

COACHING BEHAVIORS OF SUCCESSFUL HIGH SCHOOL
GIRLS' BASKETBALL COACHES

by

Tedi L. Searle

A thesis submitted to the faculty of
The University of Utah
in partial fulfillment of the requirements for the degree of

Master of Science

Department of Exercise and Sport Science

The University of Utah

May 2012

Copyright © Tedi L Searle 2012

All Rights Reserved

The University of Utah Graduate School

STATEMENT OF THESIS APPROVAL

The thesis of Tedi L Searle

has been approved by the following supervisory committee members:

James Hannon, Chair Feb. 15, 2012
Date Approved

Barry Shultz, Member Feb. 15, 2012
Date Approved

Nicole Miller, Member Feb. 16, 2012
Date Approved

and by Barry Shultz, Chair of
the Department of Exercise and Sport Science

and by Charles A. Wight, Dean of The Graduate School.

ABSTRACT

The primary purpose of this study was to systematically examine the behaviors of a successful female and male high school coach of girls' basketball teams and compare to collegiate coach Pat Summitt. A secondary purpose of the study was to examine the correlation between coaches' behaviors and athlete expectancy status. Throughout the season both coaches' verbal and nonverbal behaviors were video recorded over the course of eight practices. A total of 553 minutes consisting of 3,141 of a female coach's practice behaviors and a total of 590 minutes consisting of 3,678 of the male coach's practice behaviors were coded using the Arizona State University of Observation Instrument. Both the female coach and male coach provided instruction more often (female 35.5%, $n = 1114$, male 29.2%, $n = 1072$) than any coaching behavior when the categories of preinstruction, concurrent instruction, and postinstruction were combined. Results indicated that the female coach exhibited management (27.9%) more than any other behavior category. The highest category for the male coach was praise (22.1%). The praise to scold ratio for male and female coaches exceeded a 2:1 ratio with male coach exhibiting more praise behaviors and the female coach exhibited less scold behaviors than the male. A Pearson Product Correlation suggested that both coaches' perceptions of athletes' expectancy remained consistent from the beginning to the end of

the season. Contrary to predictions, a MANOVA revealed no differences in the quantity or quality of the coaching behaviors that both the female and male coach directed toward high and low expectancy players in the given categories. The implications from this data suggest that successful coaches treated athletes the same in terms of the 13 coaching behaviors and that coaches spend the majority of their time using instruction.

TABLE OF CONTENTS

<u>Chapter</u>	<u>Page</u>
ABSTRACT.....	iii
LIST OF TABLES.....	vii
CHAPTERS	
1 - INTRODUCTION.....	1
Purposes of the Study.....	7
Questions and Research Hypotheses	8
Delimitations.....	9
Limitations	10
Assumptions.....	10
Definition of Terms.....	11
2 - REVIEW OF LITERATURE.....	13
Coaching Behaviors.....	13
Studies on Expert/Successful Coaches	19
The Effect of Gender on Coaching Behaviors	31
Coaching Behaviors and Expectancy Theory	34
Summary.....	41
3 - METHODS.....	44
Participants.....	44
Measures	47
Procedures.....	49
Data Analyses	52
4 - RESULTS AND DISCUSSION.....	56
Results.....	57
Discussion.....	71

5-SUMMARY, FINDINGS, CONCLUSIONS, AND RECOMMENDATIONS FOR FUTURE RESEARCH	90
Summary	90
Findings.....	91
Conclusions.....	92
Limitations	93
Recommendations for Future Research	93
Recommendations for Coaches.....	96
Appendices	
A – COACH INTERVIEW	98
B – ATHLETE INFORMATION.....	100
C – DEFINITIONS, CATEGORIES, AND CODING FORMS OF ARIZONA STATE UNIVERSITY OBSERVATION INSTRUMENT.....	102
D – MODIFIED EXPECTANCY RATING SCALE.....	105
REFERENCES	107

LIST OF TABLES

<u>Table</u>	<u>Page</u>
1. Coaching Behavior Totals, Percentages, and RPM for the Female and Male Coach	58
2. Totals for Male and Female Coaching Behaviors Toward Individuals versus Team for Each Category	59
3. Correlations Between Pre- and Post MERS, Coach Rank, and Average Playing Time for the Male and Female Coach	62
4. Coaching Behaviors for Male and Female Coach towards High and Low Expectancy Athletes.....	64
5. Coaching Behaviors for Female Coach towards High and Low and Other Expectancy Athletes.....	66
6. Shapiro-Wilks of Female and Male Coach.....	70
7. Summary Comparison of Coaching Behaviors: High School Coaches and Collegiate Coaches.....	77

CHAPTER 1

INTRODUCTION

Regardless of sport or level of competition, successful coaches are often easily identified but rarely understood. Why are some coaches consistently successful? What factors contribute to coaches creating successful athletes and teams with a mixture of ability? Clearly, in the case of sport the end is easily discerned whereas the means to that end are usually unknown or speculated upon. More often attention is directed toward the game behaviors and results rather than the hundreds of practice hours and processes that preceded success. Although many see coaches' behaviors on game day, the behaviors that happen on a more consistent basis during practices may be more predictive of athlete and team success. Because coaching behaviors during the workout are directly related to the quality of the workout, it is logical to assume that the practice behaviors of the coach also directly influence the quality of the athletic performance in competition (Cratty, 1989).

In general, coaches aim to maximize the performance of athletes, and some coaches are known for their ability to achieve this desired outcome and be successful. Due to these known results, the study of successful coaches has become a focal point of coaching research. The word "success" has been given various meanings in regards to coaching. In order for researchers to study a successful coach and discover their behaviors and processes, it is a prerequisite to establish what a successful coach is, thus leading to defining the concept of success relative to sport. Hansen, Gilbert, and Hamel

(2003) described successful coaches in terms of coaching experience, career winning percentage, and awards won. Gallimore and Tharp (2004) qualified John Wooden as a successful coach because of the 10 National Collegiate Athletic Association (NCAA) championships his University of California Los Angeles (UCLA) basketball teams won with varying degrees of team talent. Pat Summitt has also been recognized as a successful coach since becoming the winningest coach in NCAA Division I basketball history (1035-196). Claxton (1988) defined successful coaches as having career winning records of 70% or higher. Clearly, the criteria used to determine success in coaching has been defined in a multiplicity of ways. However, in today's world, teams and coaches are not considered successful unless they win and many coaches will state they are trying to win, thus the meaning of success usually has been related to win-loss records and championships/titles won (Becker & Wrisberg, 2008; Lacy & Goldston, 1990; Selby, 2009).

Although a specific recipe for building winning teams remains unknown, findings do suggest that coaches' behaviors influence and contribute to team performance success (Côté, Salmela, Trudel, Baria, & Russell, 1995; Horn, 2008), and "the ultimate failure to win must rest with the coach who creates the program and directs the game plan" (Wooden, 2004, p. 114). Throughout history, some coaches have been recognized for their unique ability to achieve success. Therefore, it could be deemed necessary to examine the behaviors of experienced, successful coaches to fully understand their behaviors, which may have impacted their strategies that led them to success. Lacy and Darst (1985) also suggested that to have a greater understanding of the strategies employed it would seem beneficial if coaching research were focused on the behaviors of

winning coaches because coaching behaviors can be related to outcomes in the form of wins and losses.

John Wooden, named the greatest college coach of the 20th Century by the Entertainment and Sports Programming Network (ESPN), received attention from the general public and researchers for his coaching successes by consistently producing winning teams. Tharp and Gallimore (1976) conducted a study of John Wooden, then basketball coach of the UCLA Bruins, with use of a 10-category system they devised for systematic observation in a teaching/coaching setting. Their purpose was simple: research the practices of a master teacher whose credentials and accomplishments warranted a claim of exemplary practice to generate new hypotheses and investigative avenues (Lacy & Darst, 1985). The researchers observed John Wooden for 30 hours during 15-practice sessions spread over the 1974-1975 season. After analyzing the 2,326 coded coaching behaviors of Wooden, the investigators reported that more than half (50.3%) of his behaviors were in an instructional nature.

