

5-2010

Bringing out the Best: Utilizing Bandura's Model of Self-Efficacy to Expand Current Concepts of Coaching Efficacy

Alison C. Phillips
Macalester College, aphillips0810@gmail.com

Follow this and additional works at: http://digitalcommons.macalester.edu/psychology_honors



Part of the [Psychology Commons](#)

Recommended Citation

Phillips, Alison C., "Bringing out the Best: Utilizing Bandura's Model of Self-Efficacy to Expand Current Concepts of Coaching Efficacy" (2010). *Psychology Honors Projects*. Paper 21.
http://digitalcommons.macalester.edu/psychology_honors/21

This Honors Project is brought to you for free and open access by the Psychology Department at DigitalCommons@Macalester College. It has been accepted for inclusion in Psychology Honors Projects by an authorized administrator of DigitalCommons@Macalester College. For more information, please contact scholarpub@macalester.edu.

Bringing out the Best: Utilizing Bandura's Model of Self-Efficacy to Expand Current

Concepts of Coaching Efficacy

Alison C. Phillips

Macalester College

Adviser Jaine Strauss, Psychology

Submitted: May 3, 2010

Abstract

This study sought to extend the concept of coaching efficacy by exploring all four factors identified in Bandura's model of self-efficacy as potential sources of coaching efficacy: enactive mastery experience, verbal persuasion, vicarious experience, and physiological and affective state. A total of 224 high school and college coaches completed an online survey. The present study accounted for over twice the variance predicted in past studies on sources of coaching efficacy. The most potent source of coaching efficacy was physiological and affective state, suggesting that coaches derive their efficacy beliefs based on the perception of autonomic arousal.

Bringing out the Best: Utilizing Bandura's Model of Self-Efficacy to Expand Current
Concepts of Coaching Efficacy

A Model of Coaching Effectiveness

Coaching performance and effectiveness is important to consider relative to athletic performance and participation in sports. Much of the research to date has focused on the characteristics and behaviors of coaches in relation to their performance and effectiveness. It is widely believed that coaches hold a dominant role in the sport setting and have a strong influence on the performance, behavior, and well being of their athletes (Horn, 2008). A large portion of the research has been focused on identifying the particular coaching characteristics, competencies, cognitions, practice strategies and techniques, leadership styles, or behavioral patterns that are most effective (Horn, 2008). One such characteristic is coaching efficacy. Coaching efficacy has a direct influence on coaching behaviors, which aids in determining the coach's overall effectiveness. The present research is focused on this characteristic, coaching efficacy, due to its direct influence on coaching behaviors. Effective coaches play a key role at all levels of athletics and affect the quality of the athletic experience for all ages. A high quality athletic experience impacts enjoyment and the desire to maintain a physically active lifestyle. Coaches with a high sense of coaching efficacy will be more effective coaches and encourage physical activity.

Horn (2008) has developed a working model of coaching effectiveness to combine and organize the numerous relevant theories that are presented in the literature, shown in Figure 1. Horn's model is focused on coaching behavior – which is believed to be the most predictive and influential factor in coaching effectiveness. This model

incorporates the antecedents of coaching behaviors as well as the way in which coaching behavior affects the performance and psychosocial development of athletes. Many distinct theoretical perspectives are incorporated in Horn's (2008) model, including achievement goal theories, perceived control theories, attribution theory, and competence motivation theory. Horn (2008) clarifies the model in a summary that contains three well-defined concepts. The first concept in the model summary emphasizes that the behaviors of coaches in athletic contexts are explained by antecedent factors. Second, the model indicates that the behavior of a coach in practices and games exerts both a direct and indirect effect on an athlete's performance and behavior. Third, the model indicates that the success of different coaching behaviors will be mediated by both situational and individual differences (Horn, 2008). Overall, the model provides organization to the antecedent and consequent factors of coaching behavior. The present study will focus on one particular antecedent factor of coaching behavior. Factors that influence coaching behavior have a greater effect on the rest of the model than those that are at the latter end of the model. The working model of coaching effectiveness is a valuable tool for organizing a complex area of research. However, there continue to be many questions regarding the foundation of the specific relationships that exist in Horn's model of coaching behavior and effectiveness.

Coaching Efficacy

It has been well documented that there is a positive relationship between the self-efficacy of athletes and their performance (Moritz, Feltz, Fahrback, & Mack, 2000). Self-efficacy is defined as "the belief in one's capabilities to organize and execute the course of action required to produce given attainments" (Bandura, 1997, p. 3). Rather than

judgments regarding one's skill, self-efficacy beliefs are judgments about what one can accomplish with said skills. In past research, the correlation between self-efficacy and athletic performance has ranged from .01 to .79, with an average correlation of .38 (Moritz et al., 2000). Collective efficacy, or team-efficacy, is another important efficacy belief that holds a strong relationship with athletic performance. It has been shown that a high sense of collective efficacy predicts better team performance, especially when teams are interdependent (Moritz, 1997; Watson and Chemers, 1998; Feltz and Lirgg, 1998). Research shows that there is a positive relationship between athletic efficacy beliefs and performance. It follows logically that the same relationship is true among coaches and their performance.

In recent years, researchers have advanced the concept of coaching efficacy as one of the key factors that influences coaching behavior, performance, and overall effectiveness. Coaching efficacy fits within Horn's (2008) category of coaches' expectancies, values, beliefs, and goals. A coach's personal characteristics are a primary antecedent feature in the working model of coaching effectiveness. This category in the working model is the only one that has a direct impact on coaching behavior. Thus, it is important to study this category in greater detail, and more specifically, study the influence of coaching efficacy. A greater understanding of coaching efficacy will lead to a more thorough understanding of the model of coaching effectiveness, particularly the antecedent factors of coaching behavior – which is a primary focus of this study.

Coaches exhibiting a high sense of efficacy with regard to their coaching abilities should be expected to perform better and move their athletes to perform better (live up to and beyond their potential) as well. Coaching efficacy is defined as “the extent to which

coaches believe they have the capacity to affect the learning and performance of their athletes” (Feltz, Chase, Moritz, and Sullivan, 1999, p. 765). Improving or maximizing coaching efficacy is important in sport and performance because it impacts the actions and conduct of coaches in addition to the performance and behavior of their athletes. Efficacious coaching will be associated with a more satisfying athletic experience for those connected with that coach. In addition, efficacious coaching may be a key to the promotion of a positive association with athletic participation, which may lead to higher rates of physical activity.

Feltz and colleagues (1999) developed a multidimensional model of coaching efficacy. This model, shown in Figure 2, was derived from Bandura’s (1977) self-efficacy theory, Denham and Michael’s (1981) model of teacher efficacy, and Park’s (1992) measure of coaching confidence. It consists of four different dimensions that factor into total coaching efficacy: game strategy, motivation, teaching technique, and character building. The inclusion of these four dimensions is based on guidelines detailed in the National Standards for Athletic Coaches (Chase, Feltz, Hayashi, and Hepler, 2005). The National Standards for Athletic Coaches provides a list of the fundamental competencies that athletic coaches should possess to ensure the safety and quality of athletic programs. Coaches should be competent in a wide variety of skills including injury management, risk management, growth and development, teaching techniques, as well as items that revolve around physical conditioning, professional development and other skills related to working with athletes of all levels. A coach should be well versed in these skills, as well as demonstrate expertise. Potentially, a coach with these competencies will be a more effective coach. This list of competencies was translated

into the four dimensions of coaching efficacy. Game strategy efficacy is defined as the degree of confidence that a coach has in their ability to coach and lead their team to victory during competition (Feltz et al., 1999). Motivation efficacy is defined as the confidence coaches have in the ability to affect the psychological skills and mental states of the athletes they are coaching (Feltz et al., 1999). Technique efficacy is the confidence coaches have in instructional and diagnostic skills (Feltz et al., 1999). Character building efficacy is defined as the confidence coaches have in their ability to influence personal development of and positive attitude toward sport in the athletes they coach (Feltz et al., 1999). These four elements of coaching efficacy were identified and considered to be important factors in Feltz and colleagues' (1999) original models.

Through factor analysis, the model of coaching efficacy has evolved to include the four dimensions of coaching efficacy as first-order factors that converge on a second-order factor of general coaching efficacy (Feltz et al., 1999). However, several subsequent factor analyses have produced model-data fit that does not meet accepted values for a close fit. This is particularly true when used among a variety of coaches in terms of both coaching level and gender of the coach. Other models have been proposed because game strategy efficacy and technique efficacy are highly correlated (Feltz et al., 1999). Myers, Wolfe, and Feltz (2005) explored the possibility of a three-dimensional model that included game strategy efficacy and technique efficacy under one dimension. However, it was demonstrated that a four-dimensional model of coaching efficacy shows a better fit than a three dimensional model (Myers, Wolfe, & Feltz, 2005). In turn, the one-dimensional model of coaching efficacy showed the poorest fit to the data. Thus, the

four dimensional model proposed by Feltz and colleagues (1999) for coaching efficacy continues to provide the best fit to the model of coaching efficacy.

The Coaching Efficacy Scale (CES), developed by Feltz and colleagues (1999), is currently the only published measure of coaching efficacy. Measuring coaching efficacy is important because of its direct impact on coaching behavior, including the positive and negative influences that a coach may have on character and athletic development as well as performance of individuals and of athletic teams. The CES was developed during a five-week seminar attended by coaches with varying levels of experience. Coaches discussed the key components of coaching efficacy and reviewed the coaching education literature for aspects of effective coaching that were mentioned frequently. Following this discussion, the dimensions of coaching efficacy were agreed upon and questions were developed based on the proposed four dimensions of coaching efficacy. During initial and subsequent analyses, the CES has demonstrated acceptable reliability coefficients of between .82 and .93 (Feltz et al., 1999; Tsorbatzoudis, Daroglou, Zahariadis, & Grouios, 2003). The resulting instrument consists of 24 questions that measure the four dimensions of coaching efficacy.

