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An analysis of coaching efficacy in volunteer soccer coaches

Christopher Lee Kowalski

University of Northern Iowa

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AN ANALYSIS OF COACHING EFFICACY IN VOLUNTEER SOCCER COACHES

An Abstract of a Dissertation

Submitted

in Partial Fulfillment

of the Requirements for the Degree

Doctor of Education

Approved:

Dr. Christopher Edginton, Committee Chair

Dr. Sue Joseph,
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December, 2007
ABSTRACT

This purpose of this study was to analyze the relationship between five independent variables and volunteer soccer coaches' overall coaching efficacy as measured by motivation efficacy, character building efficacy, game strategy efficacy, and technique efficacy and five independent variables. The five independent variables explored included the age of a coach, a coach’s gender, previous years of coaching experience, participation in a coaching training/licensing/certification program, and previous playing experience.

The study involved 69 participants who coached for the Cedar Valley Youth Soccer Association (CVYSA). The first part of the instrument used to measure coaching efficacy was a questionnaire discussing the various sources of information that can affect a coach’s level of efficacy. The second part of the instrument used to measure coaching efficacy for the study was the Coaching Efficacy Scale, or CES.

Data collection occurred at the coaches’ meetings for each community in the CVYSA league. Data analyses provided significant results indicating a number of important points related to motivation efficacy, character building efficacy, game strategy efficacy, technique efficacy, and overall coaching efficacy. First, it was found that respondents who had attended a coaching training/licensing/certification session tend to be younger. Second, a respondent who had attended a coaching training/licensing/certification session usually had previous coaching experience. Third, the higher a respondent’s technique efficacy level the more likely he or she had experience playing soccer. Fourth, it was found that the mean score of male respondents
was significantly higher than the mean score of female respondents related to game strategy efficacy. Lastly, a combination of age, gender, previous coaching experience, previous playing experience, and attendance at a coaching training/licensing/certification session did not predict motivation efficacy, character building efficacy, game strategy efficacy, technique efficacy, or overall coaching efficacy.

The results of this study have continued to build the body of knowledge related to coaching efficacy. Further research on the topic of coaching efficacy should be conducted involving volunteer coaches of youth between the ages of 11-14.
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A Dissertation

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Doctor of Education

Approved:

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December, 2007
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CHAPTER I
INTRODUCTION

With nearly 40-50% of a young person’s time categorized as free and unobligated, multiple options are available for leisure and recreation (Caldwell & Baldwin, 2003). Youth sports have become a major outlet for young people during their leisure. While engaging in a variety of sports, youth are often able to experience a new activity, refine their skills or techniques, interact with their teammates, engage in competition, and have fun. Youth coaches serve not only as team leaders, but also often serve as role models and mentors. The coach’s leadership style and decision-making in the youth sports setting may have a lasting impact on a young person’s decision to continue participating in a sport as a player or coach.

Becoming a coach for a youth sports team is an important and challenging role. A coach is responsible for teaching and guiding a number of young people. In addition to the numerous techniques and skills associated with a sport is the opportunity for building character of each youth. Volunteering for a task such as a youth sports coach can be daunting if an individual has limited playing or coaching experience in that particular sport. An absence of various factors, such as how to teach technical skills and various methods of motivation, can be debilitating for coaches’ beliefs in their ability to guide their young athletes, subsequently affecting their leadership abilities of current and future athletes.

Understanding the beliefs coaches have in their ability to lead individual athletes, as well as teams, through seasonal competition continues to be a priority (Choi, Cho, &
The belief in one's personal ability is known as self-efficacy (Feltz, Chase, Moritz, & Sullivan, 1999). Whether it is coaching athletes competing in individual sports, such as figure skating, or team related sports, such as soccer, understanding self-efficacy is integral to success. If a coach has a low level of self-efficacy, that may have a detrimental effect on athletic success. Conversely, if the coach has high self-efficacy it may have a lasting influence on his or her performance, as well as the athletes' performance, during a competition.

Coaches may influence the self-efficacy of their athletes at both the individual and the team level. Research has shown that athletes who believed their coach was a confident leader were also more confident in themselves and their teams (Watson, Chemers, & Preiser, 2001). Coaches may directly enhance the team's efficacy level "through behaviors directed at facilitating the coordination and integration of team talents and resources" (Watson et al., 2001, p. 1066). Examples of coaching behaviors that can influence an athlete's sense of efficacy include verbal persuasion, modeling, and technical understanding of actions (Gist, 1987; Zaccaro, Blair, Peterson, & Zazanis, 1995).

Research on self-efficacy originated with Albert Bandura's work on social cognition and decision-making (1977, 1986). According to Bandura, self-efficacy is the judgment or assumption that a person makes related to his or her capabilities of accomplishment to a task (1986, 1997). This concept has been investigated and studied in teaching and also in various sports environments. Denham and Michael (1981) have defined self-efficacy in the classroom as the likelihood that a teacher can bring about
positive changes in a student, and an assessment of a teacher's ability to bring about such changes. Subsequent studies have viewed self-efficacy in the classroom setting and evaluated the impact of a teacher's confidence in his or her abilities to accomplish certain tasks (Ashton, 1985; Ashton & Webb, 1986; Guskey & Passaro, 1993; Hoy & Woolfolk, 1993; Ramey-Gassert, Shroyer, & Staver, 1996; Raudenbush, Rowan, & Cheong, 1992; Smylie, 1988). The findings of these studies indicated a number of factors that affected teacher self-efficacy: teacher-student interactions, role definition, activity structure, supportive administration, teacher morale, and preparation time for classes.

Multiple studies have occurred examining coaching self-efficacy in the sports environment (Feltz, 1988; Feltz et al., 1999; Feltz & Lirgg, 1998; Fung, 2002; Lee, Malete, & Feltz, 2002; Malete & Feltz, 2000; Marback et al., 2005; Short & Short, 2004; Vargas-Tensing, Warners, & Feltz, 2003). Coaching efficacy has been defined as the extent to which coaches believe they have the capacity to affect the learning and performance of their athletes (Feltz et al., 1999). Feltz et al. (1999) developed an instrument, the Coaching Efficacy Scale or CES, in order to examine self-efficacy in a competitive coaching environment. The researchers suggested that coaching efficacy is comprised of four dimensions: (a) motivation efficacy; (b) character building efficacy; (c) game strategy efficacy; and (d) technique efficacy (Feltz et al., 1999). Motivation efficacy is the belief that coaches have in their ability to influence the psychological skills and states of their athletes. Motivation efficacy includes influencing athletes to persevere through training, as well as enhancing team cohesion (Fung, 2002; Lee et al., 2002; Malete & Feltz, 2000). Character building efficacy is the belief coaches have in
their ability to influence the personal development and attitude of their athletes. Character building includes the development of a positive attitude towards sport and sportsmanship by the athletes (Feltz et al., 1999; Fung, 2002; Sullivan & Kent, 2003). Game strategy efficacy is the belief coaches have in their ability to coach during competition and lead their athletes to successful performances (Feltz et al., 1999; Fung, 2002; Sullivan & Kent, 2003). Game strategy efficacy includes preparation and planning for the game, interpreting the opposition, and developing the most effective methods to compete against the opposition and perform well. Technique efficacy is the belief coaches have in their instructional and diagnostic skills (Feltz et al., 1999). Coaching that involves instructional and diagnostic skills includes body positioning and movement, speed of play, and direction of play.

Using Feltz et al.’s (1999) work on coaching efficacy as the theoretical underpinning for this study, the purpose of this research project was to extend the model of coaching efficacy to include coaches working with youth between the ages of 11-14 on a voluntary basis. The coaching population targeted in this study is not the individuals who are paid to coach, but for whom the decision to coach is voluntary. To date, few studies have used volunteer coaches as participants in understanding coaching efficacy, and no studies have examined paid or volunteer coaches who worked with youth between the ages of 11-14; herein lies the originality of this study (Fung, 2002; Lee et al., 2002; Malete & Feltz, 2000; Sullivan & Kent, 2003). Most of the previous research related to coaching efficacy has focused on high school and collegiate coaches who were paid to coach (Kent & Sullivan, 2003; Sullivan & Kent, 2003).
Furthermore, there are no existing research studies which analyze the relationship of these volunteer coaches' overall coaching efficacy as measured by the interaction among motivation efficacy, character building efficacy, technique efficacy and game strategy. Additionally, there is little known regarding the overall level of coaching efficacy and the influence of age, education/training/licensing, previous experience as a soccer player, gender, and previous coaching experience. The research generated from this study will impact the body of knowledge related to self-efficacy, as well as volunteerism associated with youth work in the sports environment.

Statement of the Problem

The purpose of this study was to analyze the relationship between five independent variables and volunteer soccer coaches' overall coaching efficacy as measured by motivation efficacy, character building efficacy, game strategy efficacy, and technique efficacy and five independent variables. The five independent variables explored included the age of a coach, a coach's gender, previous years of coaching experience, participation in a coaching education/training/licensing program, and previous playing experience. First, the levels of motivation efficacy, character building efficacy, technique efficacy, and game strategy efficacy were calculated. Once those levels were identified, then the overall coaching efficacy level was calculated. The dependent variables in this study were the levels of motivation efficacy, character building efficacy, technique efficacy, game strategy efficacy, and the overall coaching efficacy level.

Five subproblems were explored in this study. They were:
1. The relationship between an individual’s Motivation Efficacy level and age, education/training/licensing, experience as a soccer player, gender, and previous coaching experience.

2. The relationship between an individual’s Character Building Efficacy level and age, education/training/licensing, experience as a soccer player, gender, and previous coaching experience.

3. The relationship between an individual’s Game Strategy Efficacy level and age, education/training/licensing, experience as a soccer player, gender, and previous coaching experience.

4. The relationship between an individual’s Technique Efficacy level and age, education/training/licensing, experience as a soccer player, gender, and previous coaching experience.

5. The relationship between an individual’s overall coaching efficacy level and age, education/training/licensing, experience as a soccer player, gender, and previous coaching experience.

**Hypotheses**

The following hypotheses were stated in null form to enable statistical testing and analysis. The hypotheses were:

1. There was no relationship between an individual’s Motivation Efficacy level and his or her age, education/training/licensing, experience as a soccer player, gender, and previous coaching experience.
2. There was no relationship between an individual's Character Building Efficacy level and his or her age, education/training/licensing, experience as a soccer player, gender, and previous coaching experience.

3. There was no relationship between an individual's Game Strategy Efficacy level and his or her age, education/training/licensing, experience as a soccer player, gender, and previous coaching experience.

4. There was no relationship between an individual's Technique Efficacy level and his or her age, education/training/licensing, experience as a soccer player, gender, and previous coaching experience.

5. There was no relationship between an individual's overall coaching efficacy level and his or her age, education/training/licensing, experience as a soccer player, gender, and previous coaching experience.

Significance of Coaching Efficacy Studies

At various levels of coaching, administrators, parents, and athletes may overlook coaches' beliefs in their own coaching abilities. It is often assumed that once a coach achieves a certain level in the coaching profession, that he or she is an expert (Kenow & Williams, 1999). The gradual elevation up the coaching ranks and perceived expertise is a result of the decisions coaches make on a daily basis related to their teams. Research on coaching efficacy can continue to provide insight for the decisions made by coaches related to their commitment (Kent & Sullivan, 2003), leadership style (Fung, 2002; Sullivan & Kent, 2003), ethical issues (Chung & Gfroerer, 2003), and skill and technique development (Williams & Reilly, 2000).
Research on coaching efficacy may also inform us of the subsequent reactions by the athletes to their coaches (DiMarco, Ohlson, Reece, & Solomon, 1998). Information gathered and applied to coaching efficacy enables us to learn about the relationship between coaches, athletes, and accomplishment of goals in a sports setting. The work done with high school and collegiate coaches and athletes has been invaluable in understanding the influence coaches have on athletes, as well as athletes' perceptions of their coaches' abilities.

In summarizing the significance of this study, the research completed provides insight into coaching efficacy, particularly with regard to four factors. First, few previous coaching efficacy studies have addressed specifically the volunteer coaching population. Second, no coaching efficacy studies have linked volunteer coaches with the age group included in the research. Third, few coaching efficacy studies have studied the sport of youth soccer. Last, there are no research studies that have combined the three variables of volunteer coaches, youth ages 11-14, and soccer in determining overall coaching efficacy. Thus, the study adds to and contributes to the body of knowledge regarding coaching efficacy, as well as volunteerism in youth sports. Further, the study serves to provide a foundation for future research to be undertaken with the volunteer coaching population.

Limitations

There are a number of limitations that were identified in this study. They were as follows:
1. A methodological issue that can weaken the interpretation of coaching efficacy beliefs is too great a time span between efficacy judgments and the performance of the coach (Feltz & Chase, 1998). If the time frame is too great between the judgments and the performance, an intervening experience can alter the judgments (Bandura, 1986). The coaches surveyed did not have equal amounts of time between their most recent coaching experience and their participation in the study.

2. A second limitation was that the sample of coaches was drawn from the coaching population of the Cedar Valley (Northeast Iowa). While there are a number of communities in the Cedar Valley, the coaches in this study may not be representative of the overall coaching population.

3. A third limitation was that in previous studies, athletes' perceptions of a coach's ability have proven to be invaluable when researching coaching efficacy. Surveying coaches alone may limit the amount of data that can be analyzed in understanding coaching efficacy. A researcher may want to question the athletes, but in this study, due to the complexity of the survey process, such as the language used, the athletes may not be able to understand fully the topic related to the researcher's questions.

4. A fourth limitation was the subjective perspective of respondents to various items included in the questionnaire. For example, respondents may have different interpretations of what a coaching education/licensing/training session may consist of, which in turn may have impacted their responses.
Delimitations

The following delimitations were identified in this study. They were as follows:

1. Subjects were volunteer coaches of youth soccer teams from the Cedar Valley Youth Soccer Association.

2. The researchers administered Feltz et al.'s (1999) Coaching Efficacy Scale, or CES, to the volunteer coaches to measure efficacy.

3. The researchers administered the Coaching Efficacy Scale to all the volunteer coaches.

4. The volunteer coaches completed the Coaching Efficacy Scale prior to the start of the competitive soccer season.

Definition of Terms

The following terms have been defined to render in clarifying concepts and maintaining continuity throughout the study.

Coaching efficacy. “The extent to which coaches believe they have the capacity to affect the learning and performance of their athletes. Performance in this sense is also meant to include the psychological, attitudinal, and teamwork skills of athletes” (Feltz et al., 1999, p. 766). Coaching efficacy encompasses four components: motivation, character building, technique, and game strategy.

Coaching Efficacy Scale (CES). A scale developed by Feltz et al. (1999) presenting a series of questions aimed at interpreting a coach’s response regarding motivation, character building, technique, and game strategy efficacy. These four components comprise coaching efficacy.
Motivation efficacy. The belief that coaches have in their ability to influence the psychological skills and states of their athletes (Feltz et al., 1999). Motivation includes influencing athletes to persevere through training, as well as enhancing team cohesion (Fung, 2002; Lee et al., 2002; Malete & Feltz, 2000).

Character building efficacy. The belief coaches have in their ability to influence the personal development and attitude of their athletes. Character building includes the development of a positive attitude towards sport and sportsmanship by the athletes (Feltz et al., 1999; Fung, 2002; Sullivan & Kent, 2003).

Technique efficacy. The belief coaches have in their instructional and diagnostic skills (Feltz et al., 1999). Coaching that involves instructional and diagnostic skills includes body positioning and movement, speed of play, and direction of play.

Game strategy efficacy. The belief coaches have in their ability to coach during competition and lead their athletes to successful performances (Feltz et al., 1999; Fung, 2002; Sullivan & Kent, 2003). Game strategy includes preparation and planning for the game, interpreting the opposition, and developing the most effective methods to compete against the opposition and perform well.

Coaching Education/Training/Licensing. A class, clinic, or session that has been set up formally for a person to attend to enhance his or her knowledge of the coaching process. Components of a formalized education/training/licensing session may include set times, fees, location, resource requirements, attendance, and documented completion through a certificate or audit form. Examples of education/training/licensing organizations include the Iowa High School Coaching Association, American Youth
Previous Playing Experience. This factor includes a person’s involvement with a team of players that competes in a structured league against other teams. This team is organized by a formal association and has scheduled practices, games, uniforms, one or more coaches, and a season schedule.

Volunteer. A person who chooses to do something without any external compensation. A volunteer would be someone who freely decides to engage in an activity.
CHAPTER 2
REVIEW OF LITERATURE

The purpose of this study was to analyze the relationship between five independent variables and volunteer soccer coaches' overall coaching efficacy as measured by motivation efficacy, character building efficacy, game strategy efficacy, and technique efficacy and five independent variables. The five independent variables explored included the age of a coach, a coach's gender, previous years of coaching experience, participation in a coaching education/training/licensing program, and previous playing experience. First, the levels of motivation efficacy, character building efficacy, technique efficacy, and game strategy efficacy were calculated. Once those levels were identified, then the overall coaching efficacy level was calculated. The dependent variables in this study were the levels of motivation efficacy, character building efficacy, technique efficacy, game strategy efficacy, and the overall coaching efficacy level. Also of importance in the literature review is the need to gain an understanding of the practical implications of the research. Coupling the practical side of the research conducted with the guidance given to coaches may help in understanding the influence on their personal beliefs related to coaching soccer.

This chapter will review the origin and subsequent growth of coaching efficacy, inclusive of its psychological roots. The first section of the literature review will address the overarching theory from which coaching efficacy is drawn, social cognitive theory. This section of the literature review will also detail self-efficacy, or the belief in one's abilities to accomplish a certain course of action. A discussion of teaching efficacy will
follow in the second section of the literature review, inclusive of Denham and Michael's (1981) model outlining the components of this concept. The final section of the literature review will begin with a definition of coaching confidence, which will be followed by a description of coaching efficacy and various studies in recent years related to it. Included in the coaching efficacy section will be a presentation of the Coaching Efficacy Scale, used to measure this concept (Feltz et al., 1999).

More specifically, to assist the reader in conceptualizing and visualizing the organization of this study to determine if there are differences in coaching efficacy based on the combination of various variables, the author has organized the salient elements of the literature review into a table format. As presented in Table 1, the literature review has been organized to provide a foundational framework moving from broader general concepts to more specific research studies focused on the topic: Section I- (a) social cognitive theory; Section II- (b) teaching efficacy; (c) teachers' behaviors; (d) student outcomes; Section III- (e) coaching confidence; (f) gender and coaching efficacy; (g) training, licensing certifications and coaching efficacy; (h) coaching experience and coaching efficacy; (i) win/loss record and coaching efficacy; (j) commitment to coaching and coaching efficacy; and (k) player/team efficacy. The literature review yielded 23 discrete references focused on the broad topic of coaching efficacy and the more specific elements considered in this study.
Table 1. *Research studies organized by topic*

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| Section II- Research on Teaching Efficacy          | Teaching Efficacy                                           |
|                                                    | Teacher Behaviors                                          |
|                                                    | Student Outcomes                                           |

| Section III- Research on Coaching Efficacy         | Coaching Confidence                                        |
|                                                    | Barber, 1998; Kenow & Williams, 1999; Marback, Short, Short, & Sullivan, 2005; Nicholls, 1984; Pastore, 1991; Weiss & Sisley, 1984 |
|                                                    | Coaching Efficacy                                          |
|                                                    | DeMarco & McCullick, 1997; Feltz, 1988; Feltz, Chase, Moritz, & Sullivan, 1999 |
|                                                    | Gender & Coaching Efficacy                                |
|                                                    | Everhart & Chelladurai, 1998; Lirgg, Dibrezzo, & Smith, 1994; Marback, Short, Short, & Sullivan, 2005 |
|                                                    | Education/Licensing/Training & Coaching Efficacy           |
|                                                    | Allen, 1999; Chung & Gfroerer, 2003; Fung, 2002; Lee, Malete, & Feltz, 2002; Malete & Feltz, 2000; Marback, Short, Short, & Sullivan, 2005 |
|                                                    | Coaching Experience & Coaching Efficacy                    |
|                                                    | Feltz, Chase, Moritz, & Sullivan, 1999; Fung, 2002; Marback, Short, Short, & Sullivan, 2005 |
|                                                    | Win/Loss Record & Coaching Efficacy                        |
|                                                    | Feltz, Chase, Moritz, & Sullivan, 1999; Feltz & Lirgg, 1998; Marback, Short, Short, & Sullivan, 2005 |
|                                                    | Commitment to Coaching & Coaching Efficacy                 |
|                                                    | Baruch, 1998; Kent & Sullivan, 2003 |
|                                                    | Player/Team Efficacy & Coaching Efficacy                   |
Social Cognitive Theory

This section of the literature review will initially discuss the foundational theory of coaching efficacy, social cognitive theory. Following the definition of social cognitive theory, there will be an explanation of the various capabilities, or ways of understanding by an individual, associated with social cognitive theory. Self-efficacy and the rationale for variance in individuals will follow. The next section will highlight the various sources of information which influence a person’s self-efficacy. Finally, the development and evolution of a person’s self-efficacy will be outlined, from infancy to late adulthood.