More recently, Pat Summitt, women's basketball coach at the University of Tennessee, became the coach with the most wins in NCAA Division I basketball history and represents another coaching success with 34 winning seasons, 26 conference championships, and 8 national titles. Through the use of the Arizona State University Observation System (ASUOI), researchers were able to identify and compare her coaching behaviors to those of John Wooden and other successful coaches. Consistent with previous research on successful coaches, Coach Summitt provided instruction more frequently (48%) than any other coaching behavior (Becker & Wrisberg, 2008; Bloom, Crumpton, & Anderson, 1999; Kahan, 1999; Lacy & Darst, 1985; Segrave & Ciancio,

1990; Solomon, Striegel et al., 1996; Tharp & Gallimore, 1976).

Virtually all of the research that has been conducted about coaching in sport within the last three decades has been motivated by a desire to identify the particular behaviors and leadership styles that are most effective (Chelladurai, 1984; Martin, Jackson, Richardson, & Weiller, 1999; Mondello & Janelle, 2001; Riemer & Chelladurai, 1998; Smith, Smoll, & Hunt, 1977). Although some systematic observation research has been conducted in an attempt to identify behaviors, additional investigation is needed to gain a greater and more in-depth understanding of this topic. Cusion and Jones (2001) stated that the emergence and expansion of the use of descriptive analytical techniques has led to the start of a coaching science (Mesquita, Sobrinho, Rosado, Pereira, & Milistetd, 2008). Based on a review of the coaching literature, Gilbert and Trudel (2004) claimed that coaching, as in other fields, requires descriptive studies for the basic understanding and accumulation of knowledge. Use of systematic observation of coaching behaviors would allow for objective analysis and comparisons of coaching behaviors to be made between successful male and female coaches working with athletes at various competitive levels.

In addition, Cote' and colleagues (1995) stressed the need to examine the behaviors of successful coaches on a deeper level as a result of the growing coaching profession. The focus has been more on the behaviors of coaches rather than on the knowledge behind the behaviors and instructional psychology (Gallimore & Tharp, 2004). Additional scientific analysis of the factors effecting successful coaching behaviors could enhance the field of pedagogy and sport psychology. Although there has

been a recent increase in research dedicated to coaching behaviors, a limited amount of literature exists on the function of gender and expectancy theory within coaching.

One factor that studies have attributed specifically to coaches' behaviors has been the coaches' gender. Early investigations were predominantly completed on male coaches, which limited available understanding of coaching behaviors. Eitzen and Pratt (1989) conducted a descriptive study of female basketball teams to investigate gender differences in coaching philosophy. They asserted that male and female coaches may differ behaviorally to some extent as a result of their gender, but their findings indicated that regardless of gender, the coaches' philosophies' remained similar in most areas. Lacy and Goldston (1990) found only slight differences in analyzing the behaviors of male and female coaches through the use of systematic observation. In examining the knowledge of high-performance gymnastic coaches, Cote et al. (1995) found that the differences between male and female coaches were neither practically nor statistically significant, but were largely representative of individual styles rather than being a result of gender. Although these studies and other coaching research have shed valuable light on coaching behaviors and gender, the existing literature is still substantially lacking.

Another factor that has been suggested as contributing to coaching behaviors but has inadequate research to date has been whether coaching behaviors are influenced by the coaches' perceptions of the players' athletic abilities and skills. This relationship between coach expectations and athlete performance, a theoretical framework known as Expectancy Theory, has been described in the sport psychology literature as a four-step process (Horn, Lox, & Labrador, 2006; Solomon, 2001). In step one, the coach assesses the athlete's ability and skill, then establishes expectations for performance based on

three types of impression cues: personal, performance, and psychological. In step two, the coaches' expectations influence how they behave toward the athlete. This is usually observed through the quantity and quality of feedback. In step three, the athlete becomes aware of the coach's treatment, which can then subsequently affect the athlete's own self-perceptions and behaviors. In step four, the athlete's performance conforms to the coach's original expectations (e.g., high expectancy athletes typically outperform their low expectancy counterparts). These performance outcomes reinforce the coach's belief that their initial assessment of the athlete's ability was accurate.

Although limited research has directly examined coaching behaviors within the framework of Expectancy Theory, a number of studies have suggested that athletes are clearly influenced by their coach's feedback (Allen & Howe, 1998; Amorose & Smith, 2003; Black & Weiss, 1992; Bloom et al., 1999; Markland & Martinek, 1988; Summers, 1991; Tharp & Gallimore, 1976). Feedback has been shown to be one motivational tool to help athletes strive for a specific goal (Magill, 1994; Smith, 2001). For example, athletes are more likely to experience feelings of success and competence when they are provided with encouragement and instruction than when they are repeatedly criticized (Black & Weiss, 1992; Smith, 2001). Likewise, research has revealed that youth athletes preferred coaches who responded with feedback to mistakes using encouragement and technical instruction (Smith, 2001; Smith & Smoll, 1990; Smoll, Smith, & Curtis, 1978; Smith, Zane, Smoll, & Coppel, 1983). Results of one study indicated that female and male varsity athletes who performed on coactive, mixed, and interactive sport teams preferred feedback from coaches that was supportive and instructional, as opposed to nonresponses or negative responses (Kravig, 2003).

In an effort to help improve the pedagogical practice of coaching, it seems beneficial for both coaches and researchers to examine the behaviors and factors that contribute to successful coaches. If researchers are to aid coaches in the practice of effective coaching techniques, more must be learned about behaviors and the factors that relate to coaches' exhibition of desirable behaviors found through systematic observation. Like any profession, coaches can adapt their behaviors to become more effective by gaining an awareness of their behavioral patterns (Lacy & Darst, 1985). Essentially, more effective coaching may result from coaching research (Claxton, 1988). "Although much research has been completed on teaching behaviors and student activities in the physical education environment, only a limited number of studies have focused on the athletic setting" (Lacy & Martin, 1994, p. 95).

Purposes of the Study

The first purpose of this study was to identify instructional and non-instructional coaching behaviors of a successful male and female head coach of high school girls' basketball teams. The second purpose of this study was to investigate the theory of Expectancy (Horn, 1984) by relating coaches' expectancy status (high vs. low) of athletes to coaching behaviors for successful high school coaches in basketball team practice settings. This study replicated the purposes and investigation methods of a study on Pat Summitt, a successful collegiate female head coach of the women's basketball team at the University of Tennessee (Becker & Wrisberg, 2008).

Research Questions and Hypotheses

This study attempted to answer the following research questions:

Research Question 1: How frequently do successful coaches of female high school basketball teams use instructional coaching behaviors in team practice settings?

Hypothesis 1: Coaches will provide Instruction (preinstruction, concurrent instruction, postinstruction) at a higher rate than any other coaching behavior.

Research Question 2: How does gender relate to coaching behaviors for successful girls' basketball coaches at high school team practice settings?

Hypothesis 2: There will be no significant differences between male and female coaches in terms of coaching behaviors at high school basketball practice settings.

Research Question 3: How does a high school female and male coach differ from a female college coach, specifically Pat Summitt, in terms of coaching behaviors in basketball practice settings?

Hypothesis 3: It is hypothesized that coaching behaviors of an instructional category demonstrated by the high school coaches will be slightly lower than those demonstrated by collegiate coach, Pat Summitt. Specifically, instruction will be the most prominent coaching behavior but demonstrated at lower frequency than demonstrated by Pat Summitt. It is also hypothesized that coaching behaviors from the noninstructional categories will be demonstrated at a higher frequency than those demonstrated by Pat Summitt.

Research Question 4: How does the expectancy status of athletes compare from the beginning of the basketball season to the end of the season for coaches at the high school level?

Hypothesis 4: Based on the results of previous expectancy research, it is hypothesized that both coaches' perceptions of their players' skills and abilities will remain consistent over the course of the season.

Research Question 5: How does expectancy perceptions influence coaching behaviors, specifically feedback, of successful coaches in a high school practice setting?

Hypothesis 5: Coaches will provide differential treatment in the form of feedback based on perceived athlete expectancy. High expectancy athletes at the high school level will receive a greater quantity and quality of feedback than lower expectancy athletes.