The conceptual model of coaching efficacy moves beyond the construct of coaching efficacy. The model includes both sources and outcomes of coaching efficacy in addition to the four dimensions. The model predicts outcomes associated with high and low efficacy coaches. Coaching efficacy directly influences coaching behavior, as well as player and team satisfaction, the performance and behavior of the player and team, and player and team efficacy (Feltz et al., 1999). In fact, coaches with high efficacy showed higher competition winning percentages and their players were more satisfied with them

when compared with low efficacy coaches. In addition, in terms of coaching behaviors, high efficacy coaches provided more praise and encouragement to their players and teams, while low efficacy coaches demonstrated more instructional and organizational behaviors toward their players (Feltz et al., 1999). The outcomes of coaching efficacy are important in many aspects of athletics and competition, but the present study focuses only on sources of coaching efficacy. Determining sources of coaching efficacy will provide a more complete picture of how one's sense of coaching efficacy is derived. In addition, it is important to look at the sources of coaching efficacy because of the influence they have on the outcomes of coaching efficacy, which includes coaching behavior. Horn's (2008) model of coaching effectiveness provides a foundation for this focus, as a coach's behaviors are the basis for determining effective coaching.

Sources of Coaching Efficacy

The model of coaching efficacy developed by Feltz and colleagues (1999) presents four distinct sources of coaching efficacy: extent of coaching experience/preparation, prior success, perceived skill of athletes, and school/community support. This list of sources was developed by Feltz and colleagues (1999) at the same time as the initial instrument development. They hypothesized that each of these sources would display a positive relationship with a coach's sense of coaching efficacy. These sources were derived empirically and each showed a significant correlation with at least one of the dimensions of coaching efficacy on the CES. The past record of the coach as well as years spent in coaching was correlated with both game strategy efficacy and motivation efficacy (Feltz et al., 1999). The perceived level of community support was correlated with game strategy, motivation, and technique efficacy. In addition, perceived

team ability and perceived parental support were also correlated with motivation efficacy. However, these sources accounted for merely 13% of the variance in coaching efficacy (Feltz et al., 1999).

Following the development of the CES, researchers have sought to identify additional sources of coaching efficacy through empirical research. Marback, Short, Short, and Sullivan (2005) demonstrated support for the sources of coaching efficacy established by Feltz and colleagues (1999). In addition, the sources identified on Barber's (1998) Sources of Coaching Competence Information Scale – performance accomplishments, social comparison, and influence of significant others – were also predictors of coaching efficacy. Marback and colleagues (2005) also found significant gender differences in game strategy efficacy and character building efficacy, an indication that gender may be another moderator of coaching efficacy. Chase and colleagues (2005) also attempted to identify additional sources of coaching efficacy. During interviews with 12 of the coaches that were part of the Feltz et al. (1999) study, the following six distinct sources of coaching efficacy were revealed: player development, coaches' development, knowledge/preparation, leadership skills, player support, and past experience. The details of these sources were defined for purposes of clarification. Player development was defined as improvement in athletic performance. The efficacy source of 'coaches' development' came through themes identified in these interviews such as "coaching education program," "feel comfortable with yourself," and "confidence from within" (Chase et. al., 2005, p. 35). Chase and colleagues (2005) defined knowledge/preparation as the confidence that comes from experiential knowledge and pedagogical background of the game. In addition, leadership skills were

defined as a belief in one's organizational, personal skills, and having enough reflective experience to form a philosophy of coaching. The player support source was defined as receiving positive feedback from players and having a positive relationship with them (Chase et al., 2005). Finally, Chase and colleagues (2005) defined past experience as having prior experience in both coaching as well as playing a sport. Chase and colleagues (2005) expanded the list of sources of coaching efficacy from that of Feltz and colleagues (1999) in order to create a more thorough picture of the factors that influence coaching efficacy.

Malete and Feltz (2000) show that one seven-hour coaching session significantly increased the coaching efficacy of participants versus a control group as well as versus their pre-coaching session scores. However, this study did not follow up with the coaching clinic's influence on coaching behaviors and other coaching efficacy outcomes. Feltz, Hepler, Roman, and Paiement (2009) found that coaching experience, playing experience, perceived athlete improvement, and athlete support were the strongest sources of coaching efficacy in volunteer youth coaches. In contrast, among college coaches of NCAA Division II and III teams, perception of team ability was the greatest source of coaching efficacy (Myers, Vargas-Tonsing, & Feltz, 2005). The sources of coaching efficacy appear to be quite different based on the competitive level of the athletic team. The volunteer coach works with a different group of athletes than the college coach. It appears that a college coach derives efficacy information based on the potential for winning within his or her team— as a greater emphasis is placed on winning at higher levels of athletics. The list of sources of coaching efficacy has grown since the concept was initially developed, as recommended by Feltz and colleagues (1999).

Researchers have established more factors that significantly influence a coach's sense of efficacy. Since the emergence of coaching efficacy as a psychological construct in the literature on coaching effectiveness, research has been recognized as an important tool used to determine sources that influence coaching efficacy and may provide a basis for training and teaching a new generation of coaches.

Although many sources of coaching efficacy have been established, the categorization of these sources lacks the organization of a theoretical framework. Theoretical organization has generally been added as a post hoc maneuver, i.e., after sources are determined through empirical research, investigators categorized the sources rather than predetermining where specific sources will fit into an already established framework. In addition, the previously mentioned sources have been shown to account for only 13% of the variance in coaching efficacy (Feltz et al., 1999). There is also little information as to the reason that a particular source has an influence on an individual's sense of coaching efficacy. A sound theoretical framework is needed so that existing sources may be linked to an established theory. This will provide a weighted and practical value to the sources of coaching efficacy, as coaches will then be able to target the specific area(s) of weakness and identify specific techniques to improve their efficacy. Based on the direct influence of a coach's expectancies, values, beliefs, and goals on coaching behavior, indicated in Horn's (2008) model of coaching effectiveness, an improvement in coaching efficacy will facilitate improvement in overall coaching performance and behavior.

Theory of Self-Efficacy

A reliable theory in this situation – one that provides a sound framework for the sources of coaching efficacy – is that of self-efficacy. As previously stated, Bandura's (1977) theory of self-efficacy is one of the foundations of the theories of coaching efficacy; therefore, it is only fitting that this be used as the model to organize the accumulated sources of coaching efficacy. As mentioned previously, self-efficacy is the belief that one is able to perform in a certain manner to achieve a certain outcome. Bandura's sources of self-efficacy are used in the present study to formulate additional sources of coaching efficacy. The theory of self-efficacy has been well validated since its conception under Bandura's social cognitive theory. In addition, Bandura's (1977) original theory of self-efficacy has been expanded so that there are numerous applications in use today; coaching efficacy is just one such application. The theory of self-efficacy is practical and lends itself effectively to real life situations. For example, social self-efficacy, an individual's confidence in his/her ability to engage in the social interaction tasks necessary to initiate and maintain interpersonal relationships, has been variably defined, described, and measured in the literature as researchers have generalized Bandura's theory of self-efficacy for specific applications (Smith & Betz, 2000). It has been shown that social self-efficacy is strongly correlated to the related constructs of shyness and social anxiety. Social self-efficacy has been shown to have a large impact upon research regarding interpersonal relationships. This is an example of an application of Bandura's theory of self-efficacy that has been applied to a specific area of research and in turn has advanced that field. Coaching efficacy is another application of Bandura's theory of self-efficacy that may influence a related body of research.

Self-efficacy judgments are based on the processing of diverse sources of efficacy information. Bandura (1997) theorizes that the sources influencing one's self-efficacy include enactive mastery experience, vicarious experiences, verbal persuasion, and physiological and affective states. Enactive mastery experiences represent prior performance accomplishments and are thought to be the leading sources of influence in self-efficacy information (Bandura, 1997). This is because the information gathered is based on one's own performance accomplishments and the individual has the first-hand memory and cognitive processing of these events. In general, past performance success tends to enhance self-efficacy beliefs, while past failures have been shown to decrease self-efficacy. Furthermore, the focus on successes should provide added encouragement and enhance self-efficacy more than focusing on one's failures. The influence of past performance on self-efficacy beliefs also depends on the perceived difficulty of the performance, the effort expended, the amount of external assistance received, the temporal pattern of success and failure, and the individual's conception of a particular ability as a skill that can be acquired versus an inherent aptitude. It is argued that performance successes on difficult tasks, as well as tasks attempted without external assistance, and tasks accomplished with only occasional failures carry greater efficacy enhancement value than tasks that are easily accomplished, tasks accomplished with the aid of external assistance, or tasks in which repeated failures are experienced with little signs of progress.

Verbal persuasion influences self-efficacy beliefs through communication with others. Self-efficacy beliefs based on persuasive sources are also likely to be weaker than those based on one's accomplishments but are still valuable. Bandura (1997) noted that

the debilitating effects of persuasive information have a greater influence on one's self-efficacy than the enabling effects. Negative information is more likely to decrease one's sense of efficacy than positive information is likely to increase one's efficacy judgments. The impact of this source on self-efficacy often depends upon the prestige, knowledge, trustworthiness, and credibility of the person or institution providing the persuasive information (Bandura, 1997).

The third source of self-efficacy is vicarious experiences and is based on the observation of others (Bandura, 1997). Vicarious experience has been shown to influence self-efficacy through social comparisons. This process involves observation of the performance of one or more individuals, noting the consequences of their performance, and then using this information to form judgments about one's own performance (Bandura, 1997). Vicarious sources of efficacy information are considered weaker than enactive mastery experience. However, vicarious experiences do influence self-efficacy information, especially when one has less experience with a given performance situation. The relevance of social comparison in one's self-efficacy is also enhanced by perceived similarities to the social comparison model in terms of performance or personal characteristics (Bandura, 1997).

The final source of self-efficacy, as stated in Bandura's theory (1997), is one's physiological and affective states. Physiological information includes the autonomic arousal that is associated with either fear and self-doubt, or with being energized and ready for performance. Physiological information is of particular importance as a source of efficacy information in sport and physical activity (Feltz & Riessinger, 1990). A person with high self-efficacy in regard to a specific task often perceives arousal as

conducive to a successful performance. Conversely, someone with low self-efficacy tends to view physiological arousal as a negative state that reflects personal insufficiencies in their performance (Bandura, 1997). It has been found that perceived autonomic arousal was a stronger predictor of efficacy information than actual autonomic arousal (Feltz and Mungo, 1983). In addition, affective, or emotional, information provides valuable efficacy information. Positive affect is more likely to enhance efficacy judgments than negative affect, as emotional symptoms that signal anxiety may be interpreted as a lack of necessary skill, which decreases one's self-efficacy.