Social Cognitive Theory

Social cognitive theory is a broad-based explanation of human motivations, behaviors, and attitudes within various contexts and environments (Bandura, 1977). This theory is based upon the belief that individuals are not passive actors responding to the world, but rather are active in shaping their surrounding environment (Maddux, 1995). Human functioning is a result of the interaction between behavioral factors, cognitive and personal factors, as well as environmental factors (Bandura, 1986). How individuals formulate action is defined, through social cognitive theory, by a number of capabilities, or ways of understanding (Bandura, 1986; Maddux, 1995). Some of these are symbolizing capability, forethought capability, vicarious capability, self-regulatory capability, and self-reflective capability. Following is a discussion of each of these terms.
Capabilities Associated with Social Cognitive Theory

Symbolizing capability is the process of an individual using symbols as a part of the pathway to thought and subsequent action (Bandura, 1986; Maddux, 1995). People internalize symbols related to experiences, and employ those symbols as a model when making future decisions. Such plans allow for hypothetical testing of courses of action and the prediction of resulting outcomes.

Forethought capability involves individuals anticipating consequences of their actions. Through the anticipated consequences, individuals are able to establish goals or benchmarks for achievement, and plot a potential course of action by reflecting (Bandura, 1977). Forethought capability reduces the impact of immediate influences on an individual’s actions, and aids in the maintenance of a preconceived plan of action. Most importantly, the capacity for forethought is predicated on one’s ability to symbolize.

Vicarious capability allows individuals to benefit in their actions by observing others. Observation of other’s actions provides insight of what are permissible behaviors without having the individual continuously learn through trial and error. Some of the most important human functions require modeling from which the individual may learn by observation (Bandura, 1977; Maddux, 1995). If a first-year coach is able to watch and shadow an experienced coach, an understanding may develop of what is appropriate coaching behavior to engage in with the athletes (Choi et al., 2005).

Self-regulatory capability refers to the standards that individuals set for their own behaviors. A person does not behave solely to satisfy others; there may be a component of approval from others involved, but personal behavior is primarily guided by internal
standards. If the behavior is questionable or not to the level that the individual desires, then internal standards may "kick in" and influence subsequent behaviors (Bandura, 1977; Maddux, 1995).

Self-reflective capability enables individuals to analyze or look back on their experiences and gain self knowledge about their environmental surroundings. In daily interactions, individuals often act on their thoughts, later reflect on the result of their actions, and in turn make an effort, if needed, to adjust their future actions. The important point of the concept of self-reflective capability is that a person's actions are often a result of an idea or thought from a previous action; this idea or thought may serve as a motivator for subsequent actions, depending on the situation (Bandura, 1977; Maddux, 1995).

The capabilities mentioned above are associated with social cognitive theory and lay the groundwork for self-efficacy. Self-efficacy influences what individuals can or may do, how much of an effort they will invest, how long they will persevere in the face of adversity, and how they approach what is to be accomplished (Bandura, 1986).

**Self-Efficacy**

Self-efficacy was introduced by Albert Bandura in the late 1970's as a component of social cognitive theory (1977, 1986, 1997; Maddux, 1995). Self-efficacy involves the organization of cognitive, social, and behavioral skills in order to execute a course of action required for a specific performance (Bandura, 1986, 1997; Maddux, 1995). The concept is not concerned with the result of one's actions; rather self-efficacy is concerned with the belief a person has within his or her ability to execute a course of action, as well
as an understanding of how that course of action may impact daily life (Bandura, 1977, 1989, 1990). A self-efficacy expectation is “the conviction that one can successfully execute the behavior required to produce the outcome” (Bandura, 1977, p. 193). A self-efficacy expectation is different from an outcome expectation; an individual may believe that certain actions will result in particular outcomes (outcome expectation), but he or she will need to believe in his or her ability to accomplish the actions (self-efficacy expectations) in order for the particular outcome to occur (Bandura, 1977; Maddux, 1995). Efficacy expectations largely determine outcome expectations; they are a major determinant when an individual chooses to participate in an activity, how much effort will be expended, and the length of participation (Bandura, 1977; Maddux, 1995). Figure 1 diagrams the difference between self-efficacy expectations and outcome expectations.

Self-efficacy expectations vary along three different dimensions—magnitude, generality, and strength (Bandura, 1977, 1986; Lent & Hackett, 1987; Maddux, 1995). These three dimensions will impact each individual’s level of self-efficacy differently. Activities or behaviors that differ in magnitude are ordered by difficulty levels; certain individuals may be limited to simpler tasks, while others may engage in the most
challenging activities. The magnitude of self-efficacy addresses the “steps” related to the difficulty level of the activities or behaviors, and whether a person believes he or she can achieve each “step”.

The *generality* of the activity or behavior refers to whether the expectations are situation specific, or are viewed across activity or behavior boundaries and into daily interactions. Some activities or behaviors are specific, whereas others may be generalizable beyond the actual activity or behavior performed. Athletic coaches are also teachers; they provide instruction, guide the practice of skills, and give feedback to athletes (Feltz et al., 1999). Coaches who are concerned with their athletes take on multiple roles—teacher, motivator, strategist, parent and organizer.

The *strength* of the efficacy expectations is related to an individual’s will to persevere through obstacles or barriers to achieve mastery. Weak expectations will be extinguished at the first sign of an obstacle; strong expectations will drive the individual through obstacles and barriers. If a coach is attempting to learn a new skill in order to guide athletes, there may be difficulty in mastering the skill. Factors such as fatigue, outside instruction, and self-consciousness may impact the performance. Strength of the efficacy expectation is associated with whether the coach can work through fatigue, not become self-conscious, and learn the skill in order to demonstrate it for the athletes he or she coaches (Feltz et al., 1999).

Self-efficacy is grounded in the individual’s belief of personally mastering an individual behavior or group of behaviors (Bandura, 1977, 1986, 1997). If an individual feels strongly about his or her ability to engage in a certain behavior, this will influence
the initiation of that behavior and subsequent persistence to master that behavior, even in
the face of adversity or occasional failure (Bandura, 1977). This belief can affect the
behavioral settings and activities chosen; individuals who do not have a high level of
efficacy may avoid difficult situations that exceed their ability to cope with adversity.
Coaches with low levels of self-efficacy will avoid more challenging and complex
situations because they do not feel they can succeed.

Self-efficacy can also influence how much effort and time an individual will
expend in the face of difficult situations. A person with a low level of self-efficacy may
decide to stop a certain behavior or activity at the first sign of adversity. Conversely,
those individuals who persist through difficult situations and activities reinforce and build
their sense of self-efficacy.

Sources of Information Impacting Self-Efficacy

There are a variety of sources of information that influence a person’s sense of
self-efficacy (Bandura, 1977, 1986, 1997; Maddux, 1995; Schunk, 1989; Williams,
1995). Any influence, depending on its form, may draw on one or more of sources of
efficacy information (Bandura, 1986). Some of these sources of information include
enactive attainments or performance accomplishments, vicarious experiences, verbal
persuasion, and/or one’s physiological state or emotional arousal.

Enactive attainments or performance accomplishments are representative of the
actual experiences of a person, and are focused on mastering certain behaviors (Bandura,
1977, 1986, 1997; Maddux, 1995; Schunk, 1989; Williams, 1995). These attainments or
accomplishments are considered the strongest source for self-efficacy. As a person’s
level of self-efficacy is impacted by the results of performances, the effects of failure do not carry as much weight in the judgment of what is capable of being done. Failure is often attributed to factors outside of the individual such as facilities, supplies, and even other people. These attributions are due to a person believing he or she is “on the road” to mastering the behavior.

Vicarious experiences influence self-efficacy assessments (Bandura, 1977, 1986, 1997; Maddux, 1995; Schunk, 1989; Williams, 1995). Observation of others’ performance may alter an individual’s perception of his or her belief in the ability to accomplish a certain task. Visualizing others in a similar situation may trigger the person’s belief “that if he or she can do the activity, so can I”. This perception can increase a person’s self-efficacy level especially when the individual possesses the same capabilities as the person he or she is observing. Conversely, if an individual witnesses someone in a similar situation who is not performing well, it may in turn negatively influence his or her self-efficacy level when related to the same situation.

Verbal persuasion is used to often try to talk people into believing they have the capability to engage in a certain behavior or action (Bandura, 1977, 1986, 1997; Maddux, 1995; Schunk, 1989; Williams, 1995). This form of persuasion is often coupled with other sources of information to influence self-efficacy. Verbal persuasion is most effective when people believe they do have the capability to accomplish a task. Further, such persuasion can be detrimental if the person is verbally encouraged to engage in an activity or behavior that is perceived to be unrealistic. This may negatively impact one’s level of self-efficacy.
The physiological state or emotional arousal of individuals can impact their level of self-efficacy (Bandura, 1977; Maddux, 1995; Schunk, 1989; Williams, 1995). Fatigue, aches, pains, fear and anxiety can lead individuals to believe that they can not perform a certain activity or behavior. Individuals who can maintain steady levels of arousal have higher levels of self-efficacy and steadier performances in their activities or behaviors (Bandura & Adams, 1977; Barrios, 1983). Incorporation of these four sources of information impact the individual’s self-efficacy, which in turn influences behavior.

Self-efficacy influences behavior through four interrelated processes, including (a) goal-setting and persistence; (b) cognitive processing; (c) affective understanding; and (d) selection of environments and activities (Bandura, 1986, 1989, 1990, 1997). These processes assist in organizing various sources of efficacy information in a manner that is specific to each individual. The resulting actions are representative of how much the person believes he or she can accomplish a task. Goal-setting and persistence refer to the amount of time and effort spent in the face of adversity or failure during activities (Bandura, 1986; Locke & Latham, 1990; Maddux, 1995; Schunk, 1989). Individuals who have low levels of self-efficacy will not persevere and often develop doubts about their abilities. Such individuals do not set high expectations or goals for themselves, often due to the lack of belief in their own ability. Conversely, the higher the level of self-efficacy, the more persistent an individual will act and in turn will seek higher goals. Achievement of goals results in success and in turn setting more challenging goals; adversity or failure may cause cessation of the behavior or activity, or a reduction in the person’s goals. A person’s beliefs in his or her ability to accomplish a certain goal as
well as how long it will take him or her to accomplish the goal directly influences self-efficacy.

Cognitive processing of self-efficacy information is inherent in understanding self-efficacy (Bandura, 1977, 1986; Maddux, 1995). Whether it is somatic, vicarious, or enactive, the information and its relationship to the level of self-efficacy does not become direct until the individual weighs and integrates the information into his or her self-efficacy judgments. For example, the impact that vicarious experience holds on a person’s level of self-efficacy may not be as meaningful as to how he or she is physically and emotionally feeling when engaging in an activity or behavior. The weighing and integration of information is specific to each person, therefore, it is difficult to identify one prevailing “system” of information processing that influences self-efficacy. If an individual believes that he or she has strong negotiation skills when incorporating various sources of information influencing self-efficacy, their decision to engage or not in an activity or behavior will be efficient and effective. For example, a teacher’s expectation of a similar performance in the future after experiencing success in the classroom may lead to the teacher’s belief that he or she can have a positive effect on students (Denham & Michael, 1981).

Affective, or emotional, behavior is influenced by self-efficacy beliefs in several ways. First, self-efficacy influences the type of emotional behavior as well as the intensity exhibited by an individual (Maddux, 1995). Weak levels of self-efficacy during challenging activities may result in anxiety as part of a behavioral response. Further, weak levels of self-efficacy in achieving goals may result in depression as a behavioral
response (Bandura, 1977; Maddux & Lewis, 1995; Williams, 1995). Second, one's self-efficacy for processing emotional responses during activities or tasks can influence the actual emotional response. If the person has a low level of self-efficacy related to controlling his or her emotions during challenging activities, the actual emotional response may be the one he or she is trying to avoid (Kent & Gibbons, 1987; Wegner, 1989). For example, if a person believes he cannot control his anger when needed, his emotional response to this belief regarding an uncontrollable action may be anger itself, which is what the individual is trying to avoid.

Self-efficacy beliefs can influence the environment or setting in which individuals choose to engage in behaviors (Bandura, 1989). People choose certain settings, believing they have the skills or abilities to achieve success. Successes continue to influence people's beliefs in their abilities. Unfortunately, if a person has a low level of self-efficacy, he or she may avoid situations or settings within which good performance is expected, even if he or she has the skills needed to succeed. The result is a deprivation of potential successes, which may in turn lower the level of one's self-efficacy (Maddux, 1995).

Developmental Timeline of Self-Efficacy

A person's self-efficacy development begins at infancy, and continues to evolve and change throughout one's life. Self-efficacy is first negotiated within the realm of family life (Bandura, 1986). As infants, "the development of sensory-motor capabilities greatly expands the environment and the means for acting upon it" (Bandura, 1986, p. 415). While infants are playing, they learn basic motor skills, which provide enhanced
opportunities for additional development. Such opportunities are available as a result mainly of the parents’ care for the child. Toys and other objects, as well as an area to play, provide opportunities for infants to test their physical capabilities, social competencies, linguistic skills, and their understanding of daily situations. As the infant matures into a young child, both the experiences and the outcomes are the foundation for one’s belief in the ability to accomplish certain behaviors.

Language provides children an avenue to reflect on experiences, and learn what they can and cannot do (Bandura, 1977). Talking with adults, peers, and understanding symbols provide insight into what is and is not permissible in life. As young children, efficacy experiences begin to expand and extend from the child’s home to other arenas, and begin to include more individuals than just one’s parents or caregivers.

Siblings and peers begin to influence the efficacy level of the child as he or she gets older (Bandura, 1977, 1986). As the child’s world gets larger, these relationships that are built impact the sources of information related to self-efficacy. Peers may be models in understanding behavior and social interaction can provide insight for greater reflection, serving as points of reference for comparison of abilities (vicarious experience). The people children choose to associate with can also affect their level of self-efficacy, and in turn self-efficacy can influence whom children associate with in daily life. For example, if a child befriends an individual who constantly succeeds in sports events, the child may feel that he or she has the same abilities or skills as the friend. As a result, one’s level of self-efficacy may rise due to the observation that “I can do that because I can play too” (Wheeler & Ladd, 1982, p. 803). Subsequent
relationships may be developed with peers who engage in the same activities as the child, and those who have the same abilities as the child. Low levels of self-efficacy can also impede or hinder peer relationships. For example, if a child does not feel that he or she can do the same activities as other children due to perceived ability level, personal relationships with peers may be altered. The child may feel that no one will want to be his or her friend since he or she can’t do what everyone else is doing (Wheeler & Ladd, 1982).

Starting in kindergarten, school becomes a primary vehicle related to the development of self-efficacy (Bandura, 1986, 1997). School is a place where children develop cognitive appraisal and problem-solving skills, as well as acquire necessary knowledge to function successfully within society. As a child’s world begins to expand, enveloping more symbols and experiences, these in turn provide information with the potential to impact self-efficacy. The school is a “laboratory” for testing and experimenting with a myriad of interaction styles; children have the opportunity to try out roles, communicate in various ways, and observe others. As these interactions occur on a daily basis, children are mentally digesting such information and integrating it into their subsequent actions; this is the foundation for subsequent decisions that impact self-efficacy in later life.

Adolescence is the window during which children begin to realize there is an “adult world” and present behaviors which may need to be adjusted to function within that context. As a child enters into adolescence, there is a transition period. Questions regarding the role an adolescent plays in society and where he or she fits may arise
(Erikson, 1968). Such questions and how they are addressed and answered can influence self-efficacy. How easily the adolescent transitions to adulthood is undoubtedly linked to how strong the belief is in his or her capabilities for doing so. This is largely understood through mastering certain behaviors.

During adulthood, mastering tasks becomes more integral to daily life, including establishing a professional career and starting a family (Hackett & Betz, 1995). Physical abilities may start to diminish, and if an individual has a career or livelihood that is entrenched in physical activities, such as athletics, there may be a need to redirect and change one’s lifestyle (McPherson, 1980). Many individuals begin to assess their status within their profession and community and may change vocations or become active in different, more generative ways. The recognition of one’s place in life is evident by the way one restructures activities. Instead of being the participant in an activity (which may have occurred at a younger age), often individuals may lead or coach participants who are younger.

As indicated earlier, adulthood is marked by significant benchmarks, one being the development of a professional career. Self-perceptions of one's ability are major factors in predicting a career choice for adults (Hackett & Betz, 1995). Past performance accomplishments are strongly related to one’s career and self-efficacy expectations. Those beliefs are strongly influential in the choice of career (Hackett & Lent, 1992). Studies related to career self-efficacy have indicated mixed results regarding the other sources of self-efficacy information (Lent & Hackett, 1987; Lent, Lopez, & Bieschke,
With advancing age, the major sources of efficacy information provide older adults with some of the ingredients needed to reappraise their personal efficacy (Bandura, 1986). If the information received includes detrimental or negative expectations of older adults, this can impact the individual's sense of efficacy. With older adults, a declining sense of self-efficacy is liable to set in motion debilitating habits related to activities and behaviors. These habits may sabotage one's cognitive and behavioral functioning.

Teaching Efficacy

This section of the literature review will discuss the development of research studies related to teaching efficacy, or a teacher's sense of self-efficacy. First, there will be a discussion of the foundational research study in teaching efficacy conducted by Denham and Michael (1981). Next, an explanation of teacher behaviors and their relationship to a teacher's level of self-efficacy will follow. Following, there will be a review of student outcomes in the classroom and the influence on teacher efficacy. This section will conclude with a discussion of the variables in the school setting which can positively or negatively impact a teacher's level of self-efficacy.

Denham & Michael's Foundational Research

Teaching efficacy studies are traditionally grounded in the work of Denham and Michael (1981). According to Denham and Michael, teaching efficacy has two components: a cognitive component and an affective component (1981). The cognitive aspect deals with (1) the sense of likelihood that a teacher can bring about positive
changes in a student, and (2) an ongoing assessment of the teacher's own ability to bring about such changes. The affective or emotional component of teaching efficacy involves the pride or shame associated with bringing or not bringing about the aforementioned changes in a student. Denham and Michael’s model (1981) presented (see Figure 2) provides an illustration for analyzing teaching efficacy.

Figure 2. A Model for the Study of Teachers Sense of Efficacy (Denham & Michael, 1981, p. 40)
The three major components of Denham and Michael's model include: (1) teacher sense of efficacy; (2) the empirically defined antecedent conditions to teacher efficacy; and (3) the measurable consequences of teacher efficacy. The "teacher's sense of efficacy" is the variable which governs the relationship between antecedents and measurable results. As Rosenshine (1970) stated, there is an element of causality in both directions between antecedent variables and consequences related to "teacher's sense of efficacy". This statement resonates in Denham & Michael's (1981) work, as depicted in Figure 2. A teacher's sense of efficacy has an influence on antecedents, antecedents influence consequences, and consequences influence teacher sense of efficacy. The five categories of antecedent conditions include: (1) teacher training; (2) teaching experience; (3) system variables; (4) personal variables; and (5) causal attributions (Denham & Michael, 1981). *Teacher training* and its influence on efficacy is made up of a number of factors. Increasing effectiveness in the educational setting, convincing teachers they possess special knowledge needed for student learning to occur, and sharing similar teaching ordeals between trainers and trainees are important components of training related to efficacy (Denham & Michael, 1981). Other points regarding teaching efficacy that are influential include treating trainees as professionals, and programs that focus specifically on efficacy (Denham & Michael, 1981).

*Teaching experience* includes a variety of factors that may influence efficacy (Denham & Michael, 1981). The success of the teacher in achieving student learning in the classroom, the stage in a teacher's career when success and failure are experienced, student feedback regarding teaching, and the teacher's goals are all essential points
related to teaching efficacy (Denham & Michael, 1981). The students' learning may improve and they may inform the teacher they like what is occurring in the classroom. The teacher may feel successful because the students are learning and they are enjoying the method of teaching (Gibson & Dembo, 1984). These three points may be directly related to the goals a teacher may have in the classroom. Denham and Michael (1981) note that it is important to guide novice teachers as they embark on their career, since presumably, a beginning teacher is more susceptible to the detrimental effects of failure, whereas an experienced teacher may be less impacted.

*System variables* are the factors not associated directly with the students. Some examples include the career ladder of a professional educator, teacher participation in decision making at the school, challenge level in a teaching position, recognition of achievements during the teaching career, support from administration (principals, superintendents), support from colleagues, and messages regarding teachers that emanate from society (Denham & Michael, 1981). Lortie (1975) pointed out that the idea of the career ladder may impact the sense of efficacy of a teacher. A career ladder is the advancement of a teacher in the education setting: an example would be advancing from a classroom teacher to a principal of a school to a superintendent of a school district (Lortie, 1975). If there is a position that he or she may aspire to, there is motivation for mastering certain professional teaching behaviors. Also, recognition plays a role; as the teacher's career progresses, there is a greater chance of recognition for the educational methods one uses in the classroom. McLaughlin and Marsh (1978) noted that the more effort required by teachers and the greater change in teaching style that is experienced,
the more committed teachers become to the profession and their career. As the
researchers noted, "a primary motivation for teachers to take on the extra work and other
personal costs of attempting change is the belief that they will become better teachers and
their students will benefit" (McLaughlin & Marsh, 1978, p. 75).