Research Question 6: Do female and male coaches differ in terms of their treatment of low and high expectancy athletes?

Hypothesis 6: There will be no significant difference between genders in terms of differential treatment of athletes for successful basketball coaches at team practice.

Delimitations

This study was delimited as follows:

1. The sample population selected for this study was delimited to coaches of female high school basketball teams in the state of Utah. Female, as opposed to male basketball teams, were selected based upon the protocol of a previous study conducted with a collegiate female basketball team with Coach Pat Summitt. The sample does represent the nature of high school basketball teams and can be generalized, in this respect, only to coaches of female high school basketball teams.

2. Participants were delimited to coaches at a 5A high school.
3. Participants were observed during drills, half-court work, and full-court work, including observations of warm-ups, conditioning, and interpersonal interactions during practices.

Limitations

The limitations of this study were as follows:

1. The ability to generalize to the entire population of coaches of various age ranges from youth to professional is limited.
2. The results of this study may not be generalized to coaches of male athletes.
3. This study was limited to an analysis of descriptive data, not to attach any evaluative judgments. Any qualitative conclusions based on this research were merely speculative.
4. Behaviors are limited to those exhibited in a team sport setting, specifically basketball, and may not apply to coaches of individual or other team sports.

Assumptions

The following assumptions served as the basis of conduct for this study:

1. It is assumed that the participants were representative of population of successful high school male and female coaches.
2. It is assumed that the participants did not alter their normal behavior due to the presence of video and voice recording equipment.
3. It is assumed that all participants understood and answered all questionnaires as honestly and accurately as they could.

4. It is assumed that sample practice behaviors are representative of all practice behaviors.

Definition of Terms

For the purpose of this study, the following terms had special meaning and were defined:

Behaviors: “Observable verbal and nonverbal actions usually measured by commonly accepted standards” (Dictionary.com, retrieved March 30, 2011 from <http://dictionary.reference.com/browse/behaviors>).

Coactive: Sport teams with low interdependence, which denoted tasks performed by members of the team require little interaction among athletes for success (Goldman, Stockbauer, & McAuliffe, 1977). Coactive sports include bowling, golf, and wrestling.

Feedback: “Any procedures used to inform a learner whether an instructional response is right or wrong” (Kepner, 1991, p. 141).

Interactive: Sport teams with high interdependence, which signifies that the tasks performed by members of the team require considerable interaction among athletes for success (Cox, 1990). Interactive sports are those such as basketball, soccer, and volleyball.

Leadership Style: Leadership has been defined as the attempt to influence the behavior of an individual or group (Hersey & Blanchard, 1982). Leadership styles in sport refers to the actual, preferred, or type of coaching behaviors that produce the desired performance outcomes of athletes (Chelladurai, & Carron, 1983; Chelladurai & Saleh, 1980).

Sport Pedagogy: “The scientific study of teaching and coaching, and the content of what was taught by those teachers and coaches” (Siedentop, 1990, p. 274).

CHAPTER 2

LITERATURE REVIEW

In this chapter, the relevant literature concerning the growing field of coaching science and the factors that have been applied to behaviors of coaching were reviewed. The following review of literature is topically structured to include information to date in several areas. The areas are related to behaviors demonstrated by successful coaches during practices and the factors affecting those behaviors. Thus, this review examines relevant research on coaching behaviors, studies on expert and successful coaches, gender effects on coaching behaviors, and coaching and Expectancy Theory. The review began by establishing what has been done in the coaching field as it pertains to pedagogy and sport psychology.

Coaching Behaviors

Coaching an athletic team at any level has often been considered a teaching experience (Selby, 2009). Coaches, like teachers, spend considerable amounts of time with the challenge of conveying knowledge by teaching physical skills and strategies, motivating effort, correcting errors, and developing confidence. Indeed like a teacher, instruction has been considered to be the most significant aspect of a coach's role (Tinning, 1982). Several studies have offered interesting implications for the understanding of the coaches' role as a teacher. Cote' and colleagues (1995) explained in

their qualitative study on gymnastic coaches, “like teachers, the coach’s job is to transmit and transform a collective body of knowledge and skills on a given subject in order to help athletes acquire and use that knowledge in various situations” (p. 66). In a recent study (Selby, 2009) one coach described his role in the following manner: “A coach is just a teacher, and your responsibility is to teach the youngsters under your supervision how to take and execute to the best of their born ability....” (p. 81). John Wooden was widely regarded as the greatest teacher of basketball at his retirement following the 1975 season. In the notable research on Wooden, Gallimore and Tharp (2004) and Tharp and Gallimore (1976) described their purpose as an investigation of the practices of a master teacher. During this investigation for educational purposes they realized that Wooden took advantage of practically all situations as teaching opportunities. Wooden described running a practice session as the same as teaching an English class... “I knew a detailed plan was necessary in teaching English, but it took a while before I understood the same thing was necessary in sports. Otherwise, you waste an enormous amount of time, effort, and talent” (Wooden, 1997, p. 132). He felt that it was the teaching in practice that was more valuable than the games and winning (Gallimore & Tharp, 2004). Therefore, being a teacher was one of the defining roles of a coach, thereby making them responsible for transmitting to the athlete what to do, how to do it, and how to do it well (Hodges & Frank, 2002; Selby, 2009).

Because the act of coaching has often been studied with respect to the act of teaching, it has focused primarily on behaviors (Bloom et al., 1999; Claxton, 1988; Lacy & Darst, 1985; Tharp & Gallimore, 1976). More and Franks (1996) suggested that the discovery of how coaches facilitated learning for athletes, the central principle of a

coach's instructional behavior, could be discovered through analysis of coaching behaviors. Most of the investigations of coaching behaviors have been descriptive in nature through the use of systematic observation developed from the educational field. The use of systematic observation procedures has arguably contributed more to the understanding of teacher effectiveness than any other single pedagogical development (Darst, Mancini, & Zakrasjek, 1983). Consequently, many of the observation systems developed for teaching effectiveness have been used to learn how to develop and improve coaching techniques.

Lacy and Darst (1985) suggested that when coaches have an awareness of their own behavioral habits, they could adapt those behaviors to become more effective coaches. In order to more clearly identify, understand, and analyze effective coaching behaviors, systematic observation instruments for collecting objective and quantifiable data on coach behaviors were developed (Bloom et al., 1999; Darst et al., 1983). Bloom and colleagues (1999) interpreted systematic observation as a method that "allows a trained person following stated guidelines and procedures to observe, record, and analyze interactions with the assurance that others viewing the same sequence of events would agree with his or her recorded data" (p. 157). This system has been accepted and used throughout education including the field of physical education and more recently coaching to objectively observe behaviors (Bloom et al., 1999; Claxton, 1988; Lacy & Darst, 1985). Several researchers have developed models and instruments to measure the influence of coaching behaviors and leadership styles on athletes (Chelladurai & Saleh, 1978, 1980; Martin & Barnes, 1999; Smith et al., 1977). Despite some recent criticism in favor of more qualitative approaches to investigate coaching behaviors, systematic

observation still has a very important role to play in developing representative evidence-based guidelines to good practice (Potrac et al., 2007).

There are six steps in the process of systematic observation (Van der Mars, 1989). First, the context and participants for observation must be chosen. Second, definitions must be generated and agreed upon to describe observed behavior. Third, the researcher must select the most appropriate observational method and/or tool. Fourth, training procedures must be employed among the observers to establish adequate interobserver reliability. Fifth, observations of events are recorded. Finally, the observation data obtained were analyzed via statistical procedures (ASUOI, Lacy & Darst, 1984).