Self-Efficacy in the Context of Coaching Efficacy

Past research in coaching efficacy has given post hoc categorizations to the sources found in terms of Bandura's theory of self-efficacy (Chase et al., 2005). When a significant source was identified, researchers grouped the source in one of Bandura's categories. Most sources of coaching efficacy fall under the category of enactive mastery experience, which is the leading source of self-efficacy (Bandura, 1997). Chase and colleagues (2005) include the following sources of coaching efficacy in the category of enactive mastery experience: coaching experience, coaching preparation, previous win-loss record, player development, coaches' development, knowledge/preparation, and leadership skills (Feltz et al., 1999; Marback et al., 2005; Chase et al., 2005; Feltz et al., 2009). Sources of coaching efficacy that are categorized in the verbal persuasion group include: perceived school, community, athlete, and parent support (Feltz et al., 1999; Marback et al., 2005; Chase et al., 2005; Feltz et al., 2009). However, there are two sources of self-efficacy within Bandura's model that do not appear to be tied to any

previously identified source of coaching efficacy. These sources are vicarious experience and physiological and affective state.

Bandura's model of self-efficacy contains four well-validated sources. These sources have been influential in other areas of efficacy related research, specifically in research on individual athletic efficacy and collective team efficacy. However, in coaching efficacy research, the focus has been on only two of the sources (enactive mastery experience and verbal persuasion) as factors that influence coaching efficacy. Due to the theoretical relationship between self-efficacy and coaching efficacy, all four sources of efficacy information, detailed above, should be influential to one's sense of coaching efficacy. Together, these four sources of self-efficacy will provide additional organization and predictive utility to the sources of coaching efficacy (Bandura, 1997). Utilizing all four sources of Bandura's theory of self-efficacy may account for a greater percentage of the variance in a coach's sense of efficacy.

In other lines of efficacy research in an athletic setting, i.e. self-efficacy of athletes and collective efficacy of teams, all four sources have been well documented in their importance as indicators of efficacy beliefs. Athletes have been shown to derive their self-efficacy judgments from past performance accomplishments and vicarious experience – including modeling, social comparison, and observational learning (Bandura, 1997; McCullagh & Weiss, 2001). In addition, forms of verbal persuasion from others, such as instructional feedback, expectations of others, or pregame, halftime or postgame speeches, all influence an athlete's sense of efficacy (Bandura, 1997; Vargas-Tonsing, 2004). Physiological and affective state is a salient source of self-efficacy beliefs in athletics, even more important than in nonphysical tasks (Feltz &

Riessinger, 1990). Collective efficacy beliefs are also derived from all four of Bandura's sources of self-efficacy. Teams hold efficacy beliefs based on previous team performance (Bandura, 1997), verbal persuasion through motivation by a coach (Vargas-Tonsing & Bartholomew, 2006), vicarious experience through watching similar teams (Feltz & Lirgg, 2001), and physiological and affective state via perceptions of the group's arousal and nervousness (Feltz & Lirgg, 2001).

In all areas of athletic self-efficacy related research, increased self-efficacy is ultimately related to improved athletic outcomes and athletic performance. The fact that two of the sources of Bandura's self-efficacy information are non-existent in the coaching efficacy literature implies that there is an incomplete picture of how coaches ascertain their efficacy information. Therefore, to date, research regarding the influence of coaching efficacy on athletic performance outcomes is incomplete as well. Information on the influence of both vicarious experience and physiological and affective state on coaching efficacy beliefs should broaden the scope of efficacy judgments influencing efficacy among coaches. Specifically, if vicarious experience is related to coaching efficacy, one's perception of their coaching abilities can be improved by watching other effective coaches. Similarly, if physiological and affective state influences a sense of efficacy, techniques can be learned and then implemented to attain the optimal level of physiological and affective arousal during coaching. For example, if a coach is experiencing a sense of positive affect, they are more likely to use positive language toward their athletes, including praise. Praise is an effective and likeable coaching behavior among athletes, as athletes have been shown to respond best to coaches who provided positive reinforcement and enhanced athletes' self esteem (Smith & Smoll,

1990). Along the same lines, if a coach is experiencing a sense of negative affect, they are more likely to use negative language and gestures toward their athletes.

The purpose of this study is to identify additional sources of coaching efficacy within the context of Bandura's theory of self-efficacy. Although Bandura (1997) states that efficacy is derived from one or more of the four categories of sources, it is useful to consider sources that have not been researched previously. The theory of self-efficacy has been instrumental in the understanding of many psychological processes. In many realms, all four sources have been shown to be influential on one's sense of self-efficacy. In other athletic contexts, such as individual athletic self-efficacy and collective team efficacy, all four sources are important in forming one's efficacy judgments. However, two of these sources, vicarious experience and physiological and affective state, have been neglected in research on sources of coaching efficacy. A goal of this study is to assess the influence of these two sources in particular on one's sense of coaching efficacy.

In order to complete this goal, the methodology of this study is different from that of particular previous studies on coaching efficacy. Some past research has utilized interviews or single item measurements of sources (Feltz et al., 1999; Chase et al., 2005; Feltz et al., 2009). These methodologies of research, especially interviews, have relied primarily on a coach's introspection. That may have led to the omission of key factors about which coaches might not be consciously aware. This may occur in particular when a coach is asked to respond to an open-ended question. In these methodologies of research, Bandura's (1997) categories of vicarious experience and physiological and affective state have not been identified as broad sources of coaching efficacy. Rather than attempting to obtain these categories from interviews with participants, the current study

assessed the relationship between quantitative measures of vicarious experience and physiological and affective state with the measure of coaching efficacy. This methodology does not rely on a coach's assumed awareness of factors that have influenced their coaching. Quantitative research, in this situation, provides a concrete answer to the question of whether or not these two possible sources of coaching efficacy are relevant. In the previous ten years of research on coaching efficacy, these two sources of efficacy information have not been elicited. Rather, attention has been focused on enactive mastery experience as the main source of self-efficacy and, while it may be true that enactive mastery experience provides a great deal of efficacy information, the other sources may also hold some weight. Results reported in the literature can only account for 13% of the variance in coaching efficacy; therefore, more sources of coaching efficacy must be present. This is the reason to look at vicarious experience and physiological and affective state as possible additional sources of coaching efficacy.

In addition, rather than retrofitting newly discovered sources of coaching efficacy into Bandura's categories (as has been done previously), the current study used Bandura's sources of self-efficacy as the framework to elicit additional sources of coaching efficacy. This framework may show that the additional sources account for a greater percentage of the variance in coaching efficacy. The ultimate goal of this study is to provide more information regarding factors that influence a high sense of efficacy in a coach. In addition, this information will be instrumental in the training and development of effective coaches. The information acquired from this study may help give coaches better tools to use so they can, in turn, be more effective at their job. An increased sense of coaching efficacy has the ability to lead to an improvement in coaching behavior – due

to the direct link between the two factors. Overall, more effective coaching can lead to a more positive experience among athletes. This, in turn, may lead to a higher rate of retention for individuals involved in sports and physical activity, especially young athletes, due to the positive associations with physical activity created by effective coaching. Ultimately, this can lead to healthier lifestyles in our population because of the positive aspects and associations with physical activity. Coaches have a great deal of influence on individuals and groups of athletes they work with, and a more efficacious coach should elicit a high level of performance from an athlete both on the field and off.

In the present study, I hypothesized that sources of coaching efficacy are derived from all four categories – enactive mastery experience, vicarious experience, verbal persuasion, and physiological and affective state – of sources of self-efficacy and will be related to the measure of coaching efficacy and its subcategories. I also hypothesize that the internal reliability of the scales created – enactive mastery experience, verbal persuasion, and vicarious experience – will meet acceptable requirements. Most of the sources that have been identified in previous literature fall into the enactive mastery experience category. Thus, I hypothesize that the Bandura based measure of enactive mastery experience will be correlated with the sources previously identified in the coaching efficacy literature. According to Bandura (1977), enactive mastery experience is the most dependable source of efficacy information. Thus, I hypothesized that enactive mastery experience will be the strongest predictor of coaching efficacy and its subcategories. Based on the previous research that identifies differences between sources of coaching efficacy among different levels of coaches, I also hypothesized that the sources of coaching efficacy will differ between high school and college coaches. Due to

the exploratory nature of these analyses, I do not have specific predictions about the nature of these differences.

Method

Participants

Coaches were recruited for this study through the use of the Minnesota Intercollegiate Athletic Conference directory and the Minnesota State High School League. Written correspondence via email was sent to 660 high school and college coaches explaining the nature of the study and giving them access to the survey. A total of 224 head coaches participated in this study, yielding a response rate of 34%. There were 161 male coaches, 43 female coaches, and 21 coaches who did not provide a gender. The average age of coaches was 43.66 years ($SD = 10.98$). Participants were head coaches of athletic teams of varying levels, abilities, and sports. There were 85 college varsity coaches, 111 high school varsity coaches, 3 high school non-varsity coaches, 1 youth competitive travel coach, and 24 coaches who did not identify their teams' level of play. Participants, upon completion of the study, were entered into a drawing for five gift certificates to Dick's Sporting Goods ranging from \$5 to \$25.

Measures

Demographic Measures

Demographic information was collected, including the coaches' gender, age, ethnicity, educational background, and sport background. More sport specific information was collected, including the primary sport coached, years of coaching primary sport, years of playing primary sport, and hours spent coaching. Information regarding the age and level of competition of the coach's current team was also collected. This information

has been shown to play an important role in coaching efficacy in previous research (Feltz et al., 1999; Chase et al., 2005; Feltz et al., 2009). Not all factors were able to be included in analyses due to the limited number of participants.

Coaching Efficacy

The Coaching Efficacy Scale was used to assess coaches' levels of efficacy with regard to their ability to affect the learning and performance of their athletes (Feltz et al., 1999; Myers et al., 2005). The scale consists of 24 questions that measure all four dimensions of coaching efficacy. Participants rated their confidence on a 5-point Likert scale ranging from 1 (no confidence) to 5 (complete confidence). During initial and subsequent analyses, the CES has demonstrated moderately acceptable reliability coefficients. Upon initial instrument development, the CES had Cronbach's alpha values of .87 to .93 for its subscales as well as for the entire scale and also reported acceptable test-retest coefficients, ranging from .77 to .84 (Feltz et al., 1999). In the present study, the CES had an acceptable Cronbach's alpha value of .93. The subscales also achieved internally consistent Cronbach's alpha values of .89, .83, .78, .89 for Game Strategy Efficacy, Technique Efficacy, Character Building Efficacy, and Motivation Efficacy, respectively.