**Personal variables** are the factors that are not associated with the teaching
profession, such as self-concept, gender, ethnic background, and age (Denham &
Michael, 1981). Personal variables have been identified through previous research as
influencing individuals' levels of self-efficacy (Noad, 1979; Weiner, 1976). Weiner
(1976) found that a person's motivation to be successful influences causal attributions.
Feather (1969) and Bar-Tal (1978) found that self-esteem may influence causal
attributions; if a teacher has a low-level of self-efficacy, he or she may attribute their
success at performing a task or set of actions to luck. If the teacher has a high level of
self-efficacy, their successful performance may be attributed to their own mastery of
actions.

**Causal attributions** are related to the other antecedent conditions of a teacher's
sense of efficacy (Denham & Michael, 1981). If a teacher experiences failure, the sense
of attribution to an antecedent condition may vary depending on how much the teacher
believes he or she has the ability to change the behavior. Change may be difficult due to
factors outside of the teacher's control such as the parents of students, or society and the
messages communicated regarding teachers. The level of teacher efficacy may be
attributed to antecedent conditions, causing the teacher to believe he or she does not have
much control over the behavior, or that the resulting behavior is not in their control.
The measurable consequences of teacher efficacy and antecedent conditions are teacher and student behaviors, as indicated in Denham & Michael’s model (1981). Teacher behaviors can be categorized as classroom behaviors, support of innovation in the teaching profession, professional teaching activities, and if one has tenure in his or her teaching position. Student behaviors can include achievement outcomes, affective (emotional) outcomes, and behavioral outcomes.

Teacher Behaviors

Teacher behaviors are measurable results of Denham and Michael’s model related to the construct of teaching efficacy (1981). Such behaviors are significant in the interactive relationship between the antecedents for teaching efficacy and the resulting level of self-efficacy for a teacher. One or more of these behaviors can be attributed to a high or low level of teaching efficacy.

Classroom behaviors. There are a variety of teacher’s behaviors that have been identified as effective in the educational setting (Brophy, 1979). These behaviors include focusing on (a) academic goals; (b) active involvement and monitoring students in the learning process; (c) providing immediate and academically oriented feedback; and (d) creating a task-oriented atmosphere in which much of the instruction comes from the teacher. Also, more effective teachers have been found to set aside more time for teaching. Further, they have been found to maximize the time students spend in productive activities. These and other findings indicate that an effective teacher is not one who randomly chooses a teaching style, but one who continually strives to reach
goals and will modify and adjust his or her teaching style in order to do so (Brophy, 1979; Fisher et al., 1978).

Support for innovation in the teaching profession. Teachers' sense of efficacy has been associated with innovative changes related to federally funded projects in the classroom. Individual teachers with higher levels of efficacy continued with project changes even after the funding was terminated (Berman, McLaughlin, Bass, Pauly, & Zellman, 1977). From the researcher's perspective, a caveat, when looking at teacher support for innovation, is that not all the innovative methods related to teaching and education result in desired student outcomes (Berman et al., 1977). Participating in innovative methods of education and not seeing the desired student outcomes may negatively influence a teacher's beliefs in his or her personal abilities; the teacher may feel that the outcomes are beyond personal control.

Professional teaching activities. Intrinsic motivation was identified as important in teachers' involvement in professional activities outside of the classroom, including participating in national associations or continuing education credit classes. Berman et al. (1977) found that teachers who were paid to participate in professional activities outside of the classroom reported fewer goals achieved and less student improvement in performance than teachers who were not paid for professional activities. Researchers hypothesized that the intrinsic motivation to attend professional activities and master the behaviors associated with those activities is more important than the pay received for attendance (McLaughlin & Marsh, 1978). The opportunities to learn innovative teaching techniques outside of the classroom and to grow professionally are crucial factors in
generating teacher commitment. These opportunities to learn and grow can positively influence the teacher’s sense of efficacy.

**Tenure in the profession.** Previous research has indicated that a teachers’ sense of efficacy is positively correlated with the longevity of the individual in the profession (Stinnet, 1970). The longer teachers remain in the teaching profession, the more they believe in their abilities to educate students in the classroom. Another possibility is that student performance may increase if a school is staffed with teachers who have a low turnover rate (Bush, 1970; Corey, 1970).

**Student Outcomes**

Student outcomes impact the dynamic of antecedents to teaching efficacy as well as its basic construct. The behaviors exhibited by students in the classroom influence a teacher’s belief in his or her abilities to educate. Also, it is a reciprocating relationship; a student’s response to a lesson in the classroom can influence the teacher’s beliefs on how to share information. Initially, teachers believe that they have the ability to change their teaching style and succeed in educating. The student may be a beneficiary of this adjustment if the previous style was not as effective. Learning by the student, who responds favorably regarding the teacher, is the result. In turn, the teacher responds to the student with the same optimism about learning.

**Achievement outcomes.** Berman et al. (1977) found in their research that a teacher’s level of efficacy has a strong correlation with gains in student learning. A teacher’s assessment of his or her ability to bring about positive change includes, as a component, the expectations by the teacher of the students (Denham & Michael, 1981).
Research regarding students with a variety of differing characteristics (ethnicity, socioeconomic status, ability) attributed student gains in learning to teachers who have had positive expectations of the students (Brookover & Erickson, 1969; Brophy & Good, 1974; Clark, 1965; Edmonds, 1979; Green, 1978; Kirk & Goon, 1975; Weber, 1971).

**Affective/emotional outcomes.** It has been noted that student achievements in the classroom and positive affective outcomes tend to be related (Denham & Michael, 1981). Specifically, a teacher's sense of efficacy influences student behaviors, in part, through the affective outcome of students' self-concept of their academic ability (Denham & Michael, 1981). Research has shown that students tended to respond more strongly and favorably to teachers who exhibited more warmth and optimism (St. John, 1971). Also, Brophy and Good (1974) found that teacher warmth was important, in particular to minority group students who were disliked or discriminated against by other students and teachers who represented the majority group.

**Behavioral outcomes.** Researchers found that teachers with low levels of self-efficacy reported more time spent controlling students in the classroom than teachers with higher levels of self-efficacy (Barfield & Burlingame, 1974). Further, teachers stated that interruptions, such as students being removed from the classroom for non-disciplinary reasons (special programs, visits from review teams, and testing programs) and non-educational obligations (recordkeeping), interfered with attempts to teach students (Kounin & Doyle, 1975). This is significant as continuity and momentum are often associated with the learning, and disruptions to the students' attempt to master educational practices over time can be detrimental to mastery.
Incorporating Denham and Michael’s (1981) construct and model for teacher efficacy has been pivotal in additional research related to teachers and their sense of efficacy. Their model of teacher efficacy illustrated the importance of identifying the cognitive and affective components associated with teaching. As further studies examined variables influencing teacher efficacy, such as the organizational context of the school and staff development, Denham and Michael’s work has been viewed as integral to the overall understanding of teaching efficacy.

Variables Affecting Teacher Efficacy

Gibson and Dembo (1984) confirmed Bandura’s conceptualization of self-efficacy (1977) in a study measuring teaching efficacy. The teachers in this study reported they had the ability and skills to educate the students in the classroom, despite a variety of backgrounds and socioeconomic levels of the students. Further, they believed that the different conditions of the schools, such as high or low socioeconomic status of students attending the school where they were teaching, would not impact the learning process. Also, these researchers found that teachers with low levels of efficacy spent an average of 2.4% of their time (10.5 minutes) involved with students in intellectual games. This may appear low, but it was noted that none of the teachers with high levels of efficacy allocated any time for intellectual games. This may be due to the observation that games may not be the most effective method of education, and that other, more effective forms and techniques may be employed (Gibson & Dembo, 1984; Stallings & Hentzell, 1979).
Further, there were differences noted in how teachers with varying levels of efficacy managed their classes (Gibson & Dembo, 1984). Teachers with high levels of efficacy spent 20% less time in small group instruction than teachers with low levels of efficacy. Low efficacy teachers strictly adhered to a rigid format for reading instruction, whereas the high efficacy teachers were more flexible. High efficacy teachers were more at ease with change in the classroom than low efficacy teachers, who appeared flustered when their routine for class was interrupted. The students who were taught by teachers with low levels of efficacy spent a significant amount of time off-task without redirection from the teachers; teachers with high levels of efficacy redirected students when needed, answered questions of students who joined small groups, and in general achieved more on-task behavior from the students. Finally, high efficacy teachers allocated twice as much time to whole class instruction that low efficacy teachers.

Gibson and Dembo’s study (1984) reiterated the multidimensional nature of teaching efficacy by illustrating personal teaching efficacy, as well as teaching efficacy. Personal teaching efficacy is the belief a teacher has in his or her own abilities to educate students, while teaching efficacy is the general ability of teachers to educate students. The researchers also described the influence teaching efficacy may have on classroom behavior and the achievement gains desired for students (Gibson & Dembo, 1984). The conclusions indicated that a number of other factors (organizational context, primary characteristics, and teaching commitment) should be analyzed in order to better comprehend the role of efficacy in the teaching environment. The results of this study support Denham & Michael’s (1981) work, highlighting (a) the importance of
understanding what conditions exist prior to measuring teacher efficacy; (b) how the measurement of teacher efficacy will impact subsequent teacher and student behaviors; and (c) that the resulting behaviors can amend or alter existing conditions (Gibson & Dembo, 1984).

Subsequent studies (Guskey & Passaro, 1993; Ramey-Gassert et al., 1996) added to the examination of teaching efficacy, reconfirming that it is a multidimensional construct. The researchers found that teachers looked at influence on student learning in a general fashion. The teachers involved in these studies answered questions focusing on whether they could or could not have an influence in student learning (Guskey & Passaro, 1993; Ramey-Gassert et al., 1996). The results of the studies indicated that there were two groups of factors identified when discussing efficacy—internal and external factors. Internal factors represented personal influence, power, and impact of the teacher. External factors represented influence, power, and the impact that occur outside the classroom. The teachers who responded in the studies did not differentiate between their personal ability to impact students versus the potential influence of teachers in general.

Fuller, Wood, Rapoport, and Dornbusch (1982) highlighted the integrated nature of teacher's performance and organizational efficacy. Performance efficacy is the belief a teacher has in performing work-related tasks independent from other members of the school's social structure. Organizational efficacy refers to the belief a teacher has in influencing another member of the school's social structure for a desired outcome. A teacher's organizational efficacy arises from experiences of attempting to influence
others, as well as the beliefs of the individuals who work in a given school’s social structure.

A teacher’s levels of performance and organizational efficacy can ensure school stability, or inhibit change from occurring in the school (Fuller et al., 1982). When individual and organizational goals converge, higher levels of efficacy are needed in order for both types of goals to be achieved. Within schools, if there is an achievement structure, this factor can enhance the teacher’s level of efficacy. This can be observed even in the face of instability and change within a school (Fuller et al., 1982). If there is action taken to work with teachers and explain the purpose of the change and temporary instability, organizational goals and means may be understood better.

Fuller et al. (1982) reiterated that teachers’ perceived levels of efficacy influenced student performance and organizational goals. Teachers believed that the greater the effort by not only themselves but by students would result in higher achievement gains (Brookover, 1977; Rutter, Maughan, Mortimore, Ouston, & Smith, 1979). The research highlighted the importance of convergence between a teacher’s goals and an organization’s goals. When there was a convergence, higher levels of efficacy resulted in improved teacher performance and organizational performance regarding student achievement (Fuller et al., 1982).

Smylie (1988) expanded on previous research by Ashton and Webb (1986) by establishing a direct relationship between teaching efficacy and teacher change. Teachers were more likely to change their behavior and teaching style if they believed that they were personally instrumental in the learning of the students in their classroom (Smylie,
1988). The researcher studied three types of antecedents that may influence individual teachers' methods. Those antecedents were: teachers' psychological states, characteristics of the classroom, and various dimensions of interaction within the school setting. Data were collected using The Effective Use of Time Staff Development Program, or EUOT (Smylie, 1988). The EUOT consists of four components: (a) teacher observation and critique, (b) distribution of research related to effective usage of classroom time, (c) guided practice from other teachers, and (d) teacher observation to document if changes in classroom management are made. Data were collected through observation, teacher surveys and interviews, and classroom questionnaires answered by the teachers. These types of antecedents have been postulated to have a direct relationship to teachers and whether they adjust their teaching methods or styles.

**Teachers' psychological states.** Psychological antecedents include personal teaching efficacy and the certainty of teachers regarding their methods (Smylie, 1988). Personal teaching efficacy is defined as teachers' perceptions of their ability to influence student learning (Ashton & Webb, 1986). Research conducted by Ashton and Webb (1986) on personal teaching efficacy has shown that teachers with higher levels of efficacy are more likely to adopt and implement new classroom strategies. This is due to the confidence that teachers in this study had in their abilities to manage the classroom and impact student learning.

Personal teaching efficacy can also be influenced by the interactions teachers have with colleagues; these interactions provide points of reference for teachers related to their classroom methods and teaching style, which in turn impacts their beliefs in their
abilities (Buhr, Crocker, & Ashton, 1983). Principals and other administrative staff members may foster perceptions by teachers about their abilities when discussing topics such as school goals and teaching or performance assessments (Fuller et al., 1982). Participation by teachers in the decision-making processes that impact the school has been shown to positively impact teachers’ efficacy, especially if the decisions provide meaningful student benefits (Hawley & Rosenboltz, 1984).

Teachers’ certainty about their practice is another influential source of information that is directly connected to behavioral decisions. Ashton and Webb (1986) illustrated that teachers’ uncertainty about their practice in the classroom, inclusive of teaching methods, strategies, and management, was related to lower levels of efficacy. In addition, teachers’ certainty of practice has been significantly related to the degree to which they achieve the goals set forth in the curriculum (Glidewell, Tucker, Todt, & Cox, 1983). Clarity of the goals for learning aids in the teaching process and teachers who are cognizant of the goals set forth for learning are able to be more effective in reaching those goals.

**Characteristics of the classroom.** Various characteristics associated with the classroom environment may influence the development of personal teaching efficacy as well as the teachers’ certainty of their practice (Smylie, 1988). Speculation is that the larger the class size, the more difficult it is to work individually with students, to manage the classroom behavior, and for teachers to maintain the level of control they desire (Glass, Cahen, Smith, & Filby, 1982; Hawley & Rosenboltz, 1984). Classes that have diverse populations may have teachers that use a uniform method of working with as
many students as possible while managing classroom behavior (Hawley & Rosenholtz, 1984). Lastly, teachers who have preconceived expectations for low or high achieving students may manage the classroom in different ways, depending on the students and the perceptions of their abilities (Brophy & Good, 1974; Cooper, 1979; Hawley & Rosenholtz, 1984).

**Dimensions of interaction within the school setting.** Schools that are academically effective include principals who clearly communicate the goals of the organization to teachers and students (Hawley & Rosenholtz, 1984). A clear statement of one's goals provides a teacher with guidance and may spur him or her to behavior that will positively impact students (Rosenholtz, 1985). Also, principals may influence behavior through their supervision and facilitation of teachers' work as well as the requisition of resources needed by teachers for their classrooms (Leithwood & Montogomery, 1982; Smylie, 1988). Further, the interpersonal relationships that teachers develop with colleagues provide emotional and psychological support for their work and efforts to improve their teaching effectiveness (Anderson, 1982). These cooperative collegial relationships provide arenas for joint decision-making that influences the organizational goals of the school and personal goals of the teacher. Teachers who feel that their individual goals will be acknowledged in the school are more open to try new methods in the classroom (Bossert, Dwyer, Rowan, & Lee, 1982; Leithwood & Montogomery, 1982; McLaughlin & Marsh, 1978; Walberg & Genova, 1982). If the support for teachers' experimentation is evident, norms for this type of growth will become standard and greater attempts for school innovations will emerge.
Smylie (1988) confirmed previous research that stated teachers' personal efficacy influences how apt they are to change in the classroom (Ashton & Webb, 1986; McLaughlin & Marsh, 1978). Teachers were more likely to change their behavior to gain greater effectiveness in the classroom if they believed they were instrumental in the learning process of the students. Conversely, if the teacher believes he or she was not instrumental and failed in the students' learning, he or she will not be inclined to adopt new methods and change for fear of failing in that area as well. As Smylie indicates, "the more certain teachers are about their practice, the more likely they are to believe that they can be instrumental in the learning of the students" (1988, p. 23). On the other hand, "the lower the achievement level of students in the class, the less likely teachers seem to be to believe that they can affect student learning despite the level of confidence they may have in their knowledge and skills related to teaching" (Smylie, 1988, p. 23). Also, teachers who interacted with colleagues developed a body of knowledge inclusive of practices and techniques that may be effective in the classroom. In conclusion, whether teachers were willing to change or adjust their teaching methods or style seemed to be rooted in perceptions of self, combined with experiences in the classroom and with colleagues at school (Smylie, 1988).

Raudenbush et al., (1992) have extended the research associated with teaching efficacy and analyzed teachers' perceptions of their ability to generate a particular level or type of teaching performance in the classroom. The authors studied variations in teaching efficacy within the teacher (intra-teacher variation) based upon the "track" or level of the class, the preparation for the class being taught, the age of the students, the
class size, and the students' engagement in class (Raudenbush et al., 1992). Also, they researched variations in teaching efficacy among teachers (inter-teacher variation) related to the classroom setting, disciplinary background, organizational environment, and personal background (Raudenbush et al., 1992). Working with teachers from 16 different high schools, the researchers came to a number of conclusions related to intra-teacher variation in efficacy (Raudenbush et al., 1992). First, they concluded that the perception of self-efficacy was contextually based; the characteristics of various classes taught by the teachers influenced the teachers' sense of efficacy. Second, they reported a teacher's sense of efficacy fluctuated depending on the "track" or level of the class he or she taught. Third, they noted the age of the students in the class taught influenced the teacher's sense of efficacy. Younger high school classes (freshman and sophomores) tended to correlate with lower levels of teacher efficacy. Fourth, they concluded that the level of teaching efficacy seemed to result from a match between a teacher's intellectual background and the content taught in a class. Higher levels of teacher efficacy resulted from better alignment of intellectual background and content of classes taught. Lastly, teachers displayed a higher level of efficacy in larger classes.

Raudenbush et al. (1992) yielded significant findings related to inter-teacher variation in self-efficacy. These researchers found that women reported higher levels of efficacy than men, but overall, the personal and disciplinary backgrounds of the teachers had little effect. Teachers who reported higher levels of control during instruction time and higher levels of staff collaboration also indicated higher levels of self-efficacy. This finding was important, at the time in the field of education, as it provided support for
teachers to be more involved in school-wide decision making as well as to engage in more collaborative activities in the workplace.

Summary

The progression of research related to teaching efficacy has provided a strong foundation for understanding factors impacting teachers in the classroom. Conditions existing prior to teaching, as well as behaviors that result from teaching are crucial components of a teacher's sense of efficacy. These conditions include experience in the classroom, the school system, students' behaviors, personal characteristics, and how much perceived control a teacher has during their course of teaching. Also of importance to a teacher's level of efficacy is the amount of learning that occurs with the students in the classroom. The research and results related to teaching efficacy are the basis for studies related to another form of efficacy - coaching efficacy.

Research on Coaching Efficacy

This part of the literature review will begin with an introduction to the concept of coaching confidence. Second, there will be a discussion of coaching efficacy involving an explanation of the model used to study coaching efficacy. This section will conclude with an analysis of the various factors associated with previous coaching efficacy studies.

Coaching Confidence

Coaching confidence is a foundational concept in sport. Confidence, as defined by Bandura (1997), is the firmness or strength in one's belief. When related to coaching, confidence refers to the strength a coach has in his or her abilities to reach a goal. These goals can vary (e.g., victory in a match, team cohesion, a favorable win/loss record, skill
development by a player or players), but they are all connected to coaching confidence.

Coaching confidence has been referred to as an overarching concept which encompasses two general perceptions: self-efficacy and competence (Marback et al., 2005).

Barber's (1998) conceptualization of coaching confidence centers on the topic of coaching competence. Perceived competence is defined as the perception that one has the ability to master a task resulting from cumulative interactions with the environment (Nicholls, 1984). The components of coaching competence include communication skills, the ability to motivate athletes, the ability to teach sport skills and techniques, strategic and tactical knowledge, knowledge related to physical training and conditioning, individual practice and seasonal planning, and coaching during competition. Coaching competence contributes to a coach's motivation. Further, the perceptions of athletes and administrators can also influence a coach's confidence (Barber, 1998). Athletes and administrators who feel a coach is not competent and cannot perform the tasks needed to be a coach may not provide support to that individual's efforts. This can negatively impact a coach because the coach may interpret the athletes' lack of response as an inability to perform the tasks needed to coach.