One of the earlier and most notable systematic observations came from the investigation by Tharp and Gillmore in 1976, which has been used as the basis for numerous coaching and teaching behavior research examinations using systematic observation (Bloom et al., 1999; Claxton, 1988; Lacy & Darst, 1984). Tharp and Gallimore (1976) intended to improve educational research, so they chose to systemically observe the master teacher of basketball, John Wooden. They used a conventional approach to classroom research, establishing categories that captured events and behaviors and then refined them to the point that two people would independently assign the same behavior to the same category (Gallimore & Tharp, 2004). They then sat on the bleachers in Wooden's classroom and designed a system for coding his acts of teaching. The system devised for use, included 10 categories encompassing Wooden's behaviors in addition to an uncodable category. These categories consisted of the following: (a) instructions, (b) hustles, (c) modeling-positive, (d) modeling-negative, (e) praises, (f)

scolds, (g) nonverbal punishment, (h) nonverbal reinstruction, (i) scold reinstruction, (j) other, and (k) uncodable.

Coaching behaviors have been repeatedly evaluated using modified versions of Tharp and Gallimore's (1976) 10-category system for systematic observation in a teaching/coaching setting (Claxton, 1988; Lacy & Darst, 1985). Langsdorf (1979) developed a modified version of the Tharp and Gallimore instrument (1976) with the addition of two categories to objectively observe the behaviors of Frank Kush, head football coach at Arizona State University. Langsdorf's observational instrument included the addition of two descriptive categories to expand the means for summarizing and interpreting the data by different segments of practice (Darst, Zakrajsek, & Mancini, 1989). Model (1983) completed a similar systematic observation study on six losing high school football coaches. Dodds and Rife (1981) completed a descriptive-analytic study on a highly successful women's field hockey coach using an instrument based on the work of Tharp and Gallimore. Lacy and Darst (1985) used an 11-category instrument using a modified form of Tharp and Gallimore's (1976) 10-category system based on the Langsdorf instrument to research the behaviors of a group of 10 winning high school head football coaches. They did not include an uncodable category; however, they added two new categories called use of first name (using the first name or nickname when speaking directly to a player) and management (verbal statements related to organizational details of a practice session not referring to strategies or fundamentals of the game).

From the empirical research derived from Tharp and Gallimore's (1976) observation instrument of Wooden, Lacy and Darst (1985) developed the Arizona State

University Observation Instrument, a systematic observation instrument designed specifically for practice settings versus games (ASUOI; Kahan, 1999; Lacy & Darst, 1985). Because informative statements concerning the skills and strategies of the particular sport are crucial to effective teaching in the athletic environment, the ASUOI was expanded and modified to several behavior categories (instructional) to create a more sensitive tool capable of collecting more specific data on coaching behaviors. It included 13 behavioral categories representing three general types of behaviors: instructional (pre-instruction, concurrent instruction, postinstruction, questioning, manual manipulation, positive modeling, negative modeling), noninstructional (hustle, praise, scold, management, other), and dual codes (statements that include the recipient's name). Because the ASUOI categories were specifically defined and obviously related to coaching behaviors, face validity was apparent. Because a rationale existed for the selection of the behavior categories and those behaviors were representative of coaching behaviors as supported by previous research, the instrument also possessed content validity. Interobserver reliability was established using both event and interval recording procedures. Whether event or interval recording was used, data derived from the ASUOI provided quantitative information concerning behaviors exhibited during the observation period.

Since the development of the ASUOI, numerous investigations have been conducted using the instrument. Rupert and Buschner (1989) used ASUOI to compare the teaching behaviors in physical education with the coaching behaviors of nine teacher/baseball coaches. Claxton (1988) used the ASUOI to investigate high school tennis coaches who were considered more and less successful. In his investigation,

Claxton used the ASUOI to observe nine coaches, using 14 categories instead of 10, dividing the category of instruction into preinstruction, concurrent Instruction, and postinstruction. Also the categories of questioning, manual manipulation, first name, management, and silence were added. Additionally, he investigated tennis coaches and suggested that different sports might require slightly different categories of behaviors.

Regardless of the slight variations, through the utilization of the ASUOI, studies have endeavored to compare and contrast the instructional profiles of various successful coaches of different sports. Furthermore, in order to establish a meaningful database of coaching behaviors in a variety of sporting situations, it has been necessary for similar methodologies and instrumentation to be used. If different instruments were used to collect data, behavioral categories and coding techniques could be too dissimilar to make meaningful comparisons and valid conclusions (Lacy & Goldston, 1990). Although researchers have developed a variety of systematic observation instruments to measure coaching behaviors it has been beneficial to study coaches using similar systematic observation systems such as the ASUOI (Kravig, 2003; Lacy & Darst, 1984; Smith et al., 1977; Tharp & Gallimore, 1976).

Studies on Expert/Successful Coaches

The question has often been asked of how success has been determined and what makes a successful coach. In reference to coaching, success has been subjective according to various criteria that have been used from building character in athletes to winning games. Some coaches have been referred to as being successful because of high athlete graduation rates from school, or the athletes having a positive experience, or athletes having learned life-skills such as work ethic and teamwork, or the athletes

attained above average grade point averages. Chen, Jensen, and Mann (2004) offered that success be viewed with regard to coach's sport knowledge, leadership, communication skills, and managerial ability. Coaches and others have offered the importance of developing athletes instead of focusing on winning, thus having athletes who can play the game and also contribute in society (Selby, 2009). A coach offered the opinion in a recent study that when a team reaches their potential that a coach could still be very successful as a coach and not win a championship (Selby, 2009).

Perhaps helpful to determining how to define a successful coach, would be to examine the differences between the terms of good, great, and successful. When examining simple dictionary definitions of the following good, great, and successful, it was more apparent how a successful coach may be defined. Good was defined as satisfactory in quality, quantity, or degree and morally excellent (Dictionary.com, 2011). This definition may well describe a coach who teaches the athletes moral principles, and life-skills along with sport skills. Whereas great was defined as unusual or considerable in degree, power, and a person who has achieved importance or distinction in a field, which would describe coaches who have become extremely popular for numerous reasons usually due to either exceptional athlete performances and/or conduct. Again according to a dictionary definition success refers to someone who has succeeded or gained a favorable or desired outcome, it also has referred to someone who has gained wealth, favor, or eminence. From these terms it appeared that a successful coach would be someone who can achieve the desired outcome in sports, which by many standards, though not limited to, would be winning.

Although character building of athletes has been expressed as an important element of being a successful coach, when the day has concluded the coaches viewed as successful have been referred to those who win games and championships (Gallimore, & Tharp, 2004; Selby, 2009). This perspective has been observed and understood even within the coaching profession. One coach did not agree that success should have meant winning, but expressed that was the way success has been determined (Selby, 2009):

Well, in this job, at this point in time, success is winning national championships and having your players improve to the level for, basically what they want to achieve with their talents. I think that it's a little bit of a problem in college sports these days because success is not really defined by having all your kids grow up, graduate from college, become better people, and blah, blah, blah. I mean, those things are supposed to happen, but no one hires you based on those things happening, and you certainly get fired even if all those things happen, but you don't win. So I think that's a real dilemma in college sports really, quite frankly. All those things are supposed to happen as well as doing a certain amount of winning. (p. 110)

Another coach described his analysis of success as the following (Selby, 2009),

“Unfortunately, we are all held hostage to winning. I mean, you know, you look at a coach's winning percentage, and championships, and different things like that” (p. 111).

In the research, successful coaches have also been defined in a multiplicity of ways. Claxton (1988) defined successful coaches as having career winning records of 70% or higher. Lacy and Goldston (1990) referred to past winning percentage and years of experience of the coaches to determine success. In 2003, Hansen and colleagues described successful coaches in terms of coaching experience, career wins, and awards won. Gallimore and Tharp (2004) depicted John Wooden as successful due to his 10 NCAA championships. Pat Summitt has been expressed to be successful due to becoming the winningest NCAA Division I coach in history (Becker & Wrisberg, 2008). Despite various definitions both in and outside of research, the predominant view of

success has dealt with winning, and in today's world most coaches will claim they are trying to do so (Becker & Wrisberg, 2008; Selby, 2009).

Successful coaches collectively involve various personalities, behaviors, and instructional leadership styles (Mondello & Janelle, 2001). Bobby Knight was known for his autocratic style (Robinson & Miller, 2003) and John Wooden for his focus on character building (Tharp & Gallimore, 1976). In addition, Pat Summit, who coaches the women's basketball team at the University of Tennessee, demonstrates to her players that she cares about them; however, she still remains a tough disciplinarian (Wrisberg, 1990).