Sources of Coaching Efficacy

The Sources of Coaching Efficacy Scale, as seen in the Appendix, was designed for the present study to assess coaches' sources of efficacy. Bandura's categories of sources of self-efficacy provided the basis for the four-part structure of the Sources of Coaching Efficacy Scale. Bandura's four categories are enactive mastery experiences, verbal persuasion, vicarious experience, and physiological and affective state.

The category of enactive mastery experiences was defined by two general subcategories on the Sources of Coaching Efficacy Scale. One subcategory was theoretically derived from Bandura's definition of enactive mastery experience and the other was based on previous coaching efficacy research. There were a total of fifteen items in the first subcategory that addressed a coach's game performance, athletes' improvement, and improvement in coaching skills. Items were specifically designed to characterize the coaches' previous coaching experience in each area. Items representing this category include "I have had periodic failures, but I continue to improve steadily over time," "Most of my successes are attributable solely to my own ability as a coach," and "I have had repeated successes at relatively difficult tasks." These items were rated on a five-point Likert scale, ranging from "not at all" to "completely." The other subcategory of enactive mastery experience included questions used to measure prior experience in past coaching efficacy studies. There are 11 items in this category of the scale – also named the Feltz subscale. All of the questions in this subcategory were variables identified by Feltz and colleagues in previous research. The items in this scale were used as a comparison to the theoretically derived subcategory. Items in this subcategory are related to knowledge of rules, extent of coaching preparation, and prior success (Feltz, et al., 1999; Chase et. al., 2005).

The second component of the Sources of Coaching Efficacy Scales involves eleven items about verbal persuasion. Six of the questions on the 11-item scale are adapted from a questionnaire by Park (1992) about perceived social support. These questions ask coaches to rate their perceptions of support for their teams from their athletic director, faculty, students, athletes, parents, and community. Each question was

scored on a 9-point Likert scale ranging from “not at all supportive” to “extremely supportive.” The test-retest reliability of the social support questions range from .80 to .89. Another theme of verbal persuasion is related to the praise and criticism a coach has received from various sources, thus the researcher developed five items assessing this topic. Each question was scored on a 9-point Likert scale from “never” to “frequently.”

The third component of the Sources of Coaching Efficacy Scale was about vicarious experience. There are eight items in this category. These questions look at coaching actions, style, and habits that have been learned through observation. Sample questions include “How much of your coaching style/actions was adapted from another coach or coaches?” and “Do you notice coaching habits exhibited by other coaches when watching the sport you coach?” Each question was scored on a 5-point Likert scale from “none/never” to “always/all.”

The final component of the Sources of Coaching Efficacy Scale concerned physiological and affective state. One portion of this measure is the Perceived Stress Scale (PSS) developed by Cohen, Kamarck, and Mermelstein (1983). There are 14 items on the PSS; each item is scored on a 5-point Likert scale ranging from “never” to “very often.” The instructions of the PSS were adapted to pertain specifically to coaching experiences in the past month. Cohen et al. (1983) reported a strong internal consistency of .84, .85, and .86 among three samples. The test-retest reliability was .85. In the present study, the PSS yielded an adequate Cronbach’s alpha value of .75. The Positive and Negative Affect Scale (PANAS), developed by Watson, Clark, and Tellegen (1988), also measured physiological and affective states. The instructions of the PANAS were also adapted to relate specifically to coaching. Participants are asked to indicate to what extent

they generally feel a particular emotion on a 5-point Likert scale ranging from “very slightly or not at all” to “extremely.” Example feelings and emotions include “distressed,” “enthusiastic,” and “determined” (Watson et al., 1988). An acceptably high Cronbach’s alpha was reported for positive affect, .86 to .90, and negative affect, .84 to .87. Watson et al. (1988) also reported high test-retest reliabilities of .79 for positive affect and .81 for negative affect. In the present study the Cronbach’s alpha value was .86 for the entire scale and .84 for positive affect and .87 for negative affect.

Procedure

Coaches from various leagues and organizations were recruited to participate in this study. The study was administered via SurveyMonkey, a web based survey instrument. Prior to their participation, coaches read a brief explanation of the study and were informed that their responses would be completely confidential. All participants were required to give their informed consent. At the end of the survey coaches who wish to be entered in the drawing for prizes were asked to provide their email address for contact information.

Results

The purpose of this study was to identify additional sources of coaching efficacy within the context of Bandura’s theory of self-efficacy. The first step in this process was to confirm the reliability of all scales used in the study, focusing on those that were created especially for this study. The Cronbach’s alpha statistic was used to measure the reliability of all scales. The Coaching Efficacy Scale, Perceived Stress Scale, and the Positive and Negative Affect Schedule all had acceptable reliability coefficients ($alpha = .923$, $alpha = .748$, $alpha = .864$, respectively). The Enactive Mastery Experience, Verbal

Persuasion, and Vicarious Experience scales fell just short of acceptable reliability coefficients ($\alpha = .687$, $\alpha = .686$, $\alpha = .678$, respectively). The means and standard deviations of all scales and subscales are reported in Table 1.

Pearson correlations were conducted to determine the relationship between the CES and the sources of self-efficacy scales. As predicted, the CES showed a significant correlation with all of the four proposed sources of coaching efficacy: enactive mastery experience ($r = .257$, $p = .002$), verbal persuasion ($r = .331$, $p < .001$), vicarious experience ($r = .208$, $p = .012$), and physiological and affective state, as measured by perceived stress ($r = -.237$, $p = .004$) and positive and negative affect ($r = .432$, $p < .001$).

A scale was created for the measurement of enactive mastery experience based on sources identified in the review of literature (the Feltz subscale). The Cronbach's alpha for this scale was .422, indicating an unacceptable level of reliability. The validity of the Bandura enactive mastery experience scale was tested through correlation with the Feltz subscale. There was no significant correlation between the two scales ($r = .136$, ns). However, the Feltz subscale was significantly correlated with the Coaching Efficacy Scale ($r = .269$, $p = .019$).

Two regression analyses were conducted as the first step in determining whether the factors showed a meaningful association with the CES. A simultaneous regression was conducted with enactive mastery experience, verbal persuasion, vicarious experience, perceived stress, and positive and negative affect as predictors of coaching efficacy; when considered in tandem, these five predictors explained a significant amount of the variance ($Adj. R^2 = .297$, $F(5,118) = 9.723$, $p < .001$). Positive and negative affect showed a significant association with coaching efficacy ($t = 4.425$, $p < .001$), as well as

vicarious experience ($t = 2.356, p = .020$). Verbal persuasion and perceived stress had a marginally significant relationship with coaching efficacy ($t = 1.902, p = .060$; $t = 1.883, p = .062$, respectively).

Another simultaneous regression was conducted with enactive mastery experience, Feltz's enactive mastery experiences, verbal persuasion, vicarious experience, perceived stress, and positive and negative affect as predictors of coaching efficacy; these predictors also explained a significant amount of the variance ($Adj. R^2 = .302, F(6,56) = 5.029, p < .001$). Positive and negative affect showed a significant association with coaching efficacy ($t = 3.272, p = .002$) and the relationship between enactive mastery experience and coaching efficacy was marginally significant ($t = 1.839, p = .072$); no other factors added significant variance to the model.

Multiple regression analyses were conducted to determine the relative influence of enactive mastery experience, verbal persuasion, vicarious experience, perceived stress, and positive and negative affect as predictors of coaching efficacy. These analyses were conducted in order to look at the unique variance in coaching efficacy associated with each source in a systematic way. Separate regression analyses were conducted with each subscale of coaching efficacy as well as the total coaching efficacy score serving as the criterion variable. In addition, for each aspect of coaching efficacy, a regression analysis was conducted which included only Bandura's sources of efficacy (hereby referred to as the five factor regression) and another analysis with all sources, including the Feltz subscale (referred to as the six factor regression). A total of six significant models emerged; the standardized coefficients and part correlations for all significant models are reported in Table 2.

A significant model emerged for the five factor regression of the CES subscale motivation efficacy ($Adj. R^2 = .251, F(5,125) = 9.367, p < .001$). In this model, the positive and negative affect scale and verbal persuasion were significant predictors of motivation efficacy ($\beta = .369, part r = .290, p < .001; \beta = .293, part r = .271, p = .001$, respectively). In addition, a significant model emerged for the six factor regression of motivation efficacy ($Adj. R^2 = .326, F(6,57) = 5.591, p < .001$). As in the previous model, positive and negative affect was a significant predictor of motivation efficacy ($\beta = .575, part r = .466, p < .001$). In this model, however, verbal persuasion was only marginally significant ($\beta = .236, part r = .216, p = .053$).

A significant model emerged for the five factor regression of the CES subscale game strategy efficacy ($Adj. R^2 = .124, F(5,121) = 4.425, p = .001$). Similar to the previous model, positive and negative affect was a significant predictor of game strategy efficacy ($\beta = .272, part r = .206, p = .017$). In addition, vicarious experience was a significant predictor of game strategy efficacy ($\beta = .182, part r = .179, p = .038$).

Similarly, a significant model emerged for the five factor regression of the CES subscale technique efficacy ($Adj. R^2 = .125, F(5,122) = 4.486, p = .001$). As in previous models, positive and negative affect was a significant predictor of technique efficacy ($\beta = .284, part r = .225, p = .009$). Vicarious experience was another significant predictor of technique efficacy ($\beta = .203, part r = .200, p = .020$).

A significant model also emerged for the five factor regression of the CES subscale character building efficacy ($Adj. R^2 = .080, F(5,125) = 3.182, p = .010$). The only significant predictor in this model was positive and negative affect ($\beta = .294, part r = .232, p = .008$).

A significant model emerged for the five factor regression of total coaching efficacy ($Adj. R^2 = .270$, $F(5,118) = 9.723$, $p < .001$). As in previous models, positive and negative affect was a significant predictor of coaching efficacy ($\beta = .454$, $part r = .348$, $p < .001$). Vicarious experience was another significant predictor of coaching efficacy ($\beta = .188$, $part r = .185$, $p < .001$). Both verbal persuasion and perceived stress were marginally significant predictors of coaching efficacy ($\beta = .162$, $part r = .185$, $p = .060$; $\beta = .186$, $part r = .148$, $p = .062$).