Barber's study examined the differences in coaching competence between male and female coaches through a number of hypotheses (1998). The first hypothesis suggested there would be significant differences in competence information between male and female coaches. It was hypothesized that male coaches would use competition results, peer comparison, and feedback from athletic administrators, while female coaches would use self-reflection, improvement of the athletes, and effect on athletes to
judge their competence. The second hypothesis stated that there would be significant differences in levels of perceived coaching competence between male and female coaches. Female coaches would perceive themselves as more competent with communication and motivation skills, whereas male coaches would perceive themselves as more competent in the areas of skill and technique, strategic planning, and competitive tactics. The third hypothesis stated that significant relationships would emerge between male and female coaches related to the combination of competence information and levels of perceived coaching competence. Improvement of coaching skills, effect on athletes, and improvement of athletes' abilities would be significantly related to female coaches; competition results, peer comparison, and feedback from athletic administrators would be significantly related to male coaches.

The participants in the study were 240 (female = 102, male = 138) high school volleyball, basketball, softball, and soccer coaches (Barber, 1998). Perceptions of coaching competence were measured in two ways. First, coaching competence was assessed using an instrument referred to as the Perceived Coaching Competence Questionnaire (PCCQ). The PCCQ was based upon a number of categories previously established as critical to effective coaching (Martens, 1990); these categories included communication, motivation, teaching sport skills, sport-specific knowledge of strategies and tactics, training and conditioning, practice and seasonal planning, and coaching during competition. The second instrument used to measure coaching competence was the Coaching Motivation Questionnaire (CMQ). This questionnaire examined three commonly cited reasons for withdrawal from coaching—time demands associated with
coaching, low perceptions of coaching competence, and lack of administrative support (Pastore, 1991; Weiss & Sisley, 1984).

The results of the study indicated partial or no support for any of the hypotheses (Barber, 1998). The first hypothesis was partially supported. Female coaches relied on improvement of their athletes and their own coaching skills. Male coaches relied on the improvement of their athletes and their own coaching skills, and significantly less on competition results and peer comparison. These performance-based criteria might positively impact perceptions of competence for all coaches, regardless of gender (Barber, 1998).

The second hypothesis related to different levels of perceived coaching competence was partially supported (Barber, 1998). The lone area of significant difference between male and female coaches was the difference with teaching sport skills, where female coaches perceived themselves as more competent. The mean ratings in the other areas in this study were similar for male and female coaches.

The third hypothesis stated that significant relationships would emerge between male and female coaches related to the combination of competence information and levels of perceived coaching competence was not supported (Barber, 1998). There were significant relationships between sources of efficacy information and perceptions of competence, but the predicted relationships associated with gender did not occur. Male and female coaches used the competence information in different ways which impacted the individual perception of coaching competence. Barber speculated that male coaches may have a wider range of competence information, extending beyond the scope of the
study. With the results of the study, Barber concluded that there were not any meaningful gender differences in perceived competence and sources of competence information (1998).

Coaching Efficacy

Compared to the more general self-perception of coaching competence, coaching efficacy is often referred to as situationally specific self-confidence (Feltz, 1988). Coaching efficacy is defined as “the extent to which coaches believe they have the capacity to affect the learning and performance of their athletes. Performance in this sense is also meant to include the psychological, attitudinal, and teamwork skills of athletes” (Feltz, et al., 1999, p. 766). Coaching efficacy is concerned with the learning by athletes as well as the influence on the “game day” performance of athletes. Coaches who illustrate high levels of coaching efficacy are viewed as: (a) using more effective tactical skills; (b) employing more motivational and corrective feedback techniques; (c) committing more time to coaching; (d) having players who are more satisfied with the coach; (e) having more successful performances; and (f) having more efficacious and motivated players (Feltz et al., 1999).

Feltz et al. (1999) theoretically proposed, after a 5-week seminar involving coaches who were graduate students in sport psychology, that coaching efficacy was comprised of four dimensions: (a) game strategy; (b) motivation; (c) technique; and (d) character building. Game strategy refers to the belief coaches have in their ability to coach during competition and lead their athletes to a successful performance. Motivation can be thought of as the belief coaches have in their ability to influence the psychological
skills and states of their athletes. Technique is the belief coaches have in their ability to teach specific skills. Character building is explained as the belief coaches have in their ability to influence the personal development and attitude of their athletes.

The researchers proposed that the four dimensions of coaching efficacy were influenced by a coach's past experiences and performances in that role, the perceived talent or skill level of the athletes, and the perceived support provided by the community (Feltz et al., 1999). Conversely, it was proposed that coaching efficacy influenced coaching behavior, athlete satisfaction with a coach, performance of the athletes, and player efficacy levels (Feltz et al., 1999). If coaches are highly efficacious, they will a) use more effective tactical skills and more effective motivational and corrective feedback techniques, b) be more committed to coaching, and c) work with athletes who are more satisfied with the coach, e) have more successful game performances, and f) have more highly efficacious athletes (Feltz et al., 1999).

A 24 item Coaching Efficacy Scale, or CES, was constructed to empirically test the four dimensions of coaching efficacy (Feltz et al., 1999). This scale posed, in random order, questions related to game strategy, motivation, technique, and character building. This scale, along with a demographic questionnaire, was distributed to 125 male head high school boys' basketball coaches. Of the 125 coaches, 70 returned the questionnaires for usage; one coach was officially retired, so the total number of participants involved in the study was 69. The 15 coaches who scored the highest and lowest in their responses were asked if two of their basketball practices could be observed and if the players on the team could complete a questionnaire regarding their high school basketball experience.
The coaches agreed, and the CBAS (Coaching Behavior Assessment System) was used to record and classify the coaches' behaviors (Feltz et al., 1999). The CBAS is a system of observation in which trained observers witnessed and coded behaviors during practice, in order to provide additional data for analysis during the study.

The results of the study indicated a number of important conclusions related to coaching efficacy (Feltz et al., 1999). Coaching experience and perceived social support from the community were found to be important sources of influence on coaching efficacy. The coaches' winning percentage was not as strong a predictor of coaching efficacy as previous years of coaching experience, perceived team ability, and community support. The researchers observed that high efficacy coaches employed more influential behaviors related to praise and encouragement, including positive reinforcement for a desired performance, positive reinforcement plus technical instruction, encouragement that does not follow a mistake, and mistake-contingent encouragement. High efficacy coaches demonstrated less instructional and organizational behavior than lower efficacy coaches. This may be due to the fact that lower efficacy coaches are novices, or new to the head coach position, and are more concerned with solidifying the structure of practice so that it runs efficiently. Previous research has shown that expert coaches used instructional approaches that were more fluid, cohesive and efficient that novice coaches (DeMarco & McCullick, 1997). The irony is that novice coaches interrupt the flow of practice with low-quality instruction, and if the players still do not comprehend what the coach is demonstrating or saying, the coach may begin to doubt his or her ability to coach (DeMarco & McCullick, 1997).
Overall, it was found that coaching efficacy is based upon a number of factors including: previous years of coaching experience; preparation for practices and competition; prior success; perceived ability of the athletes on the team; and community support.

Factors Influencing Coaching Efficacy

Several researchers have strengthened the understanding of what aids in the development of various efficacy levels in coaches. The following studies are a significant part of the expanding body of knowledge associated with coaching efficacy. The factors involved in these research studies include: (a) the gender of a coach; (b) previous training/licensing/certifications related to coaching; (c) previous years of coaching experience; (d) win/loss record as a coach; (e) commitment to coaching; and (f) player/team efficacy.

Gender and Coaching Efficacy. Lirgg, Dibrezzo, and Smith (1994) studied the effects of the coach's gender on the self-efficacy of the players. This study was inclusive of the players' choice of the level at which they would like to coach. The researchers grounded their study in Bandura's work on self-efficacy (1977, 1986). Using his research on self-efficacy, the researchers reasoned that athletes who are skilled players or who have played a specific sport for many years may believe that they will also be good coaches based on their perceived ability or previous experience. Specifically, Lirgg et al. studied whether playing for a male or female coach influenced female athletes' self-efficacy for becoming coaches (1994). The authors believed that female athletes coached by a female would show a higher level of self-efficacy for becoming a coach than a female athlete coached by a male. Other variables studied in this research project
included size of the school, perceived playing ability, age of the player, and team success (Lirgg et al., 1994).

The subjects for the study included 280 female high school basketball players and 24 high school basketball coaches (Lirgg et al., 1994). The players responded to a questionnaire discussing their confidence in their ability to coach basketball after they had completed their education. The coaches and players also responded to a questionnaire discussing the reasons why basketball is played: mastery/cooperation, physical activity, good citizenship, competition, high status, self-esteem, and social status.

Lirgg et al. (1994) found that the overall future coaching efficacy of the athletes was not moderated by gender; rather the athletes' perception of their basketball playing ability was the strongest predictor of coaching efficacy. These results indicated that regardless of the gender, the athletes' perception of whether they could coach or not was related to their interpretation of their playing ability. The researchers also found that gender of the coach positively affected the athletes' aspirations to coach. Female players with a same gender coach were more likely to report a desire to become a head coach. The female players with male coaches were split in their desire to become a head coach or an assistant coach.

Marback et al. (2005) examined the gender differences of coaching efficacy among collegiate coaches representing a myriad of sports—football, basketball, volleyball, hockey, softball, track and field, cross country, soccer, wrestling, baseball, swimming, golf, and tennis. Using the CES, the researchers found that female coaches scored lower
than males in game strategy and motivation efficacy. Also, it was found that females had higher levels of character building efficacy than males, which showed that female coaches perceive themselves as more influential than males when it comes to instilling respect and good sportsmanship among their athletes.

Everhart and Chelladurai (1998) extended Lirgg et al.'s work (1994) and examined the gender differences related to coaching self-efficacy, the attraction to the coaching profession (valence), and barriers associated with coaching at the high school and collegiate levels. The researchers were concerned with the entry of women into the coaching profession. One hundred ninety-one collegiate basketball players (97 female and 94 male) responded to a questionnaire discussing coaching self-efficacy, occupational valence, or attractiveness, working hours, perceived discrimination, and the desire to coach.

Everhart and Chelladurai's study yielded several results associated with coaching efficacy (1998). First, the researchers found that the players had a high perception of their coaching efficacy. They noted that if they had to engage in coaching as a profession, they felt confident that they could carry out the duties required to coach (Everhart & Chelladurai, 1998). The positive correlations indicate that as the level of coaching self-efficacy increases, so does the desire to coach at a particular level. Second, the researchers noted that there was a significant influence related to gender and occupational valence. Whether the player was male or female, and whether the player's coach was male or female did matter in their attraction to the coaching profession. Coaching was more attractive to women than men, and female players with a female
coach were more attracted to coaching than female players with a male coach. Overall, coaching was an attractive profession to the participants of this study. Third, they documented that working hours were not perceived by either male or female players as significant barriers to coaching. Fourth, the researchers found that female players who had a male coach responded that perceived discrimination was a barrier to coaching more so than female players with a female coach. Finally, the results showed that there was no significant difference between the gender of the player and the desire to coach.

The researchers' findings illustrated several points that impact the coaching efficacy literature (Everhart & Chelladurai, 1998). The interpretation of the results indicated that men and women do not differ in coaching self-efficacy. Also, women perceived a greater attraction to coaching than men. Further, men and women did not differ significantly in the perception of working hours as a barrier to coaching. In addition, the women in the study had a higher level of valence (defined in the initial paragraph regarding this study) to coaching when they had a female coach than a male coach. This may support the notion of continued inclusion of more females in the coaching ranks of women's sports. Finally, while self-efficacy has been identified as a significant factor in the choice of occupation, it was a minimal influence in the participants' desire to coach. This may indicate that while self-efficacy is a concept that should be analyzed in studying valence related to coaching, there may be other factors that impact whether an athlete pursues a coaching career.

**Education/Training/Licensing and Coaching Efficacy.** Education, training, or licensing can include a number of opportunities which encourage growth as a coach.
Resident courses, internships, day-long seminars, and collegiate or university coursework are a few examples of educational programs that help individuals blossom as coaches on and off the field. Research in the coaching arena has demonstrated that one or more opportunities to gain education as a coach can positively impact the individual as he or she guides athletes.

Malete and Feltz (2000) studied the influence of a coaching education program on the levels of efficacy of a group of coaches. The participants in the experimental group consisted of 36 coaches from Michigan high schools who had participated in the Program for Athletic Coaches Education, or PACE. PACE is a 12 hour program that provides interscholastic coaches with information pertinent to their daily responsibilities as a coach. The topics covered in the PACE program include: (a) guidelines and policies for interscholastic athletics; (b) legal responsibilities as a coach; (c) emergency procedures for accident and injuries to players; (d) prevention, care and rehabilitation for sports-related injuries; (e) the overall role of the coach; (f) effective instruction and game strategy; (g) how to motivate athletes; (h) personal and social skills when interacting with players, parents, and other community members; (i) positive coaching techniques; and (j) maintaining discipline on the team (Allen, 1999). PACE was used because the design structure aligned with the 1995 standards for athletic coaches set forth by the National Association for Sport and Physical Education (NASPE). The 24 members of the control group were a combination of coaches from high schools in Michigan, as well as collegiate students majoring in physical education who were intent on coaching or had
coaching experience. The participants in the control group indicated that they had not previously participated in any coaching education programs.

Demographic questionnaires as well as the Coaching Efficacy Scale (Feltz et al., 1999) were administered to both groups. The results of the study showed a significant relationship between involvement in PACE and an increase in coaching efficacy (Malete & Feltz, 2000). Character building and motivation efficacy displayed little change, while game strategy and technique efficacy moderately increased with education or training. These results indicate that the impact of a coaching education program can be a positive influence, but that other factors may cause a more significant increase in coaching efficacy. The authors speculated that if the program’s duration was longer, there may be greater effects on the coaches’ levels of efficacy. Also, if coaching education programs allow coaches to “try out” new behaviors in a simulated environment, this may potentially increase their levels of confidence (Malete & Feltz, 2000).

Lee et al. (2002) expanded on the previous research by Malete and Feltz (2000) by examining the influence coaching education programs have on coaching efficacy. Specifically, they studied whether there were differences in coaching efficacy between certified and noncertified coaches in Singapore. The researchers hypothesized that certified coaches would have higher levels of efficacy related to game strategy, motivation, technique, and character building than non-certified coaches.

There were 235 coaches involved in the study; 98 of the coaches were not certified and 137 of them were certified. The coaches represented a variety of sports, such as track and field, soccer, swimming, basketball, volleyball, and table tennis. The
researchers administered the CES (Feltz et al., 1999) towards the end of the coaching education sessions administered by the National Coaching Accreditation Program (NCAP) developed by the Singapore Sports Council (SSC). The broad goals of the NCAP include “increasing levels of youth participation in sport, improving techniques and skills of youth sport coaches, and to increase the competitive urge of Singapore athletes internationally” (Lee et al., 2002, p. 57). The NCAP is comprised of three levels: Level (1) general theoretical principles of coaching; Level (2) sports skills and techniques; and Level (3) practical coaching experience. Upon completion of each level, the participant receives a certificate of accomplishment. The noncertified participants in the study had not completed Level 1, whereas the certified participants had completed Level 1.

The researchers in this study concluded that coaching education was positively associated with coaching efficacy (Lee et al., 2002). Game strategy and technique efficacy levels for certified coaches were significantly higher than noncertified coaches, yet there were not significant differences for motivation and character building efficacy levels between the two groups of coaches. This may by explained by the fact that the NCAP covers topics related to technique, skills, and game strategy, but does not cover motivational techniques (Lee et al., 2002). Also, the authors speculated that there are cultural differences between Singapore and the United States related to how coaches motivate athletes. These differences may be attributed to a general concept of sports in Singapore that does not equally reward academic and athletic achievements as in the United States (Lee et al., 2002).
In a related study, Fung (2002) has examined the role of “task familiarity” related to coaching efficacy. Task familiarity is represented by three components: the number of years an individual has coached, the number of hours coaching in the past 12 months, and the level of accreditation awarded to the coach by the National Sports Association of Hong Kong. This researcher hypothesized that the higher the number of years coaching, the more hours spent coaching in the past 12 months, and the higher the accreditation level, the higher the level of the coach’s efficacy.

There were 252 coaches who participated in the study, of whom 186 were men and 66 were women (Fung, 2002). Each of the coaches completed a demographic questionnaire as well as the CES (Feltz et al., 1999). The participants in this study were involved in the coaching educational system conducted by the National Sports Association of Hong Kong. There are three levels to that system, and for a participant to advance to the next level, he or she needs to complete courses, workshops, and coach for a fixed number of hours, depending on the sport. Each step in the coaching education program requires more hours spent coaching and more time involved with workshops and courses. In the study, there were 148 Level 1 coaches, 87 Level 2 coaches, and 17 Level 3 coaches.

The results of the study indicate that a higher accreditation level affects coaching efficacy (Fung, 2002). Coaches did not feel confident in their abilities to make decisions regarding strategies, regardless of their level of accreditation. One method suggested by the researcher to raise the level of game strategy efficacy would be to have the coach involved in a mentoring relationship with a “master coach” (Fung, 2002, p.372). This
arrangement would allow the coach who is the "mentee" to witness the decision-making skills of the "master coach", and later in the relationship be more actively involved in the decision-making process. This can have significant impact on the level of efficacy, as indicated in the teacher education literature (Fuller et al., 1982; Hawley & Rosenholtz, 1984). The impact of this relationship on future coaches can be influential in a variety of ways. A novice coach may have someone to turn to for guidance or advice in the future. If the novice coach had the opportunity to shadow an experienced coach and watch how the coach handles various situations, the novice coach, when in the same situation, may have an understanding of how to act. Finally, the novice coach may be able to acquire certain methods and techniques for coaching that can be put to use when he or she is working (Fung, 2002).

Number of Years Coaching (Coaching Experience) and Coaching Efficacy. As previously stated, the number of years a person has coached, or coaching experience, is a dependable source and strong predictor of coaching efficacy (Bandura, 1977). Feltz et al. (1999) found that the number of years coaching correlated significantly with game strategy and motivation efficacies more so than technique and character building efficacies. Teacher education literature also supports the notion that years of experience in the profession may be a significant influence on the level of teaching efficacy (Denham & Michael, 1981; Hoy & Woolfolk, 1993; Ramey-Gassert et al., 1996; Raudenbush et al., 1992; Stinnet, 1970).

Lee et al.'s (2002) research involving coaching experience partially supports the initial work done by Feltz et al. (1999). Game strategy efficacy and technique efficacy
were positively associated with coaching experience. Within Lee et al.'s (2002) study, it was found that experienced coaches did not differ from inexperienced coaches on motivation efficacy and character building efficacy. These researchers speculated that it may take longer for an experienced coach to develop motivational tools, more so than the development of exercises and drills which attend or focus on technique or game strategy. It most certainly helps if there are opportunities for coaches during their profession and tenure to develop their motivational and character building skills, but it is a difficult area for coaches to assess (Lee et al., 2002).

Marback et al. (2005) also found that coaching experience is significantly related to the concept of coaching efficacy. In their study, these researchers concluded that coaching experience is a strong source for efficacy, noting its predictive influence on game strategy, motivation, and character building efficacy. As Marback et al. (2005) point out, previous experience as a coach "has a powerful effect on efficacy beliefs" (Marback et al., 2005, p. 26). These findings continue to illustrate the significance performance accomplishments can have on coaches' self-efficacy, which may impact subsequent performances in the coaching setting.

Win/Loss Record and Coaching Efficacy. Performance accomplishments of a team can be a powerful source of efficacy for not only the athletes but also for the coach (Bandura, 1997; Feltz & Lirgg, 1998). If a team is performing successfully, the coach may develop confidence in his or her coaching style and methods, believing he or she is performing correctly. Conversely, if the team is not performing well and there is consistent failure, the coach may lose confidence in his or her ability to lead, motivate
and guide the athletes. Further a coach may develop a perspective or feel that winning or losing is uncontrollable.

Feltz et al. (1999) discovered that a coach’s past success (win/loss record), combined with coaching experience, perceived player talent, and social support can provide insight into the coach’s level of efficacy. Previous coaching success correlated significantly, but moderately, with game strategy and motivation efficacy. The overall interpretation by these researchers suggests that the aforementioned factors positively affected a coach’s confidence in his or her game strategizing, motivational skills, and technical instruction.

Marback et al.’s (2005) study mentioned earlier incorporated Barber (1998) and Feltz et al.’s (1999) work regarding the influence of win/loss records on coaching efficacy. The researchers found that previous coaching success was the most influential source of confidence among the subjects studied. This conclusion helps further clarify the fact that previous coaching success has an impact on coaching efficacy, and it illustrates the priority that winning and losing may take when discussing how confident a coach feels in his or her ability to guide a team.