Although books, magazines, documentaries, and interviews provide insights into the philosophies and techniques of many great and successful coaches, research studies that systematically examine successful coaches' behaviors and the factors related to those behaviors have been less common. A variety of research methods, coaching populations, and variables have been examined to help identify differences between successful and less successful coaches. A limited amount of research has been conducted on successful coaches including college basketball coach Jerry Tarkanian (Bloom et al., 1999); college football coach Frank Kush (Langsdorf, 1979); John Wooden (Tharp & Gallimore, 1976); and Pat Summitt (Wrisberg, 1990) to observe and empirically evaluate. Coaching and teaching continue to be such complex processes that many different research perspectives have been and will be necessary to fully comprehend them (Gallimore & Tharp, 2004).

One of the landmark studies in coaching research was performed to investigate the coaching methods of legendary John Wooden, who led his UCLA men's basketball team to an unprecedented 10 Division I basketball championships in a 12-year period (Tharp & Gallimore, 1976). This noteworthy research was among the first to report

systematic observational data through the use of the Tharp and Gallimore's 10-category systematic observation system known as the Coaching Behavior Recording Form (Darst et al., 1989). Tharp and Gallimore (1976) gathered their data by sitting in the front row of bleachers at Wooden's practices, allowing them to see and hear most of his verbal exchanges. Over the course of 30 hours of 15 practice sessions 2,326 of Wooden's behaviors were coded, which revealed that more than half (50.3%) of Coach Wooden's behavior was in the instruction category, which was defined as verbal statements about what to do or how to do it. He also used hustles (12%), praise (7%), and scolds (6%). It was also noted that Wooden rarely used scolds and most of his negative statements were followed up with instruction. In addition, nearly all of Wooden's statements were brief (shorter than 20 seconds in duration). In 2004 the same researchers reflected and reanalyzed their previous study and had a personal interview with Wooden to gain a different perspective of his coaching techniques. They noted that the "Hustles" were used to intensify the learning environment and also was a method of management. They found that they were able to better understand his immense planning context of every detail of every practice, which made possible his concise behavior, including the way he instructed his players in a brief and descriptive fashion (directed at what the player should do rather than merely describing a player's action). They also discovered why the category of praise (7%) might be considered low because John Wooden considered positive coaching behaviors to come in the form of instruction rather than praise (Gallimore & Tharp, 2004).

Later, Williams (1978) employed a modified version of the Tharp and Gallimore instrument to systematically observe a successful high school head basketball coach,

during which he observed practices twice a week throughout the season and gathered data using event-recording procedures. The results were compared to those of Tharp and Gallimore's study on John Wooden. The findings indicated that the high school coach emphasized instruction, as did Wooden, but used praise (25% of all behaviors) much more frequently than Coach Wooden did. Williams suggested that the differences in maturity, skill level, and motivation of players at the high school and college levels could possibly explain the variance in the use of praise (Lacy & Darst, 1985).

In 1979, Langsdorf followed up with a similar descriptive study of coaching behaviors through observation of Frank Kush, the head football coach at Arizona State University. Results of the study showed a variety of Kush's behaviors coded during 18 spring football practices. Of Kush's behaviors, 36% were in the instruction category and hustles, scold/reinstruction, and praise being the next highest occurring behaviors. In addition, 12% of behaviors were in the scold/instruction category (Landsdorf, 1979).

Lacy and Darst (1985) observed the behaviors of winning high school head football coaches using a modified form of Tharp and Gallimore's (1976) 10-category system. They did not include an Uncodable category; however, they added two new categories; Use of First Name (using the first name or nickname when speaking directly to a player) and Management (verbal statements related to organizational details of a practice session not referring to strategies or fundamentals of the game). The researchers recorded the behaviors of 10 coaches in three phases over the course of one season. Each coach was observed once during pre-season, early season, and late season. A quantitative analysis was conducted using an analysis of variance with repeated measures, followed by a post hoc Tukey's test. They discovered that coaches used a more intense teaching

style during the first part of the year while focusing on basics and fundamentals. Praise was used over twice as much as scold, reinforcing the researchers' opinion that coaches can accomplish more using positive interactions rather than negative interactions. In addition, this study also supported the idea that informal feedback is necessary to be an effective coach or teacher (Lacy & Darst, 1985).

Claxton (1988) used the ASUOI to conduct a study to describe and analyze systematically the coaching behaviors of more and less successful high school boys' tennis coaches during practice sessions. Successful coaches were categorized as having career winning percentages of at least 70%, and less successful coaches were labeled as having records under 50%. In Claxton's (1988) research, each coach was observed for three 10-minute periods three times throughout the season (pre-season, mid-season, and late season). The data were recorded according to specific events and the time each behavior lasted. Using a Mann-Whitney Test, the researcher analyzed the event recording data, and the different groups were compared for each behavior using the percentages of all intervals for interval recording analysis. Analysis of the data showed that the more successful coaches asked a significantly greater number of questions (form of instruction) of their players than did the less successful coaches. Of the 4,031 events recorded, preinstruction, concurrent instruction, and postinstruction combined to account for 20.1% of all behaviors, making Instruction the most observed category. Claxton concluded that the less successful coaches used more instruction and praise, but questioned less than successful coaches. He also indicated that the more successful coaches displayed more Silence and Management behaviors, but spent less time on them than the less successful coaches.

Lacy and Goldston (1990) conducted a study with the purpose to analyze the behaviors of five male and five female varsity high-school girls' basketball coaches during preseason and in-season practice sessions. Each coach was observed three times during the preseason phase and three times in the in-season phase. Systematic observation data were collected using event recording with 13 behavior categories of the ASUOI. Coaching behaviors were generally consistent across both phases of the season for both genders. The dominant behavior of the coaches observed was verbal instruction. Verbal behavior categories of an instructional nature (about 49.6 %) dominated the observed practice sessions in both phases of the season. The highest individual behavior category for the female coaches was postinstruction (21.3 %) whereas the male subjects employed concurrent instruction (21.8 %) the most often. A second major function was giving encouragement by using the praise and hustle categories to motivate athletes to maintain and intensify their efforts. These two behavior categories totaled 18.5% of all behaviors used by the coaches. These "encouragement" behaviors were exhibited slightly more by the female coaches (20.1 %) than their male counterparts (17.1 %). Both male and female coaches used over twice as many praise behaviors as scold behaviors. The third major area that accounted for an important part of the coaching behaviors observed was that of management. Management accounted for 15.3% of all behaviors for the total season. As with the study conducted by Lacy and Darst (1985) this study indicated a correlation between positive verbal feedback and coaching success.

Lacy and Martin's (1994) purpose was to examine starter/nonstarter motor-skill engagement (MSE) and coaching behaviors in different segments of preseason practices in collegiate women's volleyball. The participants were athletes and coaches of eight

volleyball teams. Segments of the practice were defined and coded as a warm-up, skill work, scrimmage, or conditioning. Coaching behaviors were coded with interval recording procedures (5-second observe, 1-second code) using an expanded version of the Arizona State University Observation Instrument (ASUOI). They discovered that slightly more behaviors were directed to individuals (26%) than the group (22.6%). Pre-instruction was primarily directed to the group, which demonstrated the typical teaching strategy of explanation and demonstration prior to activity. The only other categories directed more to the group than to an individual were management and hustle.

Bloom et al. (1999) studied Fresno State men's basketball coach, Jerry Tarkanian, using systematic observation. They adapted the observation system utilized by Tharp and Gallimore (1976) to create the Revised Coaching Behavior Recording Form. The changes to the original set of categories included Technical Instruction, Tactical Instruction, General Instruction, and Humor. Two researchers conducted a pretest, which consisted of three 2-hour observations, prior to the behavior being formally recorded. Coach Tarkanian did not know he was being observed at the time of the study. During the recording procedure, two observers sat independently of each other in an unobtrusive place. Every observed behavior exhibited by the coach was recorded on the coding sheet. Data were gathered throughout the whole regular season during practices only. The analysis of data involved combining the information from both observers and reaching an average percentage. In addition, the coach and his assistant were both interviewed at the end of the season to confirm that the concluding results were congruent with Coach Tarkanian's actual methods. They also had a chance to ask any questions about the study. In discussing the results, the researchers noted the importance of dividing the

Instruction behaviors into three separate categories for this study. After calculating the total number of statements, the observers found Tactical Instruction was used the most, which was 29% of the coded behaviors. They concluded that elite level coaches have a tendency to emphasize the cognitive or tactical aspects of their sport during practice. They also indicated that Tarkanian, like Wooden, did not use physical or negative punishment.