Finally, a significant model emerged for the six factor regression of total coaching efficacy ($Adj. R^2 = .302$, $F(6,56) = 5.029$, $p < .001$). Positive and negative affect was, once again, a significant predictor of coaching efficacy ($\beta = .513$, $part r = .365$, $p = .002$). Enactive mastery experience was a marginally significant predictor of coaching efficacy ($\beta = .214$, $part r = .205$, $p = .072$).

Positive and negative affect was a significant predictor of coaching efficacy in each model, as displayed in Table 2. Verbal persuasion was a significant predictor of motivation efficacy, and the five factor model of total coaching efficacy. Vicarious experience was a significant predictor of game strategy efficacy, technique efficacy, and the five factor model of total coaching efficacy. Perceived stress was a significant predictor of coaching efficacy in the five factor model. Enactive mastery experience was a moderately significant predictor of total coaching efficacy in the six factor model.

Exploratory Analyses

Pearson correlations were conducted to determine the relationship between the CES and the sources of self-efficacy scales for high school and college coaches respectively. For high school coaches, the CES showed a significant correlation with

verbal persuasion ($r = .344, p = .002$), vicarious experience ($r = .242, p = .031$), and positive and negative affect ($r = .418, p < .001$). For college coaches, the CES showed a significant correlation with Bandura's enactive mastery experience ($r = .298, p = .018$), the Feltz subscale ($r = .452, p < .001$), verbal persuasion ($r = .303, p = .015$), perceived stress ($r = -.254, p = .046$), and positive and negative affect ($r = .469, p < .001$).

The same regression analyses that were conducted to assess the unique variance in coaching efficacy associated with each source were conducted separately for high school and college coaches. Significant models emerged for the five factor regression of the CES subscale motivation efficacy among high school coaches ($Adj. R^2 = .314, F(5,66) = 7.047, p < .001$), the six factor regression of the CES subscale motivation efficacy ($Adj. R^2 = .549, F(6,28) = 6.679, p < .001$), the five factor regression of total coaching efficacy ($Adj. R^2 = .192, F(5, 61) = 3.905, p = .004$), and the six factor regression of total coaching efficacy ($Adj. R^2 = .287, F(6,27) = 2.813, p = .036$). For all four significant models, positive and negative affect was a significant predictor of coaching efficacy (*part* $r = .405, .655, .336, \text{ and } .509$, respectively). The only other factors to have an even marginally significant association with any regression of coaching efficacy were verbal persuasion and vicarious experience in the five factor model of motivation efficacy.

For college coaches, the significant models included the five factor regression of the CES subscale motivation efficacy ($Adj. R^2 = .167, F(5,53) = 3.126, p = .016$), the five factor regression of the CES subscale game strategy efficacy ($Adj. R^2 = .141, F(5,51) = 2.675, p = .033$), the six factor regression of the CES subscale game strategy efficacy ($Adj. R^2 = .371, F(6,26) = 3.558, p = .015$), the five factor regression of the CES subscale technique efficacy ($Adj. R^2 = .175, F(5,53) = 3.244, p = .013$), the five factor regression

of the CES subscale character building efficacy ($Adj. R^2 = .163, F(5,53) = 3.065, p = .018$), the five factor regression of total coaching efficacy ($Adj. R^2 = .310, F(5,51) = 5.592, p < .001$), and the six factor regression of total coaching efficacy ($Adj. R^2 = .391, F(6,26) = 3.782, p = .011$).

In these models, positive and negative affect was a significant predictor of total coaching efficacy and the dimensions of game strategy efficacy, character building efficacy, and technique efficacy ($\beta = .607, part r = .447, p < .001; \beta = .408, part r = .300, p = .025; \beta = .421, part r = .336, p = .010; \beta = .329, part r = .262, p = .041$). Bandura's enactive mastery experience was a significant predictor of technique efficacy and game strategy efficacy ($\beta = .363, part r = .335, p = .010; \beta = .427, part r = .371, p = .027$). Feltz's enactive mastery experience was a significant predictor of total coaching efficacy and game strategy efficacy ($\beta = .530, part r = .406, p = .015; \beta = .537, part r = .412, p = .015$). Verbal persuasion was a significant predictor of motivation efficacy ($\beta = .357, part r = .327, p = .012$). Vicarious experience was a significant predictor of game strategy efficacy ($\beta = .323, part r = .310, p = .021$). Perceived stress was a marginally significant predictor of game strategy efficacy ($\beta = .291, part r = .223, p = .093$).

Discussion

The present study was conducted to determine additional sources of coaching efficacy. Even further, this study attempted to refine the categorization of sources by utilizing Bandura's theoretical framework. I predicted that sources of coaching efficacy information would be derived from all four sources of self-efficacy. Enactive mastery experience has been shown to be the leading source influencing efficacy information; therefore, it was predicted that this would be the most potent source of coaching efficacy.

The rationale for the inclusion of all four sources in this investigation was to attempt to increase the predictive utility of the sources of coaching efficacy – as all have been shown to be important sources of efficacy information in other realms. Previous research on sources of coaching efficacy has accounted for 13% of the variance in total coaching efficacy. The present research accounted for up to 30.2% of the variance among coaches of all levels. This is a drastic improvement in predictive utility relative to previous research. The increase in the amount of variance accounted for in coaching efficacy in the present research may be due to a wider range of sources that capture more information related to a coach's experience as well as ways in which a coach is informed about his/her efficacy.

My study addressed a variety of research questions about the expansion of sources of coaching efficacy. The first question addressed is whether the scales that were created for this study, derived from Bandura's model of self-efficacy, were reliable measures. The reliability coefficient of several of the scales used to measure sources of coaching efficacy fell just short of acceptable reliability. Thus, one limitation of the present study was the dependence on measures with potentially problematic psychometric properties to assess coaches' enactive mastery experience, verbal persuasion, and vicarious experience. Despite the modest alpha levels, the coherence among the items was strong; no single item had a large impact on the overall Cronbach's alpha of the scales. However, a higher internal reliability would have been preferable for the three scales in order to meet acceptable reliability levels. There are various ways to increase the reliability of these scales, such as the inclusion of additional items related to each particular element of the scale. Another way to increase the reliability of these scales would be to increase the

range of experience in the population of coaches participating in the research. Expanding the participant pool to include youth volunteer coaches and non-varsity coaches rather than limiting the level of coaches to high school and college head coaches might also enhance the measures' success by increasing the range of responses on all of the parts of the Sources of Coaching Efficacy scale.

Despite disappointing internal reliability, the source scales nonetheless provide interesting glimpses into the relationship between the sources of coaching efficacy and coaching efficacy. Each source showed a significant association with the CES. This suggests that all four sources of Bandura's theory of self-efficacy – enactive mastery experience, verbal persuasion, vicarious experience, and physiological and affective state – are important in forming a coach's efficacy judgment. Enactive mastery experience is a predictor of efficacy beliefs because information based on one's past performance accomplishments allows the individual to have direct memories of the event and control the cognitive processing of these events. In much of the past research on sources of self-efficacy this has been the most potent source of efficacy information. In the coaching efficacy literature, most of the sources of efficacy information fall into past performance accomplishments. However, in the present study, enactive mastery experience was a significant, but not the strongest, correlate of coaching efficacy.

Verbal persuasion has the ability to influence one's efficacy judgment through communication with others, while vicarious experience influences one's efficacy judgments based on the observation of others and through social comparison. In the present study verbal persuasion was the second most potent correlate of total coaching efficacy and vicarious experience showed the weakest correlation with coaching efficacy.

This suggests that coaches derive more efficacy information from events that they are directly involved in, rather than via imitation or social comparison.

Physiological and affective state can influence a coach's efficacy beliefs through the autonomic arousal that is associated with fear and self-doubt, or with being energized and ready for performance. One component of physiological and affective state, positive and negative affect, showed the strongest correlation with coaching efficacy. This implies that perceived arousal is a very important source of efficacy information.

The PANAS proved to be the most salient source of coaching efficacy and its subscales. This is a significant addition to the literature on coaching efficacy. Prior to this study, little attention had been paid to physiological and affective state as a source of coaching efficacy. Although this source had been identified as an important source of efficacy information in other areas of efficacy research – including athletic self-efficacy and collective efficacy – the same degree of interest in physiological and affective state did not follow in research on coaching efficacy. The current research demonstrates that physiological and affective state is an important source of coaching efficacy. This implies that the perception of autonomic arousal plays a significant role in how coaches derive their efficacy beliefs. Specifically, positive and negative affect was the most salient source of coaching efficacy in the present study. This implies that a coach with more positive feelings and emotions will be a more efficacious coach. Further, if an intervention were developed to enhance positive feelings and emotions in a prospective coach or coaching candidate, my data suggest that the coach will feel more efficacious and in turn be more effective in his/her coaching.

In contrast to the previous literature on sources of coaching efficacy, this research showed that enactive mastery experience was not the strongest source of coaching efficacy across all subscales of coaching efficacy. Bandura's enactive mastery experience was close to a significant predictor of coaching efficacy only in the six factor regression of total coaching efficacy. The Feltz subscale of enactive mastery experience was not a significant predictor in any of the regression analyses. This could be due to the fact that many disparate items were included in the enactive mastery experience scales. The lack of internal coherence is evident in the low alpha for the Feltz subscale. Thus, one area of enactive mastery may have been very important to most coaches, but its importance was diluted when combined with other enactive mastery sources of efficacy information. A way to test this in future research would be to perform an item analysis on each aspect of the enactive mastery experience scale to discern the elements that are most strongly associated with coaching efficacy.

When each of the subcategories of coaching efficacy was viewed separately, some sources of efficacy information were more predictive than others. The four subcategories of coaching efficacy include: technique efficacy, game strategy efficacy, character building efficacy, and motivation efficacy. The sources of PANAS and vicarious experience were significant predictors of a coach's technique efficacy. Positive and negative affect, or more broadly physiological and affective state, influences one's sense of technique efficacy. A positive feeling may have a beneficial effect when a coach needs to use instructional and diagnostic skills with his/her athletes. This may encourage the athlete to be more enthusiastic about learning or improving a skill and in turn increase the coach's sense of efficacy because they see their athlete succeeding. Vicarious experience

has the ability to influence a coach's technique efficacy as a coach may learn how to successfully teach certain skills from another coach.