Commitment to Coaching and Coaching Efficacy. Commitment is defined as “a worker’s wholehearted participation in organizational activities, exertion of his or her efforts, and performance in those activities.” (Chelladurai, 1999, p. 248). In coaching, there is a constantly evolving relationship among the coach, the athletes he or she coaches, the organization or administrative body he or she represents, the community, and its supporters. Kent and Sullivan (2003) studied the dynamic of organizational
commitment and its relationship to coaching efficacy. There are three elements associated with commitment: affective commitment, continuance commitment, and normative commitment (Meyer & Allen, 1991). Affective commitment refers to a coach's emotional connection to the organization, or the desire or want to remain with an organization. Continuance commitment refers to the coach's need to remain with an organization. An individual may realize the costs incurred departing from the organization, so he or she elects to stay with the organization. Normative commitment is the obligation a coach feels to remain with an organization; in other words, the individual feels that he or she ought to stay.

The study involved 224 intercollegiate Division I and II coaches from a variety of sports, including basketball, baseball, volleyball, softball, track, swimming, gymnastics, golf, tennis, soccer, cross-country, and hockey (Kent & Sullivan, 2003). Each coach was asked to respond to the Coaching Efficacy Scale (Feltz et al., 1999) as well as a number of demographic questions. The instrument measured organizational commitment with various scales gauging affective, continuance, and normative commitment (Meyer & Allen, 1991).

The results of this study indicated relationships between the various components of coaching efficacy and the types of commitment (Kent & Sullivan, 2003). Affective commitment was positively related to motivation, strategy and character building efficacy. In other words, if a coach masters certain forms of motivation or game strategy within their present setting, he or she tends to gain confidence in his or her abilities. This potentially leads to further attempts at mastering other motivational tools or strategies.
such attempts are directly connected to affective outcomes, and follow the conceptual reasoning outlined by Bandura when articulating self-efficacy.

Kent and Sullivan (2003) also found that normative commitment was positively related to motivational and character building efficacy. They suggest that the obligation of coaches to return to their position illustrates their competence, and is a key component of motivation and character building. The “growing pains” or “life lessons” associated with coaching that others may witness is part of character development.

The overall result of the study suggested that highly efficacious coaches wanted to remain in their position longer than other less efficacious coaches (Kent & Sullivan, 2003). Further, the researchers reported that if the coach’s self-efficacy is high, he or she may feel the need to stay at the organization. This may be due to a feeling that the organization and one’s work situation is partly responsible for the high level of self-efficacy. Finally, the results of the study support statements that commitment develops as a reciprocal process between an individual and the organization (Baruch, 1998). The more committed an organization is to the employees, the more committed the employees are to the organization (Kent & Sullivan, 2003). These results can be useful to administrators as they continually seek to secure coaches who will lead student-athletes in a successful fashion. Even through the wins and losses, if the organization is committed to the coach and willing to continually work with him or her, it can prove integral regarding the coach’s self-efficacy.
**Player/Team Efficacy and Coaching Efficacy.** Player efficacy refers to the thought an athlete has regarding how well he or she can perform a specific skill related to his or her sport. Team efficacy refers to a team’s shared judgment on how well team members think they can perform together (Bandura, 1977; Vargas-Tonsing et al., 2003; Zaccaro et al., 1995). Research has shown that players who believed that their coaches were more confident in their teams were more confident in their coach (Watson, et al., 2001).

Vargas-Tonsing et al.’s (2003) study examined the strength of the relationship between coaching efficacy and team efficacy. They identified a relationship between coaching efficacy and player efficacy. In this study, 133 female varsity athletes and coaches from 12 high schools participated. These researchers developed a 7-item questionnaire designed to assess the player’s perception of performing specific skills, as well as their overall performance, in the next scheduled match. These researchers developed a 10-item questionnaire studying team performance in the next scheduled match. Both of the questionnaires were distributed after the middle of the season. The subjects in this study were also asked to complete the CES (Feltz et al., 1999).

The results of the study indicated that coaching efficacy is a significant predictor of team efficacy, but not player efficacy (Vargas-Tonsing et al., 2003). The authors of this research study speculated that it is easier for a player to assess the team’s performance than her own performance. Further, the CES questionnaire focused more on team related coaching competencies rather than individual player competencies. These factors may have influenced the results of the study. When playing team sports, there are
individual positions that may require specific skill coaching. This may account for higher levels of team efficacy than player efficacy. If the athlete strongly believes in the coach's ability to influence the team but not as strongly in their specific position, than there may be different responses regarding efficacy.

According to Vargas-Tonsing et al. (2003), motivation and character building efficacy most effectively predict team efficacy. These authors report that character building efficacy was negatively associated with team efficacy. The more confident coaches were in their abilities to develop qualities such as sportsmanship, the less confident players were in their team's abilities to win. One thought offered by the researchers is that coaches who were more confident in their character building skills stressed other game related elements rather than winning. On the other hand it may be that athletes envisioned winning as the most important end over such qualities as sportsmanship (Vargas-Tonsing et al., 2003). Finally, technique and game strategy efficacy in this study did not appear to influence team or player efficacy.

Short and Short (2004) conducted a study examining player's perceptions of a coach's efficacy as compared to coaches' perceptions of their own efficacy. Nine coaches and 76 players, all from the same football team, were administered the CES (Feltz et al., 1999). The players were presented with a modified version of the CES. Each question was structured to gather information about the athlete's perception of the coach's efficacy.

The results of Short and Short's study indicated that coaches and players perceived the coaches' efficacy in a similar way or fashion (2004). When the statistical
results of the study were compared, athletes perceived the coaches’ efficacy higher than the coaches’ responses. A practical coaching tool may be to teach coaches to act in a manner that exudes confidence when in the presence of athletes (Short & Short, 2004). A caveat, as pointed out by the authors, is that it may be important to appear confident, but not overconfident. If a coach appears confident, the athletes may support their coach; overconfidence may lead to the athletes feeling that the coach is unapproachable or arrogant, which will impact the athletes’ growth (Short & Short, 2004).

Summary

In this chapter, the literature has been divided into three major sections: (a) Section I- Social Cognitive Theory; (b) Section II- Teaching Efficacy; and (c) Section III- Research on Coaching Efficacy, inclusive of research on coaching confidence. The arrangement of three sections provides an outline of coaching efficacy from roots in social cognitive theory, to foundational research conducted in the teaching setting, and then to the development of the specific body of research directly related to the study.

In the first section of the chapter, Bandura's conceptualization of social cognitive theory was delineated (1977). Social cognitive theory is a discussion of human motivations, behaviors, and attitudes within various settings and contexts (Bandura, 1977). As Bandura stated, individuals have various capabilities which help determine actions taken. Self-efficacy is a component of social cognitive theory related to organizing skills in order to execute a course of action required for a specific task (Bandura, 1986; 1997; Maddux, 1995). An individual’s level of self-efficacy is impacted
by magnitude, generality; and strength (Bandura, 1977; 1986; Lent & Hackett, 1987; Maddux, 1995).

In the second section of the literature review, the researcher reviewed the research studies related to teaching efficacy, and a number of significant results were described. Teachers with high levels of efficacy were constantly adjusting their teaching style with confidence that the adjustments would aid in student growth. Complementing the textbook with out-of-class projects, active student involvement through group work, and timely feedback are a few examples of the types of adjustments identified in various studies. Teachers who chose the subjects they taught, developed a background in the subject matter, and enjoyed the subjects they taught experienced higher levels of self-efficacy. Also, teachers who were intrinsically motivated to teach and experienced a lengthy tenure with one school demonstrated higher levels of self-efficacy. Finally, teachers with high levels of self-efficacy created warm, caring classrooms for students, and were concerned with whether the students were reaching their academic potential.

This chapter concluded with a discussion of coaching efficacy and the numerous variables associated with coaching efficacy studies. Feltz et al. (1999) developed the Coaching Efficacy Scale, or CES, as a tool of measurement that is predominantly used throughout studies related to coaching efficacy. Variables such as player/team efficacy, commitment to coaching, the team's win/loss record, number of years coaching, support training/certifications/licensing, and the gender of the coach were analyzed in various studies, providing important data towards understanding coaching efficacy. Results of these research studies indicated that a high level of coaching efficacy was influenced by a
number of these factors, such as: (a) a strong commitment to the coaching position; (b) multiple motivational and corrective feedback techniques; (c) a greater number of wins than losses; (d) support from the community and (e) certifications, training, or licenses related to coaching. Less efficacious coaches were primarily focused on the organizational components of the practice, such as following the timeline for practice. Highly efficacious coaches were primarily concerned with the growth of the players, and if a certain activity during practice ran over the allotted time, they were more flexible. Coaches with high levels of efficacy were more tactically skilled and reported coaching for more years than low efficacy coaches. Finally, coaches with high levels of efficacy had players with high levels of efficacy, and players who were motivated to compete with their teammates.

Players surveyed in the research studies indicated that the perception of their playing ability, as well as whether their coach was the same gender as themselves, influenced their desire to coach in the future. Interestingly, coaches who believed they could develop character-building qualities, such as sportsmanship, with their team had players who were not as confident in their team’s ability to win. This may be due to the fact that the coaches stressed more than just winning with their team, whereas the players felt that winning was the most important thing for the team.
CHAPTER 3
METHODS AND PROCEDURES

This purpose of this study was to analyze the relationship between five independent variables and volunteer soccer coaches' overall coaching efficacy as measured by motivation efficacy, character building efficacy, game strategy efficacy, and technique efficacy and five independent variables. The five independent variables explored included the age of a coach, a coach's gender, previous years of coaching experience, participation in a coaching education/training/licensing program, and previous playing experience. First, the levels of motivation efficacy, character building efficacy, technique efficacy, and game strategy efficacy were calculated. Once those levels were identified, then the overall coaching efficacy level was calculated. The dependent variables in this study were the levels of motivation efficacy, character building efficacy, technique efficacy, game strategy efficacy, and the overall coaching efficacy level.

This chapter explains the research study population and methodology in the following sections: Selection of Participants; Instrumentation; Collection of Data; and Treatment of Data. The Selection of Participants section will address the communities that comprise the Cedar Valley, as well as how the coaches were selected for the study. The Instrumentation section will include: (1) the demographic information, and (2) the Coaching Efficacy Scale, or CES, and the initial study conducted to determine the validity and reliability of the instrument. The Collection of Data section will outline how
the data were obtained from the subjects. The Treatment of Data section will highlight
the various methods of analysis used upon collection of the data.

Selection of Participants

The study involved participants who coached for the Cedar Valley Youth Soccer
Association. The communities associated with the Cedar Valley Youth Soccer
Association include: (a) Aplington, (b) Cedar Falls, (c) Denver, (d) Dike, (e) Dysart, (f)
Gladbrook, (g) Grundy Center, (h) Hudson, (i) Independence, (j) Jesup, (k) LaPorte City,
(l) New Hartford, (m) Parkersburg, (n) Reinbeck, (o) Shell Rock, (p) Traer, (q) Tripoli,
(r) Waterloo, and (s) Waverly. These communities are part of Black Hawk, Bremer,
Buchanan, Butler, Grundy, and Tama counties, located in northeast Iowa.

The teams from each community were compiled in a database organized by the
Cedar Valley Youth Soccer Association administration. Once the registration period
concluded, the researcher was given a list of individuals who were head coaches of teams
of players between the ages of 11-14 and were eligible for participation in the study.
Using this list, the researcher administered the instrument to the coaches at the initial
coaches meetings held in each community prior to the start of the soccer season.

Instrumentation

The first part of the instrument (see Appendix A) used to measure coaching
efficacy was a questionnaire discussing the various sources of information that can affect
a coach's level of efficacy. The data requested in this part included: (a) age; (b) gender;
(c) playing experience, number of years, and level; (d) coaching experience and number
of years coaching; (e) age and gender of youth coached; (g) whether the individual was
the head or assistant coach; and (h) attendance at a coaching clinic or
education/licensing/training session. This part of the instrument was included due to
previous research highlighting the importance of understanding the sources of
information that may influence coaching efficacy (Malete & Feltz, 2000; Weiss, Barber,

The second part of the instrument used to measure coaching efficacy for the study
was developed by Drs. Deborah L. Feltz, Melissa A. Chase, Sandra E. Moritz, and Phillip
J. Sullivan, Department of Kinesiology, Michigan State University (1999). The
instrument is the Coaching Efficacy Scale, or CES (see Appendix B). Alternatively titled
the Coaching Confidence Questionnaire for coaches (Feltz et al., 1999; Lee et al., 2002),
the instrument was initially used to measure coaches' efficacy levels of high school
varsity teams.

designed the Coaching Efficacy Scale (CES) with questions related to measuring
motivation efficacy, character building efficacy, game strategy efficacy, and technique
efficacy. The CES consists of 41 items. In the initial creation of the scale, all of the
items were reviewed by nine scholastic coaches for content validity. All of the items
were evaluated by the coaches as essential components of coaching efficacy. Each
question on the instrument begins with the same stem: "How confident are you in your
ability to..." All items on the questionnaire were scored on a Likert scale from 0 (not at
all confident) to 9 (extremely confident).
Feltz et al. (1999) conducted the research study in two phases. The first phase included designing the Coaching Efficacy Scale and establishing factorial validity through exploratory factor analysis. A study sample (Sample 1) was created by randomly selecting 400 head coaches from high school varsity teams in the Midwest using the State Coaches Directory. The sample selection included equal numbers of male and female coaches. The CES and a demographic questionnaire were mailed to the coaches, and there was a 47% return rate ($N = 189$). Of the respondents, 58% were male, 95% were Caucasian, 93% had completed a bachelor’s degree, and 56% were coaching boys’ teams. The coaches’ age ranged from 21 to 56 years ($M = 37.3, SD = 8.8$) and years coaching from 1 to 32 years ($M = 12.6, SD = 7.7$). The coaches who responded represented (a) basketball (29%), (b) track (13%), (c) volleyball (11%), (d) cross-country (7%), (e) tennis (7%), (f) baseball (7%), (g) football (6%), (h) golf (5%), (i) swimming (5%), (j) softball (4%), (k) soccer (2%), (l) wrestling (2%), and (m) gymnastics (2%).

The results of the exploratory factor analysis indicated that 17 of the items on the CES had factor loadings lower than .50 or had factor loadings higher than .50 for at least two factors. These 17 items were eliminated from the CES, resulting in a 24-item questionnaire. The Cronbach’s alpha coefficients for each of the four factors in the 24-item scale are as follows: (a) Motivation = .90, (b) Character Building = .89, (c) Game Strategy = .87, and (d) Technique = .88. The distribution and percentages of questions related to the four factors within the CES are as follows: (a) Motivation = 7 questions or 29%, (b) Character Building = 4 questions or 17%, (c) Game Strategy = 7 questions or 29%, and (d) Technique = 6 questions or 25%.
The results of the exploratory factor analysis indicated the following means and standard deviations for each of the four factors: (a) Motivation ($M = 7.31$, $SD = 0.93$); (b) Character Building ($M = 8.03$, $SD = 0.73$); (c) Game Strategy ($M = 7.38$, $SD = 1.01$); and (d) Technique ($M = 7.67$, $SD = 0.89$). All of the means were high, which is typical for self-efficacy research conducted in an athletic environment (Feltz & Lirgg, 1998; George, 1994). Coaches who are new or have not been coaching for a number of years may have lower scores, but to remain in the coaching field an individual must have a significant level of confidence in his or her coaching ability.

During the second phase of the research study, the confirmatory factor analysis, the revised 24-item CES was sent to a differently randomly selected sample of 400 head coaches (Sample 2), incorporating the results obtained from the exploratory factor analysis. Using the same selection procedures as Sample 1 (Feltz et al., 1999), the return rate for this study sample was 48% ($N = 195$). An additional 96 questionnaires were obtained from high school coaches attending coaching clinics, raising the total return rate to 291. Of the 291 coaches, 56% were male, 84% were Caucasian, 72% had completed a bachelor's degree, and 42% were coaching boys' teams. The coaches' age ranged from 18 to 65 years ($M = 36.85$, $SD = 9.82$) and years of coaching from 1 to 35 years ($M = 10.12$, $SD = 6.86$). The coaches who responded represented (a) basketball (26%), (b) volleyball (13%), (c) track (11%), (d) football (11%), (e) multiple sports (7%), (f) softball (6%), (g) baseball (6%), (h) tennis (3%), (i) soccer (3%), (j) cheerleading (3%), (k) gymnastics (2%), (l) cross-country (2%), (m) swimming (2%), (n) wrestling (2%), (o) hockey (1%), and (p) golf (1%).
The results of the confirmatory factor analysis indicated that all factor loadings within the scale were significant at \( p < .05 \) (Feltz et al., 1999). Each of the factor loadings were higher than .50 for one factor, indicating that each item was significantly related to one factor. Reliability was assessed through the Cronbach's coefficient alpha and test-retest (Feltz et al., 1999). Test-retest reliability was conducted by administering the CES to a sub-sample of high school coaches \((N = 29)\) who attended high school coaching clinics. These coaches were given the CES, with a one week interval between the tests. The coefficient alphas and test-retest coefficients were acceptable, with the following respective values for each factor: (a) Motivation = .91 and .83, (b) Character Building = .88 and .77, (c) Game Strategy = .88 and .84, and (d) Technique = .89 and .78. The coefficient alpha and test-retest coefficient for overall coaching efficacy were .95 and .82, respectively.

Collection of Data

A number of steps were undertaken in order to collect the data for this research study. First, the researcher communicated with the Board President of the Cedar Valley Youth Soccer Association (CVYSA) seeking permission to distribute the data collection instrument to potential participants. The Board President informed the researcher that board approval was required to collect data from the desired coaching population. The researcher made a presentation at the monthly board meeting of the CVYSA. The presentation included a description of the study, the importance of the research study, the impact of the coaches' involvement, and confidentiality associated with participation in the study. Upon approval by the CVYSA Board, the Institutional Review Board (IRB)
application was completed. Data collection started after the study was approved by the IRB at the coaches’ meetings for each community in the CVYSA league. Nineteen communities held coaches’ meetings. Those communities were: (a) Aplington, (b) Cedar Falls, (c) Denver, (d) Dike, (e) Dysart, (f) Gladbrook, (g) Grundy Center, (h) Hudson, (i) Independence, (j) Jesup, (k) LaPorte City, (l) New Hartford, (m) Parkersburg, (n) Reinbeck, (o) Shell Rock, (p) Traer, (q) Tripoli, (r) Waterloo, and (s) Waverly. When multiple coaches’ meetings occurred at the same time, trained graduate students assisted in the data collection. The primary researcher trained the graduate students prior to attending the coaches’ meetings regarding the protocol associated with collection of data. Each graduate student also completed the Human Participants Protection Education for Research Teams online course, sponsored by the National Institutes of Health (NIH), prior to collecting data.

At the coaches’ meetings, the researcher or graduate student briefly explained the research study (see Appendix C). Once the explanation was complete, the participants were provided with a consent form (see Appendix D). Participation was voluntary, and the coaches could decline to participate if they desired. Each coach was provided a copy of the consent form to keep in case there were questions regarding the study. After signing the consent form and returning it to the researcher or graduate student, the coaches received the data collection instrument to complete. The average time for completing the instrument was 10 minutes. Once the study participants completed the instrument, they returned it to the researcher or graduate student. After the coaches’ meetings were concluded, the researcher collected and secured all the data collection
instruments and consent forms associated with the participants from graduate students who assisted in the data collection.

**Treatment of Data**

The following methods of analysis were utilized regarding the data received in this study. First, a descriptive analysis, frequencies, percentages, and mean scores were derived from the demographic information as well as the four dimensions of coaching efficacy obtained from the sample coaches within the Cedar Valley. Second, the Cronbach's alpha coefficients were calculated to determine the reliability of the indices of motivation efficacy, character building efficacy, game strategy efficacy, and technique efficacy. Third, Pearson's correlation coefficients were calculated for age, previous playing experience, coaching experience, and attendance at an educational/licensing/certification session to examine relationships between these variables and motivation efficacy, character building efficacy, game strategy efficacy, and technique efficacy. Fourth, parametric independent t-tests were conducted for gender, previous playing experience, and coaching experience to see if there were differences among these variables and their influence on motivation efficacy, character building efficacy, game strategy efficacy, and technique efficacy. Finally, stepwise multiple linear regression analyses were conducted to test the hypothesis that there was no relationship between an individual's overall coaching efficacy level and his or her age, education/training/licensing, experience as a soccer player, gender, and previous coaching experience. The regression analyses were conducted to determine which
variables best predict overall coaching efficacy, utilizing the CES as the measurement for the dependent variable (Vogt, 1999).
The purpose of this study was to analyze the relationship between five independent variables and volunteer soccer coaches' overall coaching efficacy as measured by the interaction between motivation efficacy, character building efficacy, game strategy efficacy, and technique efficacy and five independent variables. The five variables explored included the age of a coach, a coach's gender, previous years of coaching experience, participation in a coaching education/training/licensing program, and previous playing experience. These variables were analyzed in order to identify the impact on motivation efficacy, character building efficacy, game strategy efficacy, and technique efficacy. Once those four levels of efficacy were established, the overall level of coaching efficacy was calculated for each participant.