Butcher (2003) examined the leadership styles of female collegiate field hockey coaches. Sport researchers have generally accepted the idea that the personalities and leadership styles of coaches influence their teams and individual athletes (Terry, 1984). Research in the sport leadership area has been conducted under the general assumption that the type of leadership behavior exhibited by coaches will have a significant impact on individual athletes and teams (Amorose & Horn, 2001; Martin, Dale, & Jackson, 2001; Vealey, Armstrong, Comar, & Greenleaf, 1998). This study examined veteran and new coaches leadership behaviors of Training and Instruction, Autocratic, Social Support, and Positive Reinforcement. The new coaches exhibited more training and instruction, social support, and positive reinforcement than veteran coaches. In addition, the athletes rated the new coaches significantly higher in displaying the democratic leadership style whereas they rated the veteran coaches as more autocratic. When comparing the leadership styles of successful and unsuccessful coaches, a significant difference was found in training and instruction, social support, and positive reinforcement. Successful coaches used more positive reinforcement and social support, and unsuccessful coaches used training and instruction more. Overall, training and

instruction and positive reinforcement were found to be the behaviors exhibited by most coaches regardless of coaching experience.

Mesquita and colleagues (2008) conducted systematic observation using the ASUOI of male youth volleyball coaches. They found the combined categories of instruction (35.9%) accounted for the majority of recorded behaviors. However, they showed a lower use of instructional and praise behaviors compared with results of elite-level professional coaches. The data revealed a ratio of 3:1 of praise to scold respectively, demonstrating the use of positive reinforcement as a teaching tool. Additionally, the findings on the use of first names, questioning, and negative/positive modeling, important strategies used in teaching to promote active learning, were very limited in use.

Recently Becker and Wrisberg (2008) observed Pat Summitt throughout the 2004–05 season for a total of 504 minutes consisting of 3,296 coded practice behaviors. Few coaching researchers have used comparable research strategies to contrast a highly successful collegiate women's basketball coach with one of the all-time great men's college basketball coach John Wooden. The purpose was to systematically examine Summitt's practice behaviors comparing them to the results of the 30+ year old study of John Wooden and to observe any differential treatment in the form of feedback to athletes. Consistent with previous research on successful coaches, Summitt provided instruction more frequently (48%) than any other coaching behavior (Bloom et al., 1999; Kahan, 1999; Lacy & Darst, 1985; Segrave & Ciancio, 1990; Solomon, Striegel et al., 1996; Tharp & Gallimore, 1976). The most common form of instruction that Summitt provided during practices was concurrent instruction. As players executed various tasks, she frequently provided them with technical and tactical information. Another interesting

aspect of Summitt's instructional behavior was the higher frequency of preinstruction (before action) and lower frequency of postinstruction directed toward the team. In the study, nearly half (45%) of Summitt's statements were directed toward individual players. The second most frequent type of feedback Coach Summitt provided during practice sessions was praise (15%). She directed hustle statements toward the team as a whole more often than toward individual athletes. Throughout the course of drills, she utilized hustle statements, which comprised 11% of her overall coaching behaviors, which was similar to John Wooden. Therefore, the researchers concluded that one factor that might have contributed to the success of Summitt was the careful planning of intense, game-like practices.

Feedback clearly has been an important component of the coaching process. Despite slight differences and independent of study design or population, the current body of literature gained from systematic observation suggests that successful coaches provide greater amounts of overall feedback in practice than less successful coaches (Becker & Wrisberg, 2008; Bloom et al., 1999; Butcher, 2003; Lacy & Goldston, 1985; Mesquita et al., 2008; Markland & Martinek, 1988; Tharp & Gallimore, 1976). Furthermore, the results of these investigations have demonstrated the category of 'instruction' as one of the most observed behaviors of feedback for both male and female coaches. Moreover, as Black and Weiss (1992) claim, effective coaches tend to cultivate a more positive environment through the use of praise for their players than their less effective counterparts. Potrac and colleagues (2007) verified the use of praise by top-level coaches as an instructional strategy to enhance self-efficacy and confidence levels of players, and as a valuable tool for reinforcing desired athlete behavior.

The Effect of Gender on Coaching Behaviors

If coaching educators are to aid coaches in the practice of effective coaching techniques, more must be learned about the factors that relate to coaches' exhibition of desirable behaviors. Of these factors, gender may play a role in the behaviors of coaches. Males may place more value on certain aspects of coaching more than females and vice versa. Little research has been conducted regarding the differences in actual behaviors of male and female coaches. In addition, relating to female athletes and relating to male athletes may require different methods of coaching.

Eitzen and Pratt (1989) focused on differences in the coaching philosophy of both male and female coaches of female basketball teams. They used questionnaires to collect the data, which specified five areas of coaching philosophy: (a) the coach's role in the overall development of athletes, (b) conditions believed essential to maximize team performance, (c) team rules used, (d) use of sport aphorisms, and (e) the expectations of the athletes. Six hundred questionnaires were sent to randomly selected high school girls basketball teams, and 250 were used in the study. The significant differences found were minimal. Only one comparison in the overall development of the athletes was statistically different. The female coaches placed a greater importance on helping the athlete develop a positive self-image. In the second area, coaches were found to value the same conditions essential to maximize performance, regardless of gender. In team rules, females tended to have rules focusing on academic performance, practice the day before a game, good sportsmanship, and profanity; male coaches were more likely to include curfews and enforce rules on punctuality relative to practices. In the few

differences that existed concerning sport aphorisms, the females placed greater importance on the statements than the male coaches.

A rather unique characteristic of competitive girls' basketball has been that both males and females serve as coaches. Using systematic observation, Lacy and Goldston (1985) analyzed the behavior of male and female coaches in high school girls' basketball. The participants included five female and five male coaches in Dallas-Fort Worth, Texas. Each coach was observed three times during the preseason and three times during the in-season, using the ASUOI. Coaching behaviors were generally consistent across both phases of the season for both genders. When analyzed separately, male coaches were found to use concurrent instruction the most, and females exhibited more post instruction. The biggest difference during this part of the season was observed in the Management category, which was used more by the female coaches. When the data were analyzed across the whole season, concurrent instruction was used most frequently and post instruction was ranked second. The greatest disparities between genders were the categories of postinstruction, preinstruction, and management. It was also interesting to note the variability of the genders across the phases in the use of first name category. The female subjects exhibited this behavior at a .97 RPM in the preseason and the male coaches used first names from .50 RPM in the preseason. During the in season phase, the first name usage was almost identical for both genders. Although there were slight variations in behaviors, the gender differences of displayed behaviors were not considered significant.

In the studies of Dubois (1981) and Millard (1990), the male coaches gave more technical instruction and less encouragement than did the female coaches. However, the

gender differences noted in those studies might have been confounded by other related factors. As an example, Sherman and Hassan (1986) reported that high-experience coaches gave more technical instruction than did low-experience coaches. Indeed, males in the Millard study had over twice the years experience coaching as did the females and they were significantly older. Thus, differences found by gender may have reflected differences in experience and/or age of the coaches. Another factor that appeared to be gender related was the past athletic participation of coaches. In an extensive study of high school coaches in Oregon, Sisley and Capel (1986) found a greater percentage of the males than females had been varsity collegiate athletes. In summary, although differences have been found in the frequency with which male and female coaches engage in technical instruction and encouragement, years experience coaching, age, and past athletic participation have emerged as factors that could be contributing to gender behavior differences of coaches. Yet, the degree to which gender contributed to coaches' behaviors remained unclear.