The sources of PANAS and vicarious experience were also significant predictors of a coach's game strategy efficacy. The strong correlation of technique efficacy and game strategy efficacy sources, as reported in the previous literature, further demonstrates an association between these two dimensions of coaching efficacy. In the present study, technique efficacy and game strategy efficacy were significantly correlated as well ($r = .723, p < .001$). Positive and negative affect influences one's sense of game strategy efficacy as a more positive feeling may have a beneficial effect on the ability to coach and lead a team to victory during competition. If a coach is more positive, they are more likely to perceive their autonomic arousal as a sign of being energized and ready for performance. The positive affect will more likely transfer to a coach's confidence in his/her ability to guide his/her team to success. Vicarious experience has the ability to influence a coach's game strategy efficacy; a given coach may have learned strategies from other successful coaches for effective play design, play calling, and game management to ensure a victory.

The sources of PANAS and verbal persuasion were significant predictors of motivation efficacy. Positive and negative affect influences one's sense of technique efficacy because a positive feeling can have a beneficial effect when one is attempting to motivate his/her athletes. A coach with positive feelings will be more likely to use positive words to motivate and transfer a sense of encouragement to his/her athletes. Verbal persuasion has the ability to influence a coach's motivation efficacy as others may have commented favorably on their motivational coaching style.

The PANAS was the strongest predictor of character building efficacy. Positive and negative affect influence one's sense of character building efficacy because feeling more positively can have a beneficial effect when one is attempting to influence the personal development of and positive attitude toward sport in the athletes they coach. A successful coach is characterized by an ability to teach athletes skills for life as well as on the field. A coach with more positive feelings about themselves and their coaching will project their positivity toward their athletes.

When results from high school and college coaches were analyzed separately, two different patterns emerged. Overall, high school coaches relied only on positive and negative affect as a source of their sense of efficacy. The fact that positive and negative affect was the only significant predictor of coaching efficacy across all models of high school coaches indicates a reliance on this factor as the major influence in their sense of efficacy. High school coaches are often full time teachers as well; it is possible that other strategies – such as vicarious experience – may not be as easily accessible. In addition, there is less of an emphasis on win-loss records and funding for athletics at the high school level. This allows both the coach and the players to participate in their sport for the enjoyment of the game. This also lends itself very well to an increased emphasis on positive emotion as a major influence of coaching efficacy.

In contrast, college coaches derived their efficacy information from a variety of sources. Across the models, each source was a significant predictor for at least one of the seven significant models. Positive and negative affect was a large predictor in the majority of significant college models, but other sources proved to be significant indicators of coaching efficacy as well. Several explanations may account for the broader

range in the number of sources for college coaches. In the college athletic setting, there is an increased emphasis on winning. This may result in coaches with better coaching skills in general (more efficacious) at the college level, and these coaches may be able to utilize a greater number and variety of resources to make themselves more efficacious coaches. In addition, at the college level, the position of head varsity coach is a full time job. Coaches typically have a more experienced résumé before assuming a role as a college coach when compared to the résumé of a high school coach. This may, for example, increase their enactive mastery experience and thus cause it to be a significant predictor of coaching efficacy. In general, as there is a greater emphasis placed on winning at the college level, coaches must be able to influence their athletes with an assortment of techniques in addition to a positive demeanor.

Coaches from both individual and team sports were recruited as subjects for this study, and thus the measure of win-loss percentage was not applicable to all coach participants. Coaches of sports such as swimming, track and field, cross country, and golf did not report a win/loss record or reported an inaccurate record based on individual team members' accomplishments. If win/loss percentage is an important predictor of coaching efficacy, as previous research reports, then future researchers will need to derive a standardized metric to assess a coach's team success during a season that is applicable to all sports.

Another limitation of the present study was the small variance in summary scores of the CES. This may be a result of a response bias in the sense that an efficacious coach would be more likely to participate in the study or complete it once they begin. There may have also been a sample bias in the present study, since predominantly high school

and college head coaches were used. Because head coaches have a paid coaching position and have been assigned a position of authority, they may tend towards a higher sense of efficacy. Perhaps a wider range of coaching efficacy could be obtained by recruiting coaches in non-paying coaching positions and/or those who do not coach as their primary means of income. The category of volunteer and parent coaches for youth sports teams would be part of this group – coaches that work with young children as they are first being introduced to organized sport. Volunteer and parent coaches are an important type of coach to target in terms of increasing their coaching efficacy as they may be the first coach for a young athlete, and may have a significant impact on a young athlete's future associations with physical activity.

Another limitation of this study is the use of the PSS and PANAS as the measures of Bandura's definition of physiological and affective state. These scales are subjective measures of one's physiological and affective state and measure one's perception of those states rather than the actual state. An objective measure of physiological and affective state would be a pulse rate or another measure that does not rely on self-report. An additional limitation in the use of these scales is that it is difficult to ascertain a coach's perception/response to his/her physiological and affective state using these scales. According to Bandura, one's physiological and affective state is important because of a coach's response to the state – whether that state is associated with fear and self-doubt or with being energized and ready for performance. A person with high self-efficacy often perceives arousal as conducive to a successful performance and someone with low self-efficacy tends to view physiological arousal as a negative state that reflects personal insufficiencies in their performance. Rather than coaches' actual physiological and

affective state, coaches' reaction to their state is important in determining efficacy-influencing information. The use of video review of a coach during practice or game situations may be a useful tool for measuring this.

A further limitation of the present study involves how the PSS and PANAS measures were reported. Coaches were asked to respond to questions regarding their overall stress and emotions during coaching. However, coaches may have been influenced by their current state – if a coach was in a positive mood, the results of the PANAS may reflect that rather than their emotions during coaching. In the present study, the PSS and PANAS utilized retrospective self-report measures. One way to resolve this issue would be to administer the questionnaire to coaches within their context of coaching. This would reduce a retrospective bias and may assist in the achievement of greater accuracy in the results, as coaches would be tested in context.

Future research should include a focus on the determination of additional sources of coaching efficacy. Specifically, the source of physiological and affective state should be examined in greater depth. Physiological and affective state is new to the body of research on sources of coaching efficacy. It would be useful to learn more about physiological and affective state as this source displayed a very large influence on coaching efficacy and all of its dimensions. In addition, future research should focus on utilizing the sources obtained from this study in developing training methods that would assist coaches to be more effective in their work with athletes. Interventions using tools such as video review, internships, and job shadowing may be useful in building one's sense of coaching efficacy. Video review may be useful for coaches as it provides a means to examine their practice and game actions as well as demeanor. This review

would allow coaches to see aspects of their coaching that may be improved and may not have been apparent otherwise. Another intervention technique that would be useful is adding sessions during coaching clinics on particular topics or factors that would increase one's coaching efficacy. A session on vicarious experience or physiological and affective state could be included in future coaching clinics. Attending coaching clinics has been shown to increase one's coaching efficacy; presumably, attending a clinic session that is targeted and has a specific agenda of providing tools to increase one's coaching efficacy would have a more pronounced effect. The practical application of these sources – finding ways to increase a coach's sense of efficacy by targeting specific sources of coaching efficacy – will lead to more effective coaches and future generations of athletes who have positive associations with sport and physical activity.

References

- Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavioral change. *Psychological Review, 84*, 191-215
- Bandura, A. (1997). *Self-efficacy: The exercise of control*. New York, NY: WH Freeman and Company.
- Barber, H. (1998). Examining gender differences in sources and levels of perceived competence in interscholastic coaches. *The Sport Psychologist, 12*, 237-252.
- Chase, M. A., Feltz, D. L., Hayashi, S. W., & Hepler, T. J. (2005). Sources of coaching efficacy: The coaches' perspective. *International Journal of Sport and Exercise Psychology, 3*, 27-40.
- Cohen, S., Kamarck, T., & Mermelstein, R. (1983). A global measure of perceived stress. *Journal of Health and Social Behavior, 24*, 385-396.
- Denham, C. H., & Michael, J. J. (1981). Teacher sense of efficacy: A definition of the construct and a model for further research. *Educational Research Quarterly, 6*, 39-63.
- Feltz, D. L., Chase, M. A., Moritz, S. E. & Sullivan, P. J. (1999). A conceptual model of coaching efficacy: preliminary investigation and instrument development. *Journal of Educational Psychology, 4*, 765-776.
- Feltz, D. L., Hepler, T. J., Roman, N., & Paiement, C. (2009). Coaching efficacy and volunteer youth sport coaches. *The Sport Psychologist, 23*, 24-41.
- Feltz, D. L., & Lirgg, C. D. (1998). Perceived team and player efficacy in hockey. *Journal of Applied Psychology, 83*, 557-564.

- Feltz, D.L., & Lirgg, C.D. (2001). Self-efficacy beliefs of athletes, teams, and coaches. In R.N. Singer, H.A. Huasenblas, & C. Janelle (Eds.) *Handbook of Sport Psychology* (p. 340-361). New York: Wiley.
- Feltz, D.L., & Riessinger, C.A. (1990). Effects on in vivo emotive imagery and performance feedback on self-efficacy and muscular endurance. *Journal of Sport and Exercise Psychology*, 5, 132-143.
- Horn, T.S. (2008). Coaching effectiveness in the sport domain. In T.S. Horn (Ed.), *Advances in Sport Psychology* (3rd ed.), (p. 239-267). Champaign, IL: Human Kinetics.
- Malete, L; Feltz, D.L. (2000). The effect of a coaching education program on coaching efficacy. *The Sport Psychologist*, 14, 410-417.
- Marback, T. L., Short, M. W., Short, S. E. & Sullivan, P. J. (2005). Coaching confidence: An exploratory investigation of sources and gender differences. *Journal of Sport Behavior*, 28, 18-34.
- McCullagh, P., & Weiss, M.R. (2001). Modeling: Considerations for motor skill performance and psychosocial responses. In R.N. Singer, H.A. Hausenblas, & C.M. Janelle (Eds.), *Handbook of Sport Psychology* (p. 205-238). New York: Wiley.
- Moritz, S. E. (1997). *The effect of task type in the relationship between efficacy beliefs and performance*. Unpublished doctoral dissertation, Michigan State University.
- Moritz, S.E., Feltz, D.L., Fahrbach, K., & Mack, D. (2000). The relation of self-efficacy measures to sport performance: A meta-analytic review. *Research Quarterly for Exercise and Sport*, 71, 280-294.