The results of this study are presented in this chapter. The percentage of questionnaires completed and returned is initially reported. Next, is a presentation and discussion of the demographic variables associated with this study. Descriptive statistics were conducted to aid in the interpretation of the sample. These statistics included: (a) mean age, (b) median age, (c) age range, (d) previous levels of coaching experience, (e) previous levels of playing experience, and (f) attendance at a coaching education/training/licensing session. Following is a report of the Cronbach's alpha coefficients that were calculated to determine the reliability of the indices of motivation efficacy, character building efficacy, game strategy efficacy, and technique efficacy. This is followed by a report of the Pearson's correlation coefficients that were calculated
for age, previous playing experience, coaching experience, and attendance at a coaching 
education/training/licensing session to examine relationships between these variables and 
motivation efficacy, character building efficacy, game strategy efficacy, and technique 
efficacy. The results of parametric independent t-tests are reported using gender, 
previous playing experience, and coaching experience to see if there were differences 
with these variables and their influence on motivation efficacy, character building 
efficacy, game strategy efficacy, and technique efficacy. Also included are the findings 
of the stepwise multiple linear regression analyses calculated to determine if the five 
independent variables impacted the motivation efficacy, character building efficacy, 
game strategy efficacy, and technique efficacy of each coach. The multiple linear 
regressions also defined the impact of the five independent variables on the overall level 
of coaching efficacy in each coach, and these findings are included in this chapter.

Data Collection

There were 91 coaches of youth ages 11-14 within the Cedar Valley Youth Soccer 
Association that could potentially complete the questionnaire. After distribution and 
collection of the questionnaires during the coaches’ meetings in the communities that 
comprise the Cedar Valley Youth Soccer Association, 69 individual coaches completed 
the questionnaires, providing a return rate of 76%.

Descriptive Statistics

As illustrated in Table 2, there were 42 male (60.9%) and 27 female (39.1%) 
respondents that completed the questionnaire. There were 91 coaches within the Cedar 
Valley Youth Soccer Association coaching youth between the ages of 11-14.
Table 2. Number of Male and Female Coaches

<table>
<thead>
<tr>
<th>Gender</th>
<th>Number of Coaches</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>42</td>
<td>60.9%</td>
</tr>
<tr>
<td>Female</td>
<td>27</td>
<td>39.1%</td>
</tr>
</tbody>
</table>

Table 3 outlines the ages of the respondents who completed the questionnaire. The mean age of respondents was 42.38 years. The coaches' ages ranged from 31 years old to 57 years old. The median age reported was 42 years.

Table 3. Ages of Coaches

<table>
<thead>
<tr>
<th>Ages of Coaches</th>
<th>Number of Coaches</th>
<th>Mean Age of Coaches</th>
<th>Overall Percentage of Coaches</th>
</tr>
</thead>
<tbody>
<tr>
<td>30-39 years</td>
<td>21</td>
<td>36.5 years</td>
<td>30.4%</td>
</tr>
<tr>
<td>40-49 years</td>
<td>41</td>
<td>43.6 years</td>
<td>59.4%</td>
</tr>
<tr>
<td>50-59 years</td>
<td>7</td>
<td>53 years</td>
<td>10.2%</td>
</tr>
</tbody>
</table>

Fifty-four coaches (78%) reported that they currently held the position of the head coach of their team. In addition, 85.5% of the respondents in the study reported that they had previously coached soccer. Forty-nine respondents (71%) with previous coaching experience had served as the head coach of their former team. As indicated in Table 4, previous coaching experience included: (a) coaching boys at the recreational club level (54%; \( n = 37 \)); (b) coaching girls at the recreational club level (64%; \( n = 44 \)); (c) coaching boys at the competitive club level (7.2%; \( n = 5 \)); (d) coaching girls at the competitive club level (8.7%; \( n = 6 \)); and (e) coaching girls at the high school level (2.9%; \( n = 2 \)). There were no respondents with previous coaching experience at the collegiate or professional levels.
Eighteen respondents (26%) indicated having previous soccer playing experience, while 51 of the respondents (74%) did not have previous soccer playing experience. As illustrated in Table 5, previous soccer playing experience included: (a) recreational club experience, ranging from 1 year to 35 years (50%; $n = 9$), (b) competitive club experience, ranging from 1 year to 10 years (17%; $n = 3$), (c) high school experience, ranging from 3 years to 4 years (11%; $n = 2$), and (d) college experience, ranging from 2 years to 4 years (22%; $n = 4$). There were no respondents with previous professional playing experience.

As indicated in Table 6, forty-seven respondents (68.1%) reported attending a previous coaching clinic, educational session, or training/licensing session, while 22 respondents (32.9%) reported having never attended any type of coaching education, training, or licensing session.
Table 5. *Previous Playing Experience*

<table>
<thead>
<tr>
<th>Level of Playing Experience</th>
<th>Percentage of Respondents' Playing Experience</th>
<th>Range of Years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recreation Club</td>
<td>50%</td>
<td>1-35 years</td>
</tr>
<tr>
<td>Competitive Club</td>
<td>17%</td>
<td>1-10 years</td>
</tr>
<tr>
<td>High School</td>
<td>11%</td>
<td>3-4 years</td>
</tr>
<tr>
<td>College</td>
<td>22%</td>
<td>2-4 years</td>
</tr>
</tbody>
</table>

Table 6. *Respondents who previously attended a coaching education/training/licensing session*

<table>
<thead>
<tr>
<th>Previous attendance at a coaching education/training/licensing session</th>
<th>Percentage of Respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>68.1%</td>
</tr>
<tr>
<td>No</td>
<td>32.9%</td>
</tr>
</tbody>
</table>

In order to calculate the total score for motivation efficacy (ME), character building efficacy (CBE), game strategy efficacy (GSE), and technique efficacy (TE), subscales of questions were constructed. Each subscale includes questions that were associated with one of the four components of coaching efficacy. These subscales of questions were constructed through exploratory factor analysis and confirmatory factor analysis during Feltz et al.’s (1999) study. The combination of questions to create a subscale allows the researcher to analyze more than one question related to a component of coaching efficacy and to see a respondent’s thoughts related to a particular situation. The subscales for each respondent’s questionnaire were compiled, and the sum of the questions for motivation efficacy, character building efficacy, game strategy efficacy, and technique efficacy were calculated. The respondents’ mean scores for all four dimensions of coaching efficacy indicated high levels of efficacy. These calculations were incorporated into further data analysis. The subscales of questions, mean scores,
and standard deviations for motivation efficacy, character building efficacy, game strategy efficacy, and technique efficacy are displayed in Tables 7-10.

Table 7. *Subscale for Motivation Efficacy (ME)*

<table>
<thead>
<tr>
<th>Question</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Question 9 - maintain confidence of the players?</td>
<td>6.64</td>
<td>1.22</td>
</tr>
<tr>
<td>Question 11 - mentally prepare players for game strategies?</td>
<td>6.22</td>
<td>1.46</td>
</tr>
<tr>
<td>Question 14 - build the self-esteem of players?</td>
<td>7.61</td>
<td>1.05</td>
</tr>
<tr>
<td>Question 18 - motivate the players?</td>
<td>7.35</td>
<td>1.19</td>
</tr>
<tr>
<td>Question 20 - build the togetherness on the team?</td>
<td>7.14</td>
<td>1.12</td>
</tr>
<tr>
<td>Question 23 - build the self-confidence of the players?</td>
<td>7.12</td>
<td>1.11</td>
</tr>
<tr>
<td>Question 31 - build team confidence?</td>
<td>7.39</td>
<td>1.11</td>
</tr>
</tbody>
</table>

Table 8. *Subscale for Character Building Efficacy (CBE)*

<table>
<thead>
<tr>
<th>Question</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Question 13 - instill an attitude of being good sports?</td>
<td>7.87</td>
<td>1.03</td>
</tr>
<tr>
<td>Question 21 - instill an attitude of “fair play” among athletes?</td>
<td>7.70</td>
<td>1.02</td>
</tr>
<tr>
<td>Question 27 - promote good sportsmanship?</td>
<td>8.06</td>
<td>.96</td>
</tr>
<tr>
<td>Question 32 - instill an attitude of respect for other players?</td>
<td>7.80</td>
<td>.94</td>
</tr>
</tbody>
</table>

Table 9. *Subscale for Game Strategy Efficacy (GSE)*

<table>
<thead>
<tr>
<th>Question</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Question 10 - recognize opposing teams’ strengths?</td>
<td>6.41</td>
<td>1.49</td>
</tr>
<tr>
<td>Question 12 - understand competitive strategies?</td>
<td>5.87</td>
<td>1.62</td>
</tr>
<tr>
<td>Question 16 - adapt to different game situations?</td>
<td>5.99</td>
<td>1.33</td>
</tr>
<tr>
<td>Question 17 - recognize opposing teams’ weaknesses?</td>
<td>6.65</td>
<td>1.21</td>
</tr>
<tr>
<td>Question 19 - make critical decisions during games?</td>
<td>6.71</td>
<td>1.09</td>
</tr>
<tr>
<td>Question 25 - maximize your teams’ strengths?</td>
<td>6.88</td>
<td>1.11</td>
</tr>
<tr>
<td>Question 29 - adjust your game strategy to fit your teams’ talent?</td>
<td>6.78</td>
<td>1.33</td>
</tr>
</tbody>
</table>

Table 10. *Subscale for Technique Efficacy (TE)*

<table>
<thead>
<tr>
<th>Question</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Question 15 - demonstrate the skills of soccer?</td>
<td>5.86</td>
<td>1.57</td>
</tr>
<tr>
<td>Question 22 - coach individual players on techniques of soccer?</td>
<td>6.42</td>
<td>1.58</td>
</tr>
<tr>
<td>Question 24 - develop the players’ abilities?</td>
<td>6.30</td>
<td>1.28</td>
</tr>
<tr>
<td>Question 26 - recognize talent in athletes?</td>
<td>7.58</td>
<td>.99</td>
</tr>
<tr>
<td>Question 28 - detect skill errors of the players?</td>
<td>6.38</td>
<td>1.37</td>
</tr>
<tr>
<td>Question 30 - teach the skills of soccer?</td>
<td>6.20</td>
<td>1.38</td>
</tr>
</tbody>
</table>
The Cronbach's alpha level was calculated to determine the reliability of each index of questions. The Cronbach's alpha level for motivation efficacy was .90. The range of responses for motivation efficacy was a low of 2 to a high of 9, with a mean score of 7.07 and a standard deviation of 1.18. The Cronbach's alpha level for character building efficacy was .92. The range of responses for character building efficacy was a low of 5 to a high of 9, with a mean score of 7.85 and a standard deviation of 1.01. The Cronbach's alpha level for game strategy efficacy was .90. The range of responses for game strategy efficacy was a low of 1 to a high of 9, with a mean score of 6.47 and a standard deviation of 1.31. The Cronbach's alpha level for technique efficacy was .89. The range of responses for technique efficacy was a low of 2 to a high of 9, with a mean score of 6.46 and a standard deviation of 1.36. The Cronbach's alpha levels identified in this study for the subscales were equivalent to the Cronbach's alpha levels found in Feltz et al.'s study (1999). The Cronbach's alpha levels, range of responses, mean scores, and standard deviation values for motivation efficacy, character building efficacy, game strategy efficacy, and technique efficacy are illustrated in Table 11.

<table>
<thead>
<tr>
<th>Subscale</th>
<th>Cronbach's alpha level</th>
<th>Range of responses</th>
<th>Number of Questions</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Motivation Efficacy</td>
<td>.90</td>
<td>2-9</td>
<td>7</td>
<td>7.07</td>
<td>1.18</td>
</tr>
<tr>
<td>Character Building Efficacy</td>
<td>.92</td>
<td>5-9</td>
<td>4</td>
<td>7.85</td>
<td>1.01</td>
</tr>
<tr>
<td>Game Strategy Efficacy</td>
<td>.90</td>
<td>1-9</td>
<td>7</td>
<td>6.47</td>
<td>1.31</td>
</tr>
<tr>
<td>Technique Efficacy</td>
<td>.89</td>
<td>2-9</td>
<td>6</td>
<td>6.46</td>
<td>1.36</td>
</tr>
</tbody>
</table>
Included in the demographic portion of the data collection instrument were opportunities for respondents to indicate the amount of previous experience playing and coaching soccer. Each respondent with previous coaching or playing experience indicated the number of years spent playing or coaching, and the highest level achieved. Data recoding was transformed in order to utilize correlation and regression statistics. The following variables were recoded: male = 0, female = 1; previous coaching experience - Yes = 0, No = 1; previous attendance at a coaching education/licensing/training session - Yes = 0, No = 1. In addition, a number of variables were computed due to the low frequencies within the question response categories. For example, respondents were asked if they coached at the recreational club, competitive club, high school, college and/or professional levels. Nearly all respondents reported coaching at the recreational club level. Therefore a new variable was computed to reflect coaching experience. The same procedure was used to compute the number of years coaching, and the number of years of playing experience.

Pearson's correlation coefficients were calculated for age, previous playing experience, coaching experience, and attendance at a coaching education/training/licensing session to examine relationships between these variables and motivation efficacy, character building efficacy, game strategy efficacy, and technique efficacy. Three significant relationships were identified after the data analysis. First, a weak negative correlation was found \( r(67) = -0.265, p < .05 \), indicating a significant linear relationship between attendance at a coaching education/training/licensing session and the age of a coach. Respondents who had attended a coaching
education/training/licensing session tended to be younger. This result supports Fung’s (2002) assessment regarding age of participants in coaching education/licensing/training sessions. Second, a moderately strong positive correlation was found ($r(67) = .467, p < .001$), indicating a significant linear relationship between attendance at a coaching education/training/licensing session and previous coaching experience. A respondent who had attended a coaching education/training/licensing session usually had previous coaching experience. There were no previous studies which looked at the correlation between attendance at a coaching education/training/licensing session and previous coaching experience. Third, a weak correlation was found ($r(67) = -.255, p < .05$), indicating a significant linear relationship between technique efficacy and previous playing experience. If a respondent had previous playing experience, their technique efficacy level was higher. There were no previous studies which looked at previous playing experience and the impact on technique efficacy. The statistical significance of the Pearson’s correlation coefficients differ from the results of Feltz et al.’s (1999) study, which found significant relationships between coaching experience and game strategy, as well as coaching experience and motivation efficacy. Table 12 highlights the Pearson’s correlation coefficient values (the variable “Attendance at a coaching education/training/licensing Session” has been labeled “Attendance at an Educational Session”).
Table 12. **Correlations of Independent Variables**

<table>
<thead>
<tr>
<th></th>
<th>Age of Coach</th>
<th>Previous Playing Experience</th>
<th>Previous Coaching Experience</th>
<th>Attendance at an Educational Session</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age of Coach</td>
<td>1</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>Previous Playing</td>
<td>-.130</td>
<td>1</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>Experience</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Previous Coaching</td>
<td>-.074</td>
<td>-.064</td>
<td>1</td>
<td>---</td>
</tr>
<tr>
<td>Experience</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Attendance at an</td>
<td>-.265*</td>
<td>-.178</td>
<td>.467**</td>
<td>1</td>
</tr>
<tr>
<td>Educational Session</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Motivation Efficacy</td>
<td>-.003</td>
<td>-.014</td>
<td>.100</td>
<td>-.115</td>
</tr>
<tr>
<td>Character Building</td>
<td>-.103</td>
<td>-.043</td>
<td>.199</td>
<td>.112</td>
</tr>
<tr>
<td>Efficacy</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Game Strategy Efficacy</td>
<td>.065</td>
<td>-.076</td>
<td>.152</td>
<td>.096</td>
</tr>
<tr>
<td>Technique Efficacy</td>
<td>-.118</td>
<td>-.255*</td>
<td>.085</td>
<td>.102</td>
</tr>
</tbody>
</table>

*Note. *p < .05, **p < .001

Independent samples t-tests were conducted using gender, previous playing experience, and coaching experience as the dependent variables. These analyses were conducted to determine the influence of these variables on motivation efficacy, character building efficacy, game strategy efficacy, and technique efficacy. The comparison of mean scores between male and female respondents related to motivation efficacy did not indicate a significant difference ($t(67) = -.428, p > .05$). The mean scores of male respondents were not significantly different than the mean scores of female respondents. This result differs from the previous research conducted by Marback et al. (2005). The comparison of mean scores between male and female respondents related to character building efficacy did not indicate a significant difference ($t(67) = .161, p > .05$). The mean scores of male respondents related to character building efficacy were not significantly different than the mean scores of female respondents. This result differs from the previous research conducted by Marback et al. (2005). The comparison of mean scores between male and female respondents related to game strategy efficacy indicated a
significant difference ($t(67) = 2.77, .007 < .05$). For game strategy efficacy, the mean scores of male respondents were significantly higher ($M = 47.17, SD = 5.82$) than the mean scores of female respondents ($M = 42.37, SD = 8.55$). This result supports the previous research conducted by Marback et al. (2005). The comparison of mean scores between male and female respondents related to technique efficacy did not indicate a significant difference ($t(67) = 1.85, p > .05$). For technique efficacy, the mean scores of male respondents were not significantly different than the mean of female respondents. This result differs from previous research conducted by Barber (1998), but supports research conducted by Marback et al. (2005).

The comparison of mean scores between respondents with previous playing experience and respondents without previous playing experience related to motivation efficacy did not indicate a significant difference ($t(67) = .117, p > .05$). The mean scores of respondents with previous playing experience were not significantly different than the mean scores of respondents without previous playing experience. The comparison of mean scores between respondents with previous playing experience and respondents without previous playing experience related to character building efficacy did not indicate a significant difference ($t(67) = .350, p > .05$). The mean scores of respondents with previous playing experience were not significantly different than the mean scores of respondents without previous playing experience. The comparison of mean scores between respondents with previous playing experience and those without previous playing experience related to game strategy efficacy did not indicate a significant difference ($t(67) = .625, p > .05$). The mean scores of respondents with previous playing
experience were not significantly different than the mean scores of respondents without previous playing experience. The comparison of mean scores between respondents with previous playing experience and those without previous playing experience related to technique efficacy did indicate a significant difference ($t(67) = 2.16, p < .05$). The mean scores of respondents with previous playing experience were significantly different than the mean scores of those without previous playing experience. Those respondents with previous playing experience had higher scores related to technique efficacy than those without previous playing experience.

The comparison of mean scores between respondents with previous coaching experience and respondents without previous coaching experience related to motivation efficacy did not indicate a significant difference ($t(67) = -.677, p > .05$). The mean scores of respondents with previous coaching experience were not significantly different than the mean scores of respondents without previous coaching experience. The comparison of mean scores between respondents with previous coaching experience and those without previous coaching experience related to character building efficacy did not indicate a significant difference ($t(67) = -1.39, p > .05$). The mean scores of respondents with previous coaching experience were not significantly different than the mean scores of those without previous coaching experience. The comparison of mean scores between respondents with previous coaching experience and those without previous coaching experience related to game strategy efficacy did not indicate a significant difference ($t(67) = -.677, p > .05$). The mean scores of respondents with previous coaching experience were not significantly different than the mean scores of those without
previous coaching experience. The comparison of mean scores between respondents with previous coaching experience and those without previous coaching experience related to technique efficacy did not indicate a significant difference ($t(67) = -.043, p > .05$). The mean scores of respondents with previous coaching experience were not significantly different than the mean scores of those without previous coaching experience. The results of the independent samples t-test are illustrated in Tables 13-15.

**Table 13. Gender as the Independent Variable**

<table>
<thead>
<tr>
<th>Subscale</th>
<th>T value</th>
<th>Df</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Motivation Efficacy</td>
<td>-.428</td>
<td>67</td>
<td>.670</td>
</tr>
<tr>
<td>Character Building</td>
<td>.161</td>
<td>67</td>
<td>.143</td>
</tr>
<tr>
<td>Efficacy</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Game Strategy Efficacy</td>
<td>2.76</td>
<td>67</td>
<td>* .007</td>
</tr>
<tr>
<td>Technique Efficacy</td>
<td>1.85</td>
<td>67</td>
<td>.070</td>
</tr>
</tbody>
</table>

*Note. *p < .05

**Table 14. Previous Playing Experience as the Independent Variable**

<table>
<thead>
<tr>
<th>Subscale</th>
<th>T value</th>
<th>Df</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Motivation Efficacy</td>
<td>.117</td>
<td>67</td>
<td>.907</td>
</tr>
<tr>
<td>Character Building</td>
<td>.350</td>
<td>67</td>
<td>.728</td>
</tr>
<tr>
<td>Efficacy</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Game Strategy Efficacy</td>
<td>.625</td>
<td>67</td>
<td>.534</td>
</tr>
<tr>
<td>Technique Efficacy</td>
<td>2.16</td>
<td>67</td>
<td>*.034</td>
</tr>
</tbody>
</table>

*Note. *p < .05

**Table 15. Previous Coaching Experience as the Independent Variable**

<table>
<thead>
<tr>
<th>Subscale</th>
<th>T value</th>
<th>Df</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Motivation Efficacy</td>
<td>-.304</td>
<td>67</td>
<td>.762</td>
</tr>
<tr>
<td>Character Building</td>
<td>-1.39</td>
<td>67</td>
<td>.170</td>
</tr>
<tr>
<td>Efficacy</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Game Strategy Efficacy</td>
<td>-.677</td>
<td>67</td>
<td>.501</td>
</tr>
<tr>
<td>Technique Efficacy</td>
<td>-.043</td>
<td>67</td>
<td>.966</td>
</tr>
</tbody>
</table>

*Note. *p < .05
Five stepwise multiple linear regression analyses were conducted to determine the impact of the independent variables on motivation efficacy, character building efficacy, game strategy efficacy, technique efficacy and overall coaching efficacy. A multiple linear regression also defined the impact of the independent variables on the overall level of coaching efficacy of this sample. A multiple linear regression was calculated predicting a respondent's level of motivation efficacy based on age, gender, previous coaching experience, previous playing experience, and attendance at a coaching education/training/licensing session. The regression equation was not significant \( (F(5,63) = 0.645, p > .05, R^2 \text{ of .049}) \). A combination of age, gender, previous coaching experience, previous playing experience, and attendance at a coaching education/training/licensing session did not significantly predict motivation efficacy.