In another study, Pratt and Eitzen (1989) examined the differences in philosophies between male coaches of male and female basketball teams. Their purpose was to detect any differences in the coaching philosophies of male coaches with athletes of different genders. Questionnaires, which focused on five specific areas of the coaches' beliefs and behaviors, were sent to the head coaches for boys and girls' basketball. In the overall development of the athlete, significant differences existed in six of the eight items on the questionnaire. Male coaches of male teams attempted to influence the athlete's life outside of sport much more than male coaches of female teams. Few differences were found in the conditions essential to maximize performance. For example, male coaches of

female teams tended to focus on the behaviors during practice. In comparing the coaches' expectations of their athletes, the coaches of male teams place more importance on the athletes' self-discipline and control, and on regarding the team higher than themselves than coaches of female teams. This study also found gender to not be a significant factor and also suggested that differences in coaching of male and female athletes have been due to personality and teaching style differences rather than as a result of gender.

Coaching Behaviors and Expectancy Theory

Actions happen because of the expectations people hold for themselves and those of others (Jones, Armour, & Potrac, 2002). The investigations of expectations affecting actions has developed into a theoretical framework known as Expectancy Theory that evolved from the work of the 20th-century sociologist Robert Merton (1948) who coined the synonymous term, the self-fulfilling prophecy. Merton utilized this concept to explain various sociological phenomena. He found that when something is expected to happen, the initial behavior actually caused the behavior to occur. The classic work in education of Rosenthal and Jacobson (1968), *Pygmalion in the Classroom*, studied teachers' differential treatment of students. It demonstrated that children who were expected to be high achievers improved significantly more than those who were expected to achieve less. In a later study, Rosenthal (1974) determined that individuals regarded as high achievers were awarded more beneficial treatment than those considered low achievers in four ways. Termed the Four Factor Theory, Rosenthal (1974) showed that high expectancy students were issued superior quality feedback in greater amounts, were afforded a warmer socio-emotional climate, were offered more opportunities for input

(i.e., more challenging tasks), and were given additional output opportunities (i.e., given more time to respond to questions). This phenomenon of teachers treating students of high ability/expectancy differently than those of lower ability/expectancy became known as Expectancy Theory (Cousineau & Luke, 1990; Horn, 1984; Markland & Marinek, 1988; Sinclair & Vealey, 1989). These studies prompted researchers to further investigate the effects of expectations of educators towards students and later of coaches towards athletes.

Expectancy Theory suggests that through a series of phases coaches directly influence and impact athlete ability, skill, and performance. Current literature characterizes the relationship between coach expectations and athlete performance as a 4-step process (Horn, 1984; Horn, Lox, & Labrador, 2006; Solomon, 2001). In the first step, the coach develops expectations for athletes based on three types of impression cues: personal (i.e., race, gender, body size), performance (i.e., coordination, speed, agility), and psychological (i.e., confidence, motivation, anxiety). In the second step, the coach's expectations are communicated to the athlete in verbal and nonverbal ways in how s/he behaves toward the athlete (Horn et al., 2001; Martinek, 1989; Sinclair & Vealey, 1989; Solomon, 2001; Solomon & Kosmitzki, 1996). The third step includes the athlete becoming aware of the coach's treatment and it consequently affecting the athlete's own self-perceptions and behaviors. In the fourth step, the athlete responds to this treatment and her/his behavior conforms to the original expectation, thus completing the expectancy cycle. This serves to reinforce to coaches that their original judgment of the athlete's ability and skill was accurate. For the purposes of this review the expectancy cycle is not dictated by how players were rated against other players in the general public,

athletes' perspectives, or their actual performance. Rather all the steps, specifically differential treatment, are based upon the assessments and perspectives of the coaches.

A major limitation of previous expectancy research has been the lack of accurate understanding and assessment of coach expectations of athlete ability and skill. In the past, this theory and the vast majority of research on expectancy relied primarily on the assumption that coaches' used impressions of physical ability to assess athlete expectancy level. Expectancy Theory suggested that two primary categories of information were utilized for assessment: personal and performance cues. Until more recently, psychological cues were not included in expectancy research and not commonly used in expectancy measuring tools.

Initially, researchers utilized a rank-order method to distinguish between the coach's perceptions of high and low ability athletes (Sinclair & Vealey, 1989; Solomon, DiMarco, Ohlson, & Reece, 1998; Solomon & Kosmitzki, 1996; Solomon Striegel et al., 1996). This method required coaches to hierarchically rank athletes from most to the least skilled, resulting in rankings that were supposedly primarily based on athletes' physical skills and abilities (Solomon, 2001). Those who have worked in any athletic capacity know coaches use more information for assessment beyond athletes' physical abilities and skills.

Coaches use a multitude of sources for information, as well as physical impressions, to assess the abilities and skills of their athletes when determining expectations. To address the issue Solomon (2001) conducted research that confirmed that head coaches use psychological sources in order to assess overall athletic ability and skill, specifically the psychological impression cue of confidence was included along

with performance impressions, which extended Expectancy Theory to include psychological cues as potential sources of expectancy information. Due to this research, the Expectancy Rating Scale (ERS) was created to overcome some of the limitations of the rank-order method (Solomon, 2001).

Additional research has continued to support the use of psychological cues by coaches and the development of tools to measure those cues (Solomon, 2010). Interviews conducted with 18 coaches of both individual and team sports revealed that coaches used a multitude of factors and impressions to judge ability and skill including but not limited to the traditional physical ability/performance (Solomon & Rhea, 2008). From the results of this study, the Solomon Expectancy Sources Scale (SESS; Solomon, 2003), a 30-item survey, was developed to provide a more comprehensive report of the sources of information used by coaches to evaluate athletes.

Further qualitative investigations using the SESS and other measures have supported the concept of psychological cues being an important factor contributing to coaches' perceptions of athlete expectancy (Solomon, 2010; Solomon & Rhea, 2008). In an investigation of 70 Division I head basketball coaches, *Work Ethic*, *Receptivity to Coaching*, *Willingness to Learn*, *Love of Sport*, *Willingness to Listen*, and *Competitiveness* were the six characteristics that emerged from the SESS as the predominant sources of information coaches used when assessing athletes (Becker & Solomon, 2005). Another investigation on soccer coaches found that the coaches perceived athletes attitudes to be a function of categorizing athletes as high or low expectancy (Wilson, Cushion, & Stephen, 2006). The previous investigation found that coaches believed that attitude was an important element to developing the conditions

necessary for advancement of an athlete. This could illustrate the magnitude of the importance of knowing and understanding use of psychological cues by coaches. In a qualitative investigation of five male and female Division I head coaches of various sports with at least 5 years of experience, they identified the characteristics they sought in athletes, especially when recruiting. Although all the coaches in the study identified ability, at least three discussed other qualities they used to establish athletes as successful for their teams, specifically the characteristic of competitiveness and work ethic (Selby, 2009). These findings have assisted researchers in understanding and measuring how coaches determine expectancy status of athletes.

Furthermore, understanding the first step of evaluation has been important because coaches' initial impression of an athlete is likely to remain inflexible over the course of time, even when new information regarding athlete ability becomes available (Solomon, Golden, Ciapponi, & Martin, 1998; Solomon & Kosmitzki, 1996; Solomon & Rhea, 2008; Wilson et al., 2006). Simply stated, first impressions were prevailing and rarely did coaches re-evaluate their initial expectation of athlete achievement. Two studies (Solomon & Kosmitzki, 1996; Solomon, Golden, et al., 1998) demonstrated that coach expectations of athlete's ability tended to be inflexible whereas the coach's perceived potential for athletic improvement was changeable. Researchers examining soccer coaches found that the coaches were willing to articulate to athletes how they could change the coaches' perceptions, however, the majority of the coaches admitted that they usually did not, if ever, change their expectancy status of an athlete (Wilson et al., 2006). In the study of Pat Summitt, a consistent athlete expectancy assessment of her athletes was demonstrated from the beginning to the end of a basketball season (Becker

& Wrisberg, 2008). Thus, as with the investigation by Rejeski, Darracott, and Hutslar (1979), it appears that once coaches identify athletes as either high or low expectancy, they tend to retain those perceptions. This inflexibility of coach expectations demonstrated how important the initial evaluation could be on an athlete's development and future performance.