- Myers, N.D., Vargas-Tonsing, T.M., Feltz, D.L. (2005). Coaching efficacy in intercollegiate coaches: sources, coaching behavior, and team variables. *Psychology of Sport and Exercise*, 6, 129-143.
- Myers, N. D., Wolfe, E. W., & Feltz, D. L. (2005). An evaluation of the psychometric properties of the coaching efficacy scale for coaches from the united states of america. *Measurement in Physical Education and Exercise Science*, 9, 135-160.
- Park, J.K. (1992). *Construction of the coaching confidence scale*. Unpublished doctoral dissertation. Michigan State University, East Lansing.
- Smith, H. M. & Betz, N. E. (2000). Development and validation of a scale of perceived social self-efficacy. *Journal of Career Assessment*, 8, 283-301.
- Smith, R.E., & Smoll, F.L. (1990). Self-esteem and children's reactions to youth sport coaching behaviors: A field study of self-enhancement processes. *Developmental Psychology*, 26, 987-993.
- Tsorbatzoudis, H., Daroglou, G., Zahariadis, P., & Grouios, G. (2003). Examination of coaches' self-efficacy: Preliminary analysis of the coaching efficacy scale. *Perceptual and Motor Skills*, 97, 1297-1306.
- Vargas-Tonsing, T. (2004). An examination of pre-game speeches and their effectiveness in increasing athletes' levels of self-efficacy and emotion. Unpublished doctoral dissertation, Michigan State University, East Lansing.
- Vargas-Tonsing, T., & Bartholomew, J.B. (2006). An exploratory study of the effects of pre-game speeches on team-efficacy beliefs. *Journal of Applied Sport Psychology*, 36, 918-933.

Watson , C. B., & Chemers, M. M. (1998). *The rise of shared perceptions: A multilevel analysis of collective efficacy*. Paper presented at the Organizational Behavior Division for the Academy of Management Meeting, San Diego, CA.

Watson, D., Clark, L. A., & Tellegen, A. (1988). Development and validation of brief measures of positive and negative affect: The PANAS scales. *Journal of Personality and Social Psychology*, 54, 1063-1070.

Table 1

*Descriptive Statistics for Coaching Efficacy Scale and Sources of Coaching Efficacy**Scale*

	Cronbach's alpha	Mean	St. Dev.	N
Coaching Efficacy Scale	.923	106.03	8.79	173
Motivational Efficacy	.886			188
Technique Efficacy	.838			182
Character Building	.783			188
Game Strategy	.893			179
Enactive Mastery Experience	.687	51.22	5.70	158
Feltz				
Verbal Persuasion	.686	77.88	9.26	163
Vicarious Experience	.678	27.32	6.80	161
Perceived Stress Scale	.748	36.13	5.74	158
Positive and Negative Affect	.864	84.55	8.09	154

Table 2

Standardized Beta Coefficients for Predictors in Significant Models

	Standardized Beta Coefficient	Part Correlation
Motivation Efficacy Five Factor		
Enactive Mastery Experience	.024	.023
**Verbal Persuasion	.293	.271
Vicarious Experience	.109	.107
Perceived Stress	.083	.067
***Positive and Negative Affect	.369	.290
Motivation Efficacy Six Factor		
Enactive Mastery Experience	.102	.098
Enactive Mastery Experience 2	.033	.028
+Verbal Persuasion	.236	.216
Vicarious Experience	.063	.054
Perceived Stress	.178	.138
***Positive and Negative Affect	.575	.466
Game Strategy Efficacy Five Factor		
Enactive Mastery Experience	.136	.129
Verbal Persuasion	.113	.104
*Vicarious Experience	.182	.191
Perceived Stress	.145	.123
*Positive and Negative Affect	.272	.220
Technique Efficacy Five Factor		

Enactive Mastery Experience	.207	.197
Verbal Persuasion	-.066	-.061
*Vicarious Experience	.203	.200
Perceived Stress	.147	.120
**Positive and Negative Affect	.284	.225
Character Building Efficacy Five Factor		
Enactive Mastery Experience	.062	.058
Verbal Persuasion	.057	.053
Vicarious Experience	.076	.075
Perceived Stress	.019	.016
**Positive and Negative Affect	.294	.232
Total Coaching Efficacy Five Factor		
Enactive Mastery Experience	.131	.125
+Verbal Persuasion	.162	.150
*Vicarious Experience	.188	.185
+Perceived Stress	.186	.148
***Positive and Negative Affect	.454	.348
Total Coaching Efficacy Six Factor		
+Enactive Mastery Experience	.214	.205
Enactive Mastery Experience 2	.134	.112
Verbal Persuasion	.149	.137
Vicarious Experience	.028	.024
Perceived Stress	.133	.103

**Positive and Negative Affect

.513

.420

* $p < .05$

** $p < .01$

*** $p < .001$

+ $.05 < p < .10$

Table 3

*Standardized Beta Coefficients for Predictors in Significant Models for High School**Coaches*

	Standardized Beta Coefficient	Part Correlation
Motivation Efficacy Five Factor		
Enactive Mastery Experience	-.044	-.042
+Verbal Persuasion	.209	.194
+Vicarious Experience	.177	.171
Perceived Stress	.136	.110
***Positive and Negative Affect	.520	.405
Motivation Efficacy Six Factor		
Enactive Mastery Experience	.082	.080
Enactive Mastery Experience 2	-.101	-.087
Verbal Persuasion	.059	.053
Vicarious Experience	.103	.097
Perceived Stress	.138	.111
***Positive and Negative Affect	.832	.655
Total Coaching Efficacy Five Factor		
Enactive Mastery Experience	.014	.016
Verbal Persuasion	.187	.199
Vicarious Experience	.156	.174
Perceived Stress	.160	.152
***Positive and Negative Affect	.425	.364

Total Coaching Efficacy Six Factor

Enactive Mastery Experience	.206	.262
Enactive Mastery Experience 2	-.120	-.138
Verbal Persuasion	.077	.092
Vicarious Experience	.060	.076
Perceived Stress	.117	.126
**Positive and Negative Affect	.644	.564

* $p < .05$

** $p < .01$

*** $p < .001$

+ $.05 < p < .10$

Table 4

Standardized Beta Coefficients for Predictors in Significant Models for College Coaches

	Standardized Beta Coefficient	Part Correlation
Motivation Five Factor		
Enactive Mastery Experience	.028	.178
+Verbal Persuasion	.357	.436
+Vicarious Experience	.028	.030
Perceived Stress	.087	-.145
***Positive and Negative Affect	.279	.346
Game Strategy Efficacy Five Factor		
Enactive Mastery Experience	.043	.039
Verbal Persuasion	.095	.086
*Vicarious Experience	.323	.310
+Perceived Stress	.291	.223
*Positive and Negative Affect	.408	.300
Game Strategy Efficacy Six Factor		
*Enactive Mastery Experience	.427	.371
Enactive Mastery Experience 2	.537	.412
Verbal Persuasion	-.159	-.142
Vicarious Experience	-.271	-.196
Perceived Stress	.221	.145
**Positive and Negative Affect	.456	.271
Technique Efficacy Five Factor		

**Enactive Mastery Experience	.363	.335
Verbal Persuasion	-.246	-.225
Vicarious Experience	.170	.164
Perceived Stress	.179	.147
*Positive and Negative Affect	.329	.262
Character Building Efficacy Five Factor		
Enactive Mastery Experience	.079	.073
Verbal Persuasion	.098	.089
Vicarious Experience	.124	.120
Perceived Stress	.023	.019
**Positive and Negative Affect	.421	.336
Total Coaching Efficacy Five Factor		
Enactive Mastery Experience	.160	.146
Verbal Persuasion	.111	.100
+Vicarious Experience	.222	.214
Perceived Stress	.324	.248
***Positive and Negative Affect	.607	.447
Total Coaching Efficacy Six Factor		
+Enactive Mastery Experience	.356	.309
Enactive Mastery Experience 2	.530	.406
Verbal Persuasion	.062	.056
Vicarious Experience	-.169	-.122
Perceived Stress	.244	.161