A multiple linear regression was calculated predicting a respondent's level of character building efficacy based on age, gender, previous coaching experience, previous playing experience, and attendance at a coaching education/training/licensing session. The regression equation was not significant \( (F(5,63) = 0.661, p > .05, R^2 \text{ of .05}) \). A combination of age, gender, previous coaching experience, previous playing experience, and attendance at a coaching education/training/licensing session did not significantly predict character building efficacy.

In addition, a multiple linear regression was calculated predicting a respondent's level of game strategy efficacy based on age, gender, previous coaching experience, previous playing experience, and attendance at a coaching education/training/licensing session. The regression equation was not significant \( (F(5,63) = 1.71, p > .05, R^2 \text{ of .12}) \).
A combination of age, gender, previous coaching experience, previous playing experience, and attendance at a coaching education/training/licensing session did not significantly predict game strategy efficacy.

Further, a multiple linear regression was calculated predicting a respondent’s level of technique efficacy based on age, gender, previous coaching experience, previous playing experience, and attendance at a coaching education/training/licensing session. The regression equation was not significant \( (F(5,63) = 2.12, p > .05, R^2 \text{ of } .144) \). A combination of age, gender, previous coaching experience, previous playing experience, and attendance at a coaching education/training/licensing session did not significantly predict technique efficacy.

Lastly, a multiple linear regression was calculated predicting a respondent’s overall level of efficacy based on age, gender, previous coaching experience, previous playing experience, and attendance at a coaching education/training/licensing session. The regression equation was not significant \( (F(5,63) = .964, p > .05, R^2 \text{ of } .071) \). A combination of age, gender, previous coaching experience, previous playing experience, and attendance at a coaching education/training/licensing session did not significantly predict the overall level of coaching efficacy. Table 16 displays the results of the linear regression analyses for motivation efficacy, character building efficacy, game strategy efficacy, technique efficacy, and overall coaching efficacy.
<table>
<thead>
<tr>
<th>Component of Coaching Efficacy</th>
<th>$R^2$</th>
<th>Df</th>
<th>$F$</th>
<th>$p$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Motivation Efficacy</td>
<td>.049</td>
<td>5</td>
<td>0.645</td>
<td>.666</td>
</tr>
<tr>
<td>Character Building Efficacy</td>
<td>.050</td>
<td>5</td>
<td>0.661</td>
<td>.655</td>
</tr>
<tr>
<td>Game Strategy Efficacy</td>
<td>.119</td>
<td>5</td>
<td>1.71</td>
<td>.146</td>
</tr>
<tr>
<td>Technique Efficacy</td>
<td>.144</td>
<td>5</td>
<td>2.12</td>
<td>.074</td>
</tr>
<tr>
<td>Overall Coaching Efficacy</td>
<td>.071</td>
<td>5</td>
<td>0.964</td>
<td>.447</td>
</tr>
</tbody>
</table>
CHAPTER 5
SUMMARY AND RECOMMENDATIONS

The purpose of this study was to analyze the relationship between volunteer soccer coaches’ overall coaching efficacy as measured by the interaction between motivation efficacy, character building efficacy, game strategy efficacy, and technique efficacy and five independent variables. The five independent variables explored included the age of a coach, a coach’s gender, previous years of coaching experience, participation in a coaching education/training/licensing program, and previous playing experience. The variables were analyzed in order to identify the impact on motivation efficacy, character building efficacy, game strategy efficacy, and technique efficacy. Once those four levels of efficacy were established, the overall level of coaching efficacy was calculated for each participant.

This chapter begins with a summary of the results of the study, including the impact of the five independent variables on the four dimensions of coaching efficacy as well as the overall coaching efficacy. Following will be a discussion of the implications associated with the results of the study. The chapter will conclude with recommendations for further studies analyzing coaching efficacy involving coaches of youth between the ages of 11-14.

Summary of Results

There were 91 soccer coaches of youth between the ages of 11-14 within the Cedar Valley Youth Soccer Association. Of the 91 coaches available, 69 coaches volunteered to complete the questionnaire, with 42 male (60.9%) and 27 female (39.1%)
respondents participating in the study. The mean age of respondents was 42.38 years. The respondents' ages ranged from 31 years old to 57 years old. The median age reported was 42 years. Fifty-four (54) coaches reported they currently held the position of head coach of their team, and 60 of the respondents had coached soccer before. Forty-nine (49) respondents with previous coaching experience served as the head coach of their former team. Eighteen (18) respondents had previous soccer playing experience, while 51 respondents did not have previous soccer playing experience. Forty-seven respondents had attended a coaching clinic, educational session, or training/licensing session, while 22 respondents had not attended any type of coaching education, licensing, or certification session.

The Cronbach’s alpha level was calculated to determine the reliability of each subscale of questions. The Cronbach’s alpha levels for all four subscales of questions were between .894 and .922. These results indicate that the subscales of questions for motivation efficacy, character building efficacy, game strategy efficacy, and technique efficacy are highly reliable for this study, supporting previous research by Feltz et al. (1999).

Three different forms of data analysis were conducted to examine the relationship between the five independent variables and the four dimensions of coaching efficacy. Pearson’s correlation coefficients were calculated for age, previous playing experience, coaching experience, and attendance at a coaching education/training/licensing session to examine relationships between these variables and motivation efficacy, character building efficacy, game strategy efficacy, and technique efficacy. Three (3) significant
relationships were identified following the data analysis. First, a weak negative correlation was found between attendance at a coaching training/licensing/certification session and the age of a coach. Respondents who had attended a coaching education/training/licensing session tend to be younger. Second, a moderately strong positive correlation was found between attendance at a coaching education/training/licensing session and previous coaching experience. A respondent who had attended a coaching education/training/licensing session usually had previous coaching experience. Third, a weak correlation was found between technique efficacy and previous playing experience. The higher a respondent’s technique efficacy level the more likely he or she had experience playing soccer. Table 17 outlines the significant findings of the Pearson’s correlation coefficients.

<table>
<thead>
<tr>
<th>Correlation</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attendance at an education/training/licensing session and age</td>
<td>r(67) = -0.265, p &lt; .05</td>
</tr>
<tr>
<td>Attendance at an education/training/licensing session and previous coaching experience</td>
<td>r(67) = 0.467, p &lt; .05</td>
</tr>
<tr>
<td>Previous playing experience and technique efficacy (TE)</td>
<td>r(67) = -0.255, p &lt; .05</td>
</tr>
</tbody>
</table>

Independent samples t-tests were conducted using gender, previous playing experience, and coaching experience as the independent variables to see if there were differences with these variables and their influence on motivation efficacy, character building efficacy, game strategy efficacy, and technique efficacy. The comparison of mean scores between male and female respondents related to motivation efficacy did not indicate a significant difference. The comparison of mean scores between male and
female respondents related to character building efficacy did not indicate a significant difference. The comparison of mean scores between male and female respondents related to game strategy efficacy indicated a significant difference; the mean of male respondents was significantly higher than the mean of female respondents. The comparison of mean scores between male and female respondents related to technique efficacy did not indicate a significant difference.

The comparison of mean scores between respondents with previous playing experience and those without previous playing experience related to motivation efficacy did not indicate a significant difference. The comparison of mean scores between respondents with previous playing experience and those without previous playing experience related to character building efficacy did not indicate a significant difference. The comparison of mean scores between respondents with previous playing experience and those without previous playing experience related to game strategy efficacy did not indicate a significant difference. The comparison of mean scores between respondents with previous playing experience and those without previous playing experience related to technique efficacy did indicate a significant difference. The mean scores of respondents with previous playing experience were significantly different than the mean scores of those without previous playing experience.

The comparison of mean scores between respondents with previous coaching experience and respondents without previous coaching experience related to motivation efficacy did not indicate a significant difference. The comparison of mean scores between respondents with previous coaching experience and those without previous
coaching experience related to character building efficacy did not indicate a significant difference. The comparison of mean scores between respondents with previous coaching experience and those without previous coaching experience related to game strategy efficacy did not indicate a significant difference. The comparison of mean scores between respondents with previous coaching experience and those without previous coaching experience related to technique efficacy did not indicate a significant difference. Table 18 highlights the significant results of the independent samples t-tests.

Table 18. Independent samples t-tests results

<table>
<thead>
<tr>
<th>Variables</th>
<th>Significant results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender and game strategy efficacy</td>
<td>T(67) = 2.77, p &lt; .05</td>
</tr>
<tr>
<td>Previous playing experience and technique efficacy (TE)</td>
<td>T(67) = 2.16, p &lt; .05</td>
</tr>
</tbody>
</table>

Stepwise multiple linear regression analyses were conducted to determine the impact of the independent variables on motivation efficacy, character building efficacy, game strategy efficacy, and technique efficacy. A multiple linear regression also defined the impact of the independent variables on the overall level of coaching efficacy of each coach. No significant results were found from the regression analyses used to predict the levels of motivation efficacy, character building efficacy, game strategy efficacy, technique efficacy, and overall coaching efficacy. This indicated that a combination of age, gender, previous coaching experience, previous playing experience, and attendance at a coaching education/training/licensing session can not be used to predict motivation efficacy, character building efficacy, game strategy efficacy, technique efficacy, or overall coaching efficacy. These results support four of the five null hypotheses outlined
in Chapter 1. The null hypothesis that stated age, gender, previous coaching experience, previous playing experience, and attendance at a coaching education/training/licensing session can not be used to predict technique efficacy was rejected due to the significant relationship between previous playing experience and technique efficacy.

Discussion and Implications

The results of this study involve a number of important points associated with the relationships between gender, age, previous coaching experience, previous playing experience, and attendance at a coaching education/training/licensing session and motivation efficacy, character building efficacy, game strategy efficacy, technique efficacy, and overall coaching efficacy. These points are discussed below, as well as how they could have been achieved by the respondents involved in the study.

Relationship between previous attendance at a coaching education/training/licensing session and age. It was calculated that respondents who had attended a coaching education/training/licensing session tend to be younger. Individuals who become coaches are being encouraged to participate in coaching education/training/licensing sessions for a variety of reasons. Soccer associations such as the Cedar Valley Youth Soccer Association deem it necessary for a coach to go through an informal training session on the rules of the game, coaching points, and other fundamental components of coaching in order to lead a team. This session is usually conducted by an administrative member of the Cedar Valley Youth Soccer Association; the administrator has coached before and can demonstrate the necessary skills when coaching during a season. Coaches who are older may have been able to coach a team without going through a coaching
session due to the fact that the soccer association may not have previously recognized the importance of the preliminary coaching session; now each coach must participate in a coaching session. Furthermore, in many of the coaching education/training/licensing sessions, the coaches need to be able to demonstrate skills and play soccer. These sessions may include playing for a number of hours in a day or during multiple weekends. Younger coaches may have more confidence in their abilities to participate and perform the necessary skills in the coaching session more so than the older coaches. This does not mean the younger participant is a better player; older participants may not have confidence in their abilities, endurance, or stamina to complete a coaching education/licensing/certification session, so they do not participate. Previous research has indicated that personal variables influence individuals' levels of self-efficacy (Bar-Tal, 1978; Denham & Michael, 1981; Feather, 1969; Hackett & Betz, 1995; Noad, 1979; Weiner, 1976).

Individuals just starting their coaching career may also be encouraged to participate in coaching education/training/licensing sessions by their former coaches or other adults. This type of encouragement is highlighted by Fung (2002) as a factor which positively impacts coaching efficacy. These younger individuals may have a former coach or adult who serves as their mentor, providing them with advice and guidance. A novice coach who shadows an experienced coach, and receives guidance and advice from the experienced coach, has a valuable source for information that can impact coaching efficacy (Choi et al., 2005; Fuller et al., 1982; Hawley & Rosenholtz, 1984). Denham and Michael (1981) also noted that the guidance and advice given to beginning teachers
from experienced teachers is integral as the beginning teacher embarks on their professional career. Even though the age range of the respondents in the study was from 31-57 years old, some of the younger respondents may have participated in a coaching education/training/licensing session prior to participation in this study due to the encouragement of their former coach or mentor. The combination of confidence in their physical abilities and effective encouragement by guiding adults may be why younger respondents participated in coaching education/training/licensing sessions more than older respondents in this study. Previous research has shown if individuals who are guiding youth, such as teachers and coaches, are intrinsically motivated to attend education/training/licensing sessions, it will positively impact their levels of self-efficacy (Berman et al., 1977; McLaughlin & Marsh, 1978).

Relationship between previous attendance at a coaching education/training/licensing session and previous coaching experience. A respondent who had attended a coaching education/training/licensing session usually had previous coaching experience. Coaches with previous experience guiding teams may realize the benefit of attending education/training/licensing sessions, and continue to attend them throughout their coaching career. There are a variety of benefits to attending an education/training/licensing session; learning how to organize and implement a practice, different methods of demonstrating a skill, and building a network to acquire equipment or resources for the team. A coach who attends a session for the first time may realize the impact the session has on his or her coaching, and continue to attend them.
There were no previous studies that looked at whether an individual attending a coaching education/training/licensing session had previous coaching experience. Most of the respondents in earlier research were participants in a coaching education/training/licensing session during the time frame of the study (Lee et al., 2002; Malete & Feltz, 2000). Previous research studies did indicate that attendance at a coaching education/training/licensing session resulted in an increase in coaching efficacy levels (Lee et al., 2002; Malete & Feltz, 2000). Future research should analyze whether attendance at coaching education/training/licensing sessions significantly impacts the longevity of a coach.

Relationship between previous playing experience and technique efficacy. The higher a respondent's technique efficacy level the more likely he or she had experience playing soccer. There were no studies involved in the literature review which looked at previous playing experience as a variable impacting coaching efficacy, but it seems logical that individuals with experience playing soccer may be more confident in their abilities to teach technical skills than individuals without playing experience. Previous research in the teaching setting indicated that teaching experience did positively influence teaching efficacy (Bush, 1970; Corey, 1970; Denham & Michael, 1981; Gibson & Dembo, 1984; Stinnet, 1970). When playing soccer, a person can head the ball by letting the ball hit them in the head. If the ball goes forward, then the action of heading the ball is done correctly, if it needed to go forward. Coaches without previous playing experience may feel confident in their abilities to teach this technical skill if heading the ball only entails having it go forward. Unfortunately, if the ball needs to go forward with distance versus
height, or in a certain direction, then the action of heading the ball may become more
difficult for coaches without previous playing experience to explain, therefore impacting
their technique efficacy levels. Coaches without previous playing experience may feel
that they do not have the abilities to explain this skill as they have not done it before, or
do not know what it feels like if it is done correctly. A coach with previous playing
experience may be able to "step into the shoes" of the player and share with him or her
past experiences of heading the ball. The coach may be able to relate to the player better
and understand what actions need to be corrected or evaluated more for the action to be
effective. The more previous playing experience a coach has, the more confident he or
she is that she can coach the technical skills associated with soccer.

The results of this study did not support previous research indicating the numbers
of years of previous coaching experience may be a significant predictor of coaching
efficacy. Coaches with previous experience tend to have higher levels of game strategy
efficacy, motivation efficacy, and overall coaching efficacy (Bandura, 1977; Feltz et al.,
1999; Lee et al., 2002; Marback et al., 2005). Research in the teaching field has also
shown that longevity in the classroom positively impacts teacher efficacy (Bush, 1970;
group of the respondents in this study indicated having previous coaching experience; the
fact that the previous coaching experience was not a significant predictor may be due to
the short amount of time spent previously coaching soccer. Forty-two of the respondents
may have coached soccer before, but it may have only been for a single season.
Influence of gender on game strategy efficacy. After conducting the independent samples t-tests, two significant results were highlighted. It was found that the mean of male respondents was significantly higher than the mean of female respondents related to game strategy efficacy. This result aligns with the research done by Marback et al. (2005) which showed that male coaches scored higher than female coaches in game strategy efficacy. Coaching has historically been a male dominated field; as seen in this study, 69% percent of the responding coaches were male. The continued growth of girls’ sports teams in soccer will provide more opportunities for females to hold coaching positions that were traditionally held by male coaches. The opportunity for more females to coach will continue to provide avenues for experience, positively impacting their levels of game strategy efficacy.

The results of this study differed with Marback et al.’s study (2005) related to gender and character building efficacy; there was not a significant difference between males and female respondents related to instilling respect and good sportsmanship among the youth. The incongruence in results related to character building efficacy may be due to the differences in sample populations for the two studies. Marback et al.’s study (2005) involved nearly 200 intercollegiate, paid, professional coaches from a variety of sports. This research study involved a much smaller sample size from one sport, and the coaches volunteered to participate in coaching.

Influence of previous playing experience on technique efficacy. The comparison of mean scores between respondents with previous playing experience and those without previous playing experience related to technique efficacy was statistically significant. Previous
performance accomplishments are the strongest source of information related to self-efficacy (Bandura, 1977; 1986; 1997; Maddux, 1995; Schunk, 1989; Williams, 1995). These accomplishments and an individual’s self-reflective capability influence whether a coach feels that he or she has the ability to demonstrate technical skills. A coach with previous playing experience may recall his or her actions, and in turn, use those experiences and reflections to shape their demonstrations to younger players.

Within the literature review, there were no studies conducted discussing the impact of previous playing experience on technique efficacy. A number of the previous research studies did use intercollegiate coaches in their sample size (Feltz, et al., 1999; Kenow & Williams, 1999; Kent & Sullivan, 2003; Marback et al., 2005; Short & Short, 2004; Sullivan & Kent, 2003; Vargas-Tonsoing et al., 2003). Previous playing experience would seem to be a necessity if an individual is a professional coach at the intercollegiate level, considering the requirements associated with guiding athletes in order to be successful. However, it may not prove useful to incorporate this variable into studies conducted with the volunteer coaching population.

It is not surprising that respondents with previous playing experience scored higher than those without previous playing experience. As indicated earlier, there is research which does support the concept that previous teaching experience impacts self-efficacy (Bush, 1970; Corey, 1970; Denham & Michael, 1981; Gibson & Dembo, 1984; Stinnet, 1970). If a coach has previous experience as a player, he or she may be able to demonstrate technical skills better than a coach without previous playing experience. Understanding the speed of the ball, speed of play, body positioning, and angles of play
are all critical components of soccer, and if a person has playing experience, he or she may be able to communicate those points better than someone without experience. There are also several emotional and psychological components related to playing soccer that a coach without previous playing experience may understand, but only through another sport. Firsthand experience in soccer may prove invaluable to a coach throughout a season; being able to say “I’ve been in your shoes” or share something from their own personal playing experience with a player who has not performed well can strengthen the relationship between the coach and the player.

As indicated from past research, previous performance accomplishments are considered the strongest source of self-efficacy (Bandura, 1977; 1986; 1997; Maddux, 1995; Scbunk, 1989; Williams, 1995). Yet, the non-significant t-test results indicate that respondents without previous playing experience or coaching experience did not significantly differ from those with previous playing and coaching experience along multiple dimensions of coaching efficacy. The non-significant t-test results may be associated with the belief that previous playing or coaching experience is not as important to coaching at this level as it is with coaching at the collegiate or professional level.

Multiple linear regression results. The multiple linear regressions indicated that a combination of age, gender, previous coaching experience, previous playing experience, and attendance at a coaching education/training/licensing session did not predict motivation efficacy, character building efficacy, game strategy efficacy, technique efficacy, or overall coaching efficacy. While each of the independent variables explored
in this study may have significant contributions when looked at individually, the combination of the independent variables does not significantly impact motivation efficacy, character building efficacy, game strategy efficacy, technique efficacy, and overall coaching efficacy (Everhart & Chelladurai, 1998; Feltz et al., 1999; Fung, 2002; Lirgg et al., 1994; Lee et al., 2002; Malete & Feltz, 2000; Marback et al., 2005).

Previous research has shown that a combination of a number of the independent variables used in this study can impact coaching efficacy, but the coaches worked with high school and collegiate athletes (Feltz et al., 1999; Fung, 2002; Lee et al., 2002; Marback et al. 2005). The results of the study shed light on some important points related to coaches who work with youth between the ages of 11-14.

