	2	3	4	5
2. Recognize opposing team's strengths during competition?	1	2	3	4	5
3. mentally prepare athletes for game strategies?	1	2	3	4	5
4. understand competitive strategies?	1	2	3	4	5
5. instill an attitude of good moral character?	1	2	3	4	5
6. build the self-esteem of your athletes?	1	2	3	4	5
7. demonstrate the skills of your sport?	1	2	3	4	5
8. adapt to different game/meet situations?	1	2	3	4	5
9. Recognize opposing team's weakness during competition?	1	2	3	4	5
10. motivate your athletes?	1	2	3	4	5
11. make critical decisions during competition?	1	2	3	4	5
12. build team cohesion?	1	2	3	4	5
13. instill an attitude of fair play among your athletes?	1	2	3	4	5
14. coach individual athletes on technique?	1	2	3	4	5
15. build the self-confidence of your athletes?	1	2	3	4	5
16. develop athletes' abilities?	1	2	3	4	5
17. Maximize your team's strengths during competition?	1	2	3	4	5
18. Recognize talent in athletes?	1	2	3	4	5
19. promote good sportsmanship?	1	2	3	4	5
20. detect skill errors?	1	2	3	4	5
21. adjust your game strategy to fit your team's talent?	1	2	3	4	5
22. teach the skills of your sport?	1	2	3	4	5
23. build team confidence?	1	2	3	4	5
24. instill an attitude of respect for others?	1	2	3	4	5

Appendix B
Coaches Background Information Questionnaire

Please check only one answer per question-

1. Your sex: _____(1) Male, _____(2) Female

2. Primary sex of your team: _____(1) Male , _____(2) Female

3. Level/age group of team coaching. (e.g. U-19, Pee-wee): _____

4. Your ethnic affiliation:
____ (1) Caucasian,
____ (2) African American
____ (3) Native North American Indian
____ (4) Asian American
____ (5) Hispanic
____ (6) Other _____

5.Your Age: _____

6. Educational Background: (check highest level competed)

_____ (1) Did not complete High School
_____ (3) Less than 2 years college/tech
_____ (5) Bachelor's degree
_____ (7) Master's degree
_____ (9) Completed Doctorate
____(2) High School graduate
____(4) 2 or more years college
____(6) Some Master Level work
____(8) Some Doctoral level work

7. If attended college, what was undergraduate major? _____, Master's major_____

Doctorate degree?_____.

8. Your Level of USA Hockey Coaching certification? 1 2 3 4 5

9. Present position. _____(1) Head, _____(2) Assistant

10. Total numbers of years coaching hockey _____(Head) _____(Assistant).

11. Number of years playing. ____(1) Youth; ___(2)High School ____(3) Junior A, B at each level
____(4)Major Junior ___(5) College ____(6) Professional

12. Approximately how many hours per week do you spend involved in fulfilling your coaching duties, planning etc. ? In season _____ Out of season _____

13. Are you paid for your present coaching duties? _____(1) NO _____(2) Yes

Appendix C
Coaching Satisfaction/ Support Questionnaire

	Not at all									**Very/A lot**
1. How successful do you feel as a coach	0	1	2	3	4	5	6	7	8	9
2. How much do you enjoy coaching hockey	0	1	2	3	4	5	6	7	8	9
3. I feel that my players like me	0	1	2	3	4	5	6	7	8	9
4. I feel that my players like hockey	0	1	2	3	4	5	6	7	8	9
5. I would like to coach again next season	0	1	2	3	4	5	6	7	8	9
6. How much do you know about hockey?	0	1	2	3	4	5	6	7	8	9
7. How much do you know about coaching kids?	0	1	2	3	4	5	6	7	8	9

	Poor									**Excellent**
9. How would you rate the overall ability of the athletes on your team this year?	0	1	2	3	4	5	6	7	8	9
10. How would you rate the overall improvement of your athletes so far this season?	0	1	2	3	4	5	6	7	8	9

11. In comparison with your perception of the ideal youth sports program, how would you rate the support given to you by the parents of your athletes?

0 1 2 3 4 5 6 7 8 9

12. In comparison with your perception of the ideal youth sports program, how would you rate the community support for your team? 0 1 2 3 4 5 6 7 8 9

13. In comparison with your perception of the ideal youth sports program, how would you rate the support given to you by the organization that runs your program?

0 1 2 3 4 5 6 7 8 9

14. In comparison with your perception of the ideal youth sports program, how would you rate the support given to you by your athletes? 0 1 2 3 4 5 6 7 8 9

Appendix D

Coaching-Efficacy Study Consent Form

You are being asked to participate in a study conducted by graduate student Craig Payment under the supervision of Deborah Feltz, Ph.D., from Michigan State University. The purposes of this study are to examine 1) Coaching confidence in motivational behaviors and 2)Specific behaviors related to coaching satisfaction. It is believed that the project will have practical applications within coaching education.

As part of this research, you will be asked to complete questionnaires during the hockey season. The questionnaires (approximately 10 minutes to complete) will contain items specific to coaching confidence and coaching behaviors.

Your participation in this study will remain private and confidential, no one except the principal investigators will have access to these responses or to participation records. At the end of the project, responses will be presented at the group level to ensure the confidentiality of individual responses. Group-based findings will be made available to those who are interested. Your privacy will be protected to the maximum extent allowable by law.

Your participation in this study would be greatly appreciated. However, please know that you may refuse to participate or withdraw from the project at any time and without penalty, you may also refuse to answer any specific question. If you would like to participate, please sign this form and return it.

If you have any questions concerning this study, please contact Dr. Deborah Feltz, at 517.355.4732 [dfeltz@msu.edu] or Craig Payment at 517.355.4763 [payment5@msu.edu]. Additionally, If you have any questions or concerns regarding your rights as a study participant, or are dissatisfied at any time with any aspect of this study, you may contact - anonymously, if you wish - Peter Vasilenko, Ph.D., Chair of the University Committee on Research Involving Human Subjects (UCRIHS) by phone: (517) 355-2180, fax: (517) 432-4503, email address: ucrihs@msu.edu, or regular mail: 202 Olds Hall, East Lansing, MI 48824.

Thank you for your time and cooperation,

_____ _____

Dr. Deborah Feltz, Principal Investigator Date

_____ _____

Craig Payment, Graduate Student Date

I, _____, have been informed of the study and agree to participate.

_____ _____

Signature Date

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