**Positive and Negative Affect

.530

.266

* $p < .05$

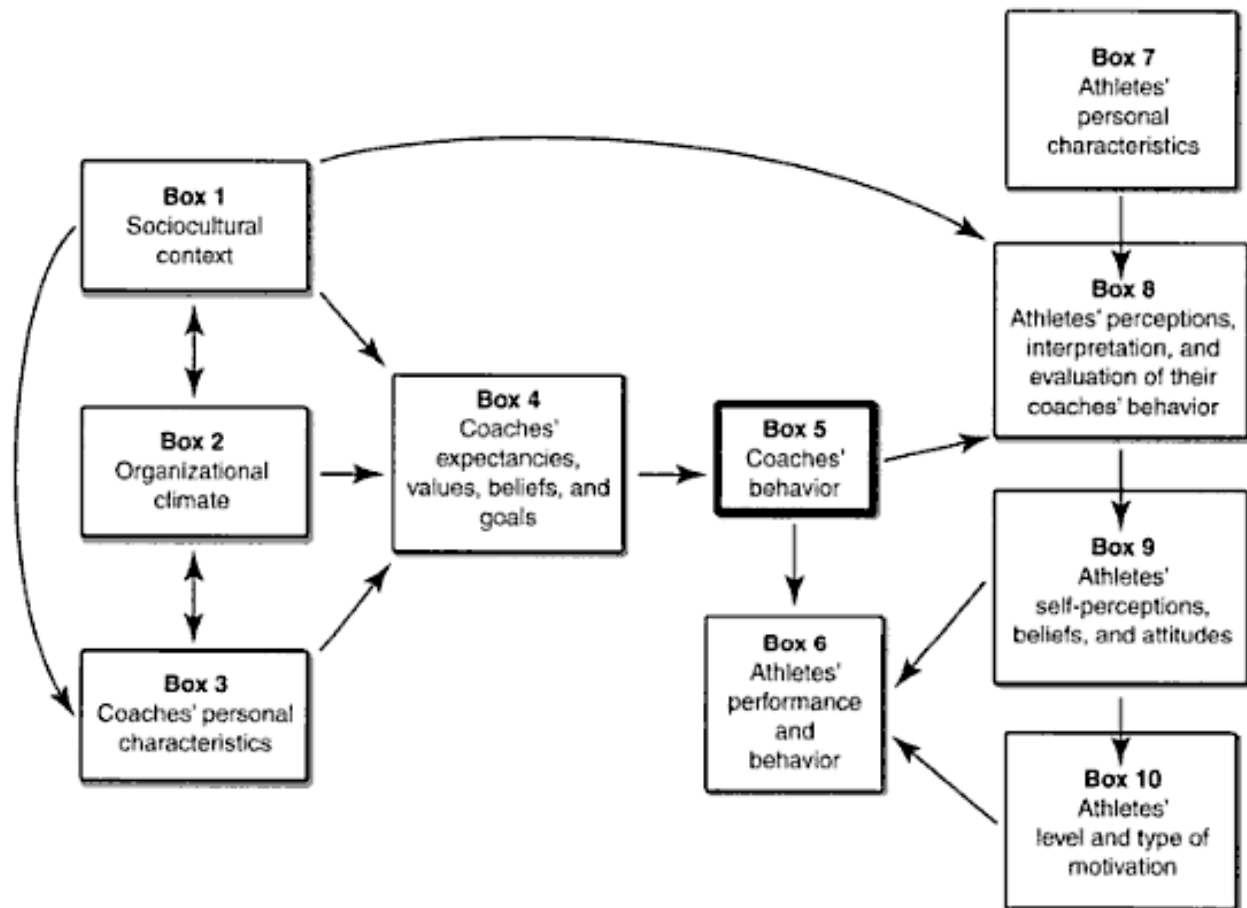
** $p < .01$

*** $p < .001$

+ $.05 < p < .10$

Figure 1

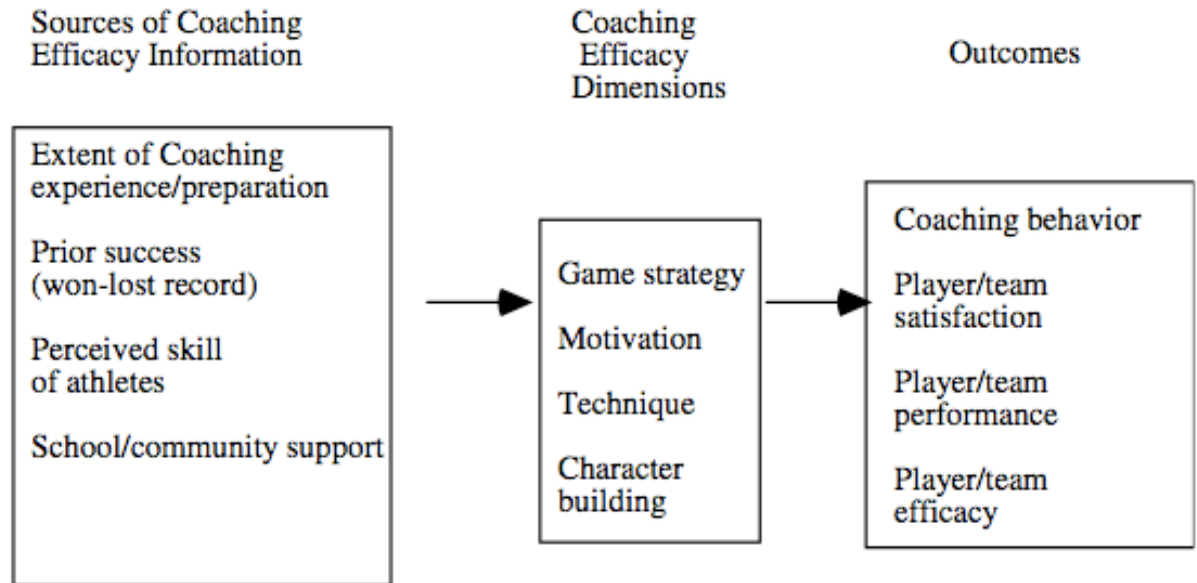
A Working Model of Coaching Effectiveness



Horn, T.S. (2008). Coaching effectiveness in the sport domain. In T.S. Horn (Ed.), *Advances in Sport Psychology* (3rd ed.), (p. 239-267). Champaign, IL: Human Kinetics.

Figure 2

Original Model of Coaching Efficacy



Feltz, D. L., Chase, M. A., Moritz, S. E. & Sullivan, P. J. (1999). A conceptual model of coaching efficacy: preliminary investigation and instrument development. *Journal of Educational Psychology*, 4, 765-776.

Appendix

Bandura Enactive Mastery Experience

To what extent does the following statement describe your coaching experience in terms of in game performance?

I had many early successes, but my performance has subsequently leveled off compared to my prior rate of improvement.

I have periodic failures, but I continue to improve steadily over time.

I have had repeated successes at relatively difficult tasks.

I can attribute my successes to aid from external assistance.

I can attribute my successes solely to my own abilities as a coach.

To what extent does the following statement describe your coaching experience in terms of your athletes improvement?

I had many early successes, but my performance has subsequently leveled off compared to my prior rate of improvement.

I have periodic failures, but I continue to improve steadily over time.

I have had repeated successes at relatively difficult tasks.

I can attribute my successes to aid from external assistance.

I can attribute my successes solely to my own abilities as a coach.

To what extent does the following statement describe your coaching experience in terms of your perceived improvement in coaching skills?

I had many early successes, but my performance has subsequently leveled off compared to my prior rate of improvement.

I have periodic failures, but I continue to improve steadily over time.

I have had repeated successes at relatively difficult tasks.

I can attribute my successes to aid from external assistance.

I can attribute my successes solely to my own abilities as a coach.

0 = Not at all to 4 = Completely

Feltz Enactive Mastery Experience

How much of the rule handbook have you read for the sport you are currently coaching?

0 = None to 4 = All

Do you understand all the rules for the sport you are currently coaching?

0 = Not at all to 4 = Completely

To what extent do you have a coaching philosophy for the team you are currently coaching?

0 = Not at all to 4 = Completely

How often do you prepare for each practice session with your current team?

0 = Never to 4 = Always

How often do you prepare for each game/meet with your current team?

0 = Never to 4 = Always

Have you ever received any formal award or recognition for your coaching?

0 = No, 1 = Yes

Has a team you have coached ever won a significant title or award (i.e. conference title, state championship, etc.)?

0 = No, 1 = Yes

How many wins did the team you coached last season have?

How many losses did the team you coached last season have?

What is your career win-loss record?

Verbal Persuasion

How supportive do you feel the following people are toward the team you currently coach?

Athletic director

Faculty

Student body

Your athletes

Surrounding community

Parents of your athletes

0 = Not at all supportive to 8 = Extremely supportive

To what extent do the following statements describe your previous experience?

In general, I have received a lot of praise for my coaching abilities

I have received a lot of praise for my coaching abilities from other coaches whom I trust and respect

I have personally received many criticisms concerning my coaching abilities

I have heard of, but not been the direct recipient of, negative comments made about my coaching abilities

A trusted and respected coach has criticized my coaching techniques and abilities

0 = Never to 8 = Frequently

Vicarious Experience

For the sport that you are currently coaching, how many clinics have you attended in the past year?

For the sport that you are currently coaching, how many clinics have you attended in the past five years?

To what extent do you take the drills and activities taught at coaching clinics and apply them to your current team?

0 = Never to 4 = Always

As a coach, have you ever tried to imitate a respected coach's coaching style?

0 = Never to 4 = Always

How much of your coaching style/actions was adapted from another coach or coaches?

0 = None to 4 = All

Do you notice coaching habits exhibited by other coaches when watching the sport you coach?

0 = Never to 4 = Always

Do you notice the coaching habits exhibited by other coaches while playing against them?

0 = Never to 4 = Always

How frequently do you play against a coach, perceive some coaching skill or behavior that he/she used effectively and used it yourself?

0 = Never to 4 = Always

Physiological and Affective State

Perceived Stress Scale – Coaches. Adapted: Cohen, S., Kamarck, T., & Mermelstein, R. (1983). A global measure of perceived stress. Journal of Health and Social Behavior, 24, 385-396.

Adaptations in italics

The questions in this scale ask you about your feelings and thoughts during the *most recent month* of your competitive coaching schedule. *Please focus your thoughts only on your feelings and thoughts while coaching, not while participating in other aspects of your daily living.* In each case you will be asked to indicate your response by placing a mark in the box representing how often you felt or thought a certain way.

Although some of the questions are similar, there are differences between them and you should treat each one as a separate question. The best approach is to answer fairly quickly. That is, don't try to count up the number of times you felt a particular way, but rather indicate the alternative that seems like a reasonable estimate.

In the last month, how often have you been upset because of something that happened unexpectedly?

In the last month, how often have you felt that you were unable to control the important things in your life?

In the last month, how often have you felt nervous and “stressed”?

In the last month, how often have you dealt successfully with day to day problems and annoyances?

In the last month, how often have you felt that you were effectively coping with important changes that were occurring in your life?

In the last month, how often have you felt confident in your ability to handle your personal problems?

In the last month, how often how often have you felt that things were going your way?

In the last month, how often have you found that you could not cope with all the things that you had to do?

In the last month, how often have you been able to control irritations in your life?

In the last month, how often have you felt that you were on top of things?

In the last month, how often have you been angered because of things that happened that were outside your control

In the last month, how often have you found yourself thinking about things that you have to accomplish?

In the last month, how often have you been able to control the way you spend your time?

In the last month, how often have you felt difficulties were piling up so high that you could not overcome them?

0 = Never to 4 = Very Often

Positive and Negative Affect Schedule – Coaches. Adapted: Watson, D., Clark, L. A., & Tellegen, A. (1988). Development and validation of brief measures of positive and negative affect: The PANAS scales. Journal of Personality and Social Psychology, 54, 1063-1070.

Adaptations in italics

This scale consists of a number of words that describe different feelings and emotions.

Read each item and then mark the appropriate answer in the space next to that word.

Indicate to what extent you generally feel this way *while you are involved in coaching*, that is, how you feel on average while coaching.

Interested

Distressed

Excited

Upset

Strong

Guilty

Scared

Hostile

Enthusiastic

Proud

Irritable

Alert

Ashamed

Inspired

Nervous

Determined

Attentive

Jittery

Active

Afraid

0 = Very slightly or not at all to 4 = Extremely