First, most of the respondents, regardless of gender or age, did not have an extensive background in playing soccer at any level, and few had coached soccer beyond the recreational level. Still, the respondents indicated that they felt confident in their abilities to carry out the duties associated with coaching 11-14 year olds in soccer as indicated by their responses to the CES. This may be due to the fact that the coaches believed they did not need an extensive background in technical, motivational, game strategy and character building aspects of coaching with this age group. As long as there was a basic understanding of how to coach any sport, this may have been good enough in their minds to lead a group of 11-14 year olds through a soccer season.

Second, previous playing experience may be a source of information related to coaching efficacy, but it is not the only influence on coaches' overall efficacy levels. Coaching efficacy is task specific, related to motivation, character building, game
strategy, and technique. A person may have a wealth of playing experience, but that experience does not mean he or she will have a high level of coaching efficacy. The dimensions associated with coaching efficacy may have never been addressed or attended to when the individual was engaged in a given sport as a player, except for technique. This may impact an individual's ability to draw a connection between previous playing experience and coaching efficacy.

Third, coaches may also hear from other coaches the requirements associated with coaching soccer, and feel that they can carry out those duties. Verbal persuasion is one of the sources that can impact an individual's level of self-efficacy (Bandura, 1977; 1986; 1997; Buhr et al., 1983; Fuller et al., 1982; Maddux, 1995; Schunk, 1989; Weiss et al., 1991; Williams, 1995). Whether the coaches are male or female, previous playing or coaching experience may not be something that is discussed or warranted; rather topics such as "remaining positive with the kids" and "making sure they are having fun", may be what is highlighted as important. Coaches may coach other sports teams and be successful with those groups; therefore soccer may just be another sport that can be coached in the same manner as football, basketball, and baseball. Setting and achieving general goals and benchmarks when coaching may impact self-efficacy. Understanding the impact these goals and benchmarks have on self-efficacy is analogous to previous research conducted in the teaching environment (Glidewell et al., 1983; Guskey & Passaro, 1993; Ramey-Gassert et al., 1996).

Fourth, there may be a belief that "If someone else who has little to no playing or coaching experience can coach soccer, why can't I?" This type of vicarious experience
is also a source of information that can impact self-efficacy (Bandura, 1977; 1986; 1997; Maddux, 1995; Schunk, 1989; Weiss et al., 1991; Williams, 1995). Coaches may take on teams because they see other people they know coaching and enjoying themselves. The thought is “If that other person can coach, so can I” (Wheeler & Ladd, 1982). These coaches assume responsibility for teams believing that their experience will be similar to someone else’s due to the fact that the knowledge level of soccer is equal. It does not matter if the coach is male or female who is coaching boys or girls, he or she has witnessed someone else coaching and feel that it is possible to do.

The results of this study lend valuable research to the body of knowledge associated with coaching efficacy. Understanding the sources of information impacting volunteer coaches’ beliefs in their abilities is paramount when looking at efficacy levels. The data garnered from this study will enhance the comprehension of coaching efficacy, and serve as a foundation for interpreting the coaching efficacy levels of volunteer coaches.

Recommendations

The recommendations that follow in this section are associated with the procedures, instrumentation, research process, and findings of the study. They have been identified as points, when incorporated into future studies, which can aid in further expansion of the body of knowledge associated with coaching efficacy. These recommendations would impact further research on the topic of coaching efficacy with coaches of youth between the ages of 11-14. The recommendations are divided into two groups; the first group of recommendations addresses this particular study. The second
group of recommendations addresses future coaching efficacy studies.

Recommendations From This Study

The first group of recommendations addresses items associated with this research study. These recommendations are as follows:

1. The voluntary participation rate and subsequent data collection can be increased if the target coaching population is together as one large body. The researcher and his colleagues were required to attend coaching meetings in the various communities; unfortunately, some of the communities did not hold coaching meetings. The researchers were not able to collect data from the coaches in communities that did not hold coaches' meetings, therefore lowering the number of participants in the study.

2. Enhancing the survey instrument to include opportunities for written responses from the coaches may have provided insight as to the variables impacting coaching efficacy. If the researcher constructed an instrument which gave coaches the opportunity to list what variables impacted their coaching efficacy levels, other sports they may have coached and for how long, the result may have been a more comprehensive body of data for analysis.

3. Identifying what constitutes the differences between a formal and informal coaching education/licensing/training session may clarify responses given related to attendance at an educational session. If the researcher articulated what qualified as a coaching session, the data may have been different, potentially impacting the relationship of the variable to the dimensions of coaching efficacy, as well as overall coaching efficacy.
Recommendations for Further Research

The second group of recommendations includes points which can impact future studies related to coaching efficacy. These recommendations are as follows:

1. Incorporating other variables into future studies, including win/loss record, commitment to coaching, and valence or attraction to coaching, may impact future coaching efficacy studies with respondents who coach youth between the ages of 11-14. These variables have shown in previous research to significantly impact coaching efficacy (Bandura, 1997; Feltz et al., 1999; Feltz & Lirgg, 1998; Kent & Sullivan, 2003; Marback et al., 2005).

2. Since the Cedar Valley Youth Soccer Association may not be representative of the overall coaching population of youth between the ages of 11-14, it may prove beneficial to conduct a comparative study between coaching populations from two communities. There may be a variety of responses to the independent variables associated with the coaching population in the two communities, such as previous playing experience and previous coaching experience. These responses may provide insight when predicting levels of motivation efficacy, character building efficacy, game strategy efficacy, technique efficacy, and overall coaching efficacy. A comparative study of coaching populations may enrich the body of knowledge related to coaching efficacy. For example, in this study the combination of age, coach’s gender, previous soccer playing experience, previous experience coaching soccer and attendance at a coaching education/licensing/certification session can not predict overall coaching efficacy. The results of this study may not be the same as the same study done with a second soccer
association. Responses collected may vary, causing different calculations in the regression analyses.

Also, it is recommended that there may be the need to examine communities of varying population sizes. For example, a larger community in Iowa, such as Des Moines, may provide a sample population with different responses than the sample represented in the communities included in this study. It may be evident that analyzing communities that vary in population size may provide insight into volunteer coaches' efficacy levels when working with this age group and produce a different set of results.

3. As research has shown, athlete's perceptions of a coach's ability have proven invaluable when researching coaching efficacy (Short & Short, 2004; Vargas-Tonsing et al., 2003). Since the age of the athletes on the teams is younger than nearly all previous coaching efficacy studies, a research study would need to include an instrument or method of data collection which can be understood by the athletes. If it is possible to include an instrument or method of data collection which may be completed by the athlete on the team, this data may enhance the interpretation of coaches' efficacy levels.

4. A pre-test and post-test study may allow the researcher to see the potential fluctuation of coaching efficacy levels. This study was a pre-test only study; all the coaches responded to the questionnaire prior to the start of the season. The coaches had not conducted a practice, coached during a competitive match, or witnessed the various skill levels of their athletes. A coach may have high levels related to the various components of coaching efficacy before the season, but there may be factors that impact those levels, such as losing matches, unproductive practices, or low parent support. If
the researcher can collect data at the beginning and end of the season, he or she may begin to hypothesize as to why fluctuations occur in the levels of coaching efficacy.

5. Further research focusing on how volunteer coaches prioritize the four dimensions of coaching efficacy when working with youth ages 11-14 may prove beneficial. This may be especially useful in interpreting the data associated with the four subscales of coaching efficacy. Asking coaches what they feel are the most important components of coaching efficacy may provide valuable insight related to volunteer coaches’ efficacy levels.

Summary

The results of this study indicated that the combination of the five independent variables did not significantly impact motivation efficacy, character building efficacy, game strategy efficacy, technique efficacy and overall coaching efficacy. When the independent variables were viewed individually with each dimension of efficacy, technique efficacy was significantly impacted by the previous playing experience of the coach, and gender significantly impacted game strategy efficacy.

The respondents in this study indicated having average to higher levels of motivation, character building, game strategy, and technique efficacy through their responses on the CES; this means the respondents feel they have the abilities to carry out the task of coaching soccer with 11-14 year olds. The respondents also indicated not having much previous coaching experience. Initially, this may seem to be an interesting result coupled with their average to high responses related to the four dimensions of coaching efficacy, but as indicated earlier, previous playing experience may be more vital
when an individual is coaching at the intercollegiate ranks as a profession.

The responses by the participants in the study may be associated with two of the dimensions of self-efficacy: magnitude and generality (Bandura, 1977; 1986; 1997; Lent & Hackett, 1987; Maddux, 1995). The respondents may feel the magnitude, or degree of difficulty, of coaching soccer with 11-14 year olds is not high. Therefore, they may feel confident in their abilities to coach even with little to no previous soccer coaching experience. However, if the magnitude associated with coaching were higher, the respondents' efficacy levels may begin to decrease (Raudenbush et al., 1992).

The magnitude and generality of coaching may impact the results of the study in other ways. For example, coaches may believe that if they have coached one sport, it cannot be different than coaching another sport with this age group. Therefore, they may be confident in carrying out the tasks associated with coaching. In this study, the magnitude of coaching may not be great. A coach may not be too concerned with the four dimensions of coaching efficacy while volunteering to guide 11-14 year olds. But if the situation changed, and the magnitude of the coaching situation increased, there may be a need to focus more on tactics, commit more time to the team, and consistently succeed on the field. The coach may not believe in his or her own abilities to guide athletes on the team, causing his or her efficacy level to decrease, impacting their decision to continue coaching (Feltz et al., 1999). For example, the potential of coaching older players or coaching in a more competitive setting may adversely affect a coach's efficacy level, causing them to not assume those duties.
Even though the data analysis indicates that respondents feel confident in their abilities to coach soccer with youth between the ages of 11-14, it is still important that soccer associations like the Cedar Valley Youth Soccer Association continue to provide opportunities for coaches' efficacy levels to increase. Coaching education sessions can be an opportunity for individuals to learn more about the technical skills associated with soccer, understand game strategy, develop motivational techniques, and comprehend the importance of good sportsmanship during the season. These sessions also give a coach the chance to witness demonstrations by experienced coaches. As a result, such sessions may include certifications which indicate achievement of coaching competencies by the volunteers. Perpetuating volunteerism in youth sports, especially soccer, is crucial to the success of these programs. Education sessions may serve to validate the efforts of the volunteers through granting of certification focused on strategies associated with coaching are excellent methods that may be employed to encourage continued involvement. The work done by associations, such as the CVYSA, may serve to enhance a volunteer coaches' experience as well as continue to successfully promote collaboration with other commercial and public sectors within a given community.

The various sources of information mentioned above impact coaching efficacy, and effective coaching sessions may positively impact coaching efficacy. Looking forward, coaches that go through these sessions may be individuals who have a long coaching career, and if they feel confident in their abilities, may lead coaching education sessions for others. There are a number of ways to impact coaching efficacy, such as a coaching mentoring program, with a person serving as an assistant coach first before they
move into a head coaching role or opportunities throughout the soccer season to attend coaching education/training/licensing sessions. These methods have been shown to significantly impact coaching efficacy (Feltz et al., 1999; Fung, 2002; Lee et al., 2002; Malete & Feltz, 2000).

The results of this study have continued to build the body of knowledge related to coaching efficacy. While previous research has been supported in some cases with the results of this study, other findings have illustrated a different perspective of coaching efficacy. While the respondents in this study have indicated average to higher levels of motivation efficacy, character building efficacy, game strategy efficacy, technique efficacy, and overall coaching efficacy, there are limited significant conclusions drawn from the statistical analyses. These conclusions are unique as they beg the question of what sources of information affect the respondents’ efficacy levels related to their abilities to coach 11-14 year olds in soccer. The significant conclusions drawn from the data analysis indicate some parallels with previous research. While further research is paramount to expanding the understanding of coaching efficacy in this environment, this study has provided a foundation to build a body of knowledge within coaching efficacy that is related to volunteer coaches of youth sports programs.
REFERENCES


APPENDIX A

COACHING QUESTIONNAIRE

The purpose of this questionnaire is to gain knowledge about coaching confidence in the soccer setting. If you wouldn’t mind taking a few minutes to complete the questionnaire, it would be greatly appreciated. Your participation is voluntary, and completely confidential. Thank you for your help!

Please circle the answer that applies:

1. Gender: Male Female

2. Age: 

3. What is your current role with your soccer team? Head Coach Assistant Coach

4. Have you ever coached soccer before? Yes No

If Yes, please continue. If No, please go to Question 7.

5. Were you the head coach or assistant coach? Head Coach Assistant Coach

6. For the following tables, please answer in all columns that apply:

<table>
<thead>
<tr>
<th>Coached</th>
<th>Number</th>
<th>Coached</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boys-Check all that apply</td>
<td>of Years Coached</td>
<td>Girls-Check all that apply</td>
<td>of Years Coached</td>
</tr>
<tr>
<td>Recreation Club</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Competitive Club</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High School</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>College</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Professional</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

7. Do you have experience playing soccer? Yes No
If Yes, please indicate the number of years of experience in the table below. If No, please go to question 8.

<table>
<thead>
<tr>
<th>LEVEL OF PLAYING EXPERIENCE</th>
<th>Number of Years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recreation Club</td>
<td></td>
</tr>
<tr>
<td>Competitive Club</td>
<td></td>
</tr>
<tr>
<td>High School</td>
<td></td>
</tr>
<tr>
<td>College</td>
<td></td>
</tr>
<tr>
<td>Professional</td>
<td></td>
</tr>
</tbody>
</table>

8. Have you ever attended a coaching clinic, educational session, or licensing/certification session?  
   Yes  No
**APPENDIX B**

**COACHING EFFICACY SCALE (CES)**

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

<table>
<thead>
<tr>
<th>How confident are you in your ability to:</th>
<th>Not at all Confident</th>
<th>Extremely Confident</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. maintain confidence of the players?</td>
<td>0 1 2 3 4 5 6 7 8 9</td>
<td></td>
</tr>
<tr>
<td>2. recognize opposing teams’ strengths during games?</td>
<td>0 1 2 3 4 5 6 7 8 9</td>
<td></td>
</tr>
<tr>
<td>3. mentally prepare the players for game strategies?</td>
<td>0 1 2 3 4 5 6 7 8 9</td>
<td></td>
</tr>
<tr>
<td>4. understand competitive strategies?</td>
<td>0 1 2 3 4 5 6 7 8 9</td>
<td></td>
</tr>
<tr>
<td>5. instill an attitude of “being good sports”?</td>
<td>0 1 2 3 4 5 6 7 8 9</td>
<td></td>
</tr>
<tr>
<td>6. build the self-esteem of the players?</td>
<td>0 1 2 3 4 5 6 7 8 9</td>
<td></td>
</tr>
<tr>
<td>7. demonstrate the skills of soccer?</td>
<td>0 1 2 3 4 5 6 7 8 9</td>
<td></td>
</tr>
<tr>
<td>8. adapt to different game situations?</td>
<td>0 1 2 3 4 5 6 7 8 9</td>
<td></td>
</tr>
<tr>
<td>9. recognize opposing teams’ weaknesses during games?</td>
<td>0 1 2 3 4 5 6 7 8 9</td>
<td></td>
</tr>
<tr>
<td>10. motivate the players?</td>
<td>0 1 2 3 4 5 6 7 8 9</td>
<td></td>
</tr>
<tr>
<td>11. make critical decisions during games?</td>
<td>0 1 2 3 4 5 6 7 8 9</td>
<td></td>
</tr>
<tr>
<td>12. build togetherness on the team?</td>
<td>0 1 2 3 4 5 6 7 8 9</td>
<td></td>
</tr>
<tr>
<td>13. instill an attitude of “fair play” among the players?</td>
<td>0 1 2 3 4 5 6 7 8 9</td>
<td></td>
</tr>
<tr>
<td>Question</td>
<td>Not at all Confident</td>
<td>Extremely Confident</td>
</tr>
<tr>
<td>-------------------------------------------------------------------------</td>
<td>----------------------</td>
<td>---------------------</td>
</tr>
<tr>
<td>14. coach individual players on techniques of soccer?</td>
<td>0 1 2 3 4 5 6 7 8 9</td>
<td></td>
</tr>
<tr>
<td>15. build the self-confidence of the players?</td>
<td>0 1 2 3 4 5 6 7 8 9</td>
<td></td>
</tr>
<tr>
<td>16. develop the players' abilities?</td>
<td>0 1 2 3 4 5 6 7 8 9</td>
<td></td>
</tr>
<tr>
<td>17. maximize your teams' strengths during games?</td>
<td>0 1 2 3 4 5 6 7 8 9</td>
<td></td>
</tr>
<tr>
<td>18. recognize talent in athletes?</td>
<td>0 1 2 3 4 5 6 7 8 9</td>
<td></td>
</tr>
<tr>
<td>19. promote good sportsmanship?</td>
<td>0 1 2 3 4 5 6 7 8 9</td>
<td></td>
</tr>
<tr>
<td>20. detect skill errors of the players?</td>
<td>0 1 2 3 4 5 6 7 8 9</td>
<td></td>
</tr>
<tr>
<td>21. adjust your game strategy to fit your teams' talent?</td>
<td>0 1 2 3 4 5 6 7 8 9</td>
<td></td>
</tr>
<tr>
<td>22. teach the skills of soccer?</td>
<td>0 1 2 3 4 5 6 7 8 9</td>
<td></td>
</tr>
<tr>
<td>23. build team confidence?</td>
<td>0 1 2 3 4 5 6 7 8 9</td>
<td></td>
</tr>
<tr>
<td>24. instill an attitude of respect for other players?</td>
<td>0 1 2 3 4 5 6 7 8 9</td>
<td></td>
</tr>
</tbody>
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Thank you for your participation!
Hello, my name is __ ___ and I am conducting research as part of a research study. We are studying the self-efficacy, or confidence, in child and youth development supervisors who work with employees of child and youth development programs. This research is completely voluntary and you can choose to stop at any time throughout the questions. If you choose to complete the survey, it will take about 10 minutes and there will be no follow-up dates. Please answer the questions honestly.

I will now hand out the consent forms. Please read and sign one copy of the consent form. The other consent form is for you to keep for your records. After you have completed the consent form, please turn it in to me and pick up a questionnaire to fill out. After you have finished completing the questionnaire, please bring it up to me and I will put it in a separate, confidential envelope. Then you are free to go.

PLEASE ANSWER THE QUESTIONS HONESTLY. INFORMATION PROVIDED WILL BE KEPT CONFIDENTIAL.

Are there any questions? Thanks for your time!
Project Title
An Analysis of Coaching Efficacy in Volunteer Soccer Coaches

Name of Investigator
Chris Kowalski

Invitation to Participate

You are invited to participate in a research study conducted through the University of Northern Iowa. The University requires that you give your signed agreement to participate in this project. The following information is provided to help you make an informed decision about whether or not to participate.

Nature and Purpose

The purpose of this study is to analyze the coaching efficacy of individuals who volunteer to coach soccer for youth between the ages of 11-14. Coaching efficacy is the belief that an individual has in their ability to carry out certain tasks related to coaching. There are four factors associated with coaching efficacy: motivation, character building, game strategy, and technique. This study begins to gather more information on coaching efficacy regarding volunteer coaches of youth sports teams.

Explanation of Procedures

Involvement in this study includes a one-time completion of a short questionnaire about your beliefs in coaching. Completion of this questionnaire should take about 10 minutes. Also included is a section which asks for your age, gender, past coaching experience, current coaching role, past soccer playing experience, and attendance at a coaching education/licensing/training session.

Discomfort and Risks

There are no foreseeable risks to participation in this research study.

Benefits and Compensation

There will be no direct benefits to participating in this research study. Your decision to participate or not in this research study will have no bearing on your relationship with the Cedar Valley Youth Soccer Association.

Confidentiality
Information obtained during this study which could identify you will be kept confidential. The questionnaires are anonymous; you do not need to put your name on the questionnaire. The summarized findings with no identifying information may be published in an academic journal or presented at a scholarly conference.

**Right to Refuse**

Your participation is completely voluntary. You are free to withdraw from participation at any time or to choose not to participate at all, and by doing so, you will not be penalized.

**Questions**

If you have questions about the study or desire information in the future regarding your participation or the study generally, you may contact Christopher Kowalski at the School of Health, Physical Education, and Leisure Services, University of Northern Iowa, 319-273-3528 or Christopher.kowalski@uni.edu, or Dr. Sam Lankford, at the School of Health, Physical Education, and Leisure Services, University of Northern Iowa, 319-273-6840 or sam.lankford@uni.edu. You can also contact the Office of the Human Participants Coordinator, University of Northern Iowa, at 319-273-6148, for answers to questions about the rights of research participants and the participant review process.

**Agreement:**

I am fully aware of the nature and extent of my participation in this project as stated above and the possible risks arising from it. I hereby agree to participate in this project. I acknowledge that I have received a copy of this consent statement. I am 18 years of age or older.

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(Signature of Participant) (Date)

(Printed Name of Participant)

(Signature of Investigator) (Date)

(Signature of Advisor) (Date)