This inflexibility has been important specifically when the second step in the expectancy cycle was considered, specifically how coaches' expectations had the potential to influence coaches' behavior and athletes' perceptions of their own abilities and skills. Rejeski et al. (1979) extended the notion from education to a sport setting that coaches' feedback correlated to the perceived skill level of athletes. In their study, they coded coaching behaviors directed at high and low skilled athletes in a youth sports basketball league. Consistent with findings reported in the classroom, the high ability children were reinforced more than low-ability children. It was also found that coaches gave more general technical information to low ability than to the high ability children.

This differential display of behavior became known as differential treatment and generally emerged through the form of quality and quantity of feedback given to athletes (Mavi & Sharpe, 2000). According to Solomon and Kosmitzki (1996), this process of "feedback refers to the condition whereby coaches offer varying amounts of information to athletes based on perceptions of ability" (p. 165). Continued research using similar methods has suggested that high expectancy athletes received a greater quantity and quality of feedback than their low expectancy teammates (Sinclair & Vealey, 1989; Solomon, DiMarco, et al., 1998; Solomon & Kosmitzki, 1996; Solomon & Rhea, 2008; Solomon, Striegel et al., 1996).

This differential treatment caused by coaches' expectations, can potentially affect athletes permanently depending on how coaches' perceptions and treatment are demonstrated. Because coaches tend to have inflexible perceptions of athletes, it is possible that they may communicate an enduring high or low expectancy status to the athletes (Solomon & Rhea, 2008). As a result, coaches could continue in the behaviors they displayed toward those athletes. This may result in high expectancy athletes consistently receiving a greater quantity of relevant feedback than the low expectancy athletes (Solomon, Golden et al., 1998).

Athletes' perceptions of differential patterns of feedback from coaches depending on expectancy status have also been documented (Sinclair & Vealey, 1989). Athletes' feelings of competence appear to be related to the amount of praise and instruction they received from their coach in response to successful performance attempts (Allen & Howe, 1998; Black & Weiss, 1992). Athletes interpreting the expectations of their coach as low may be negatively affected because their enthusiasm for participation and future performance decreases. Conversely, if an athlete interprets the expectations of the coach to be high, their enthusiasm and performance may be heightened. In essence, researchers have suggested that athlete performance hinges on the continued conveyed expectations of the coach (Martinek, 1981; Martinek, Crowe, & Rejeski, 1982).

It is important to note that some coaches' behavior has not been congruent with their expectations, thereby demonstrating that they do not engage in the expectancy process. This was found when studying coach Pat Summitt who was found to give both high and low expectancy athletes similar amounts of quantity and quality of feedback (Becker & Wrisberg, 2008). Instead, she distributed an equitable proportion of feedback

to both high and low expectancy players, this finding was not consistent with previous expectancy literature (Becker & Wrisberg, 2008; Lacy & Martin, 1994; Markland & Martinek, 1988; Sinclair & Vealey, 1989; Solomon, DiMarco et al., 1998).

Results from Smith et al. (1977) indicated that athletes responded most favorably to coaches who engaged in higher percentages of supportive and instructional behaviors. Furthermore, expectations may serve to reinforce an athletes' competence if the expectation is perceived, interpreted, and adopted. These findings are particularly important in light of the research suggesting that athletes with higher levels of confidence are more likely to succeed than those lower in confidence (Gould, Guinan, Greenleaf, & Chung, 2002; Weinberg, Grove, & Jackson, 1992). Knowing that differential treatment relates to coach expectations and potentially affects athlete performance, it reinforces the importance of coaches' being aware of the expectancy cycle and their behaviors.

Summary

Considering the ever-increasing rates of sport participation it is imperative to investigate the behaviors that may contribute to successful coaching outcomes. Because coaching is often referred to as a teaching experience, systematic observations of coaching behaviors have been developed and adapted from previous research in education. To improve the quality and efficacy of behaviors specific to coaches, specific observational tools have been created and employed throughout the literature. This research has provided relevant information that can be used by both researchers and coaches to improve coaching science. An investigation of past research has revealed a tremendous amount of information relative to coaching. From this extensive body of literature, the following themes have received significant attention: behavior trends

exhibited by successful coaches, the potential effects of gender on coaching behaviors, and the impact of Expectancy Theory on coaches' actions.

Through a variety of systematic observational studies, a multitude of coaching behaviors have been categorically identified. Some of the more prevalent behaviors included instruction, praise, and hustle. The literature suggested various types of instruction as the dominant behavior of successful coaches. Positive feedback, such as praise, has also frequently been observed as a common coaching strategy. Additionally, highly successful coaches employ highly organized and structured practice plans. Although differences have been observed relative to coaching experience, evidence suggests that these behaviors seem to exist among coaches regardless of the type of sport or the gender of the coach.

With increasing levels of sport participation for both males and females, the role of gender in coaching has been investigated. Surprisingly, the few significant differences that have been observed relative to gender have been mild. The literature suggests that regardless of the coaches' or athletes' gender, similar coaching behaviors are observed. Specifically, instruction remains the most prevalent strategy for both male and female coaches.

Another major tenant of coaching science has been the role of Expectancy Theory. Expectancy Theory suggests that a coach's expectation of an athlete's ability will influence the behavior and subsequently the outcome for both parties'. Athletes who are perceived as more skilled, and therefore expected to perform better, may receive more instruction and feedback from their coaches than their less skilled teammates. This phenomenon tends to remain salient throughout the course of the coach athlete

relationship. Sadly, this behavior could prove detrimental to successful outcomes for coaches and athletes alike. Interestingly, these findings may be related to the level of experience and expertise of the coach and therefore not universally practiced.

Although a great deal of scholarship has been dedicated to coaching science, it seems beneficial to study coaches using a similar observational instrument. The ASUIO was used in this study to systematically record and then compare the behaviors of successful high school girl's basketball coaches to a recent study of a highly successful collegiate women's basketball coach. These findings were also compared to similar studies using the same observational instrument. In addition to coaching behaviors the current study evaluated the effects of gender and Expectancy Theory to improve both the theory and practice of coaching science.

CHAPTER 3

METHODS

The primary purpose of this study was to identify instructional and non-instructional coaching behaviors of a successful male and female head coach of high school girls' basketball teams. The second purpose of this study was to investigate the theory of expectancy (Horn, 1984) by relating coaches' expectancy status (high vs. low) of athletes to coaching behaviors, quantity and quality of feedback, for successful high school coaches in basketball team practice settings. This chapter described the participant selection criteria, instrumentation, methodological procedures, and statistical analyses that were used in this study.

Participants

Participants for this study were one male and one female successful high school varsity girls' basketball head coaches in the mountain west area of the United States. Both participants were head coaches at high schools classified as 5A, the classification for schools with the largest enrollment. The participants were chosen due to the qualifications that would most closely match the accomplishments of the successful collegiate coach, Pat Summitt. Before participating in the research study completed in 2005, Pat Summitt had completed 30+ years as a head coach, accumulated an .839 winning percentage (852-167), won 26 tournament and conference championships, and 8

NCAA titles. Likewise, the participants in this study were selected based on criteria that closely matched Pat Summitt's success including quality programs, total career wins, state tournament appearances, state championships, years of coaching experience, and willingness to participate in the study. Success and inclusion criteria for coaches included the following as a head coach: (a) coaching at 5A high school, (b) total career wins at or above 300, (c) 10 or more regional championships, (d) 10 or more state tournament appearances, (e) 2 or more state championships, (f) 15 or more years of coaching experience, and (g) willingness to participate.

The female coach had 17 years as head coach at her current school with 4 years previous coaching experience. At the current high school she had coached with a winning percentage of .754 (295-96) with teams winning 9 regional championships and 2 state titles. She had also coached teams to 17 state tournament appearances with teams going to the finals 4 times, placing 2nd twice. For the current season her team had gone 19-5 in their league, also winning the regional championship title. From all the teams combined, 33 students have continued on to play basketball at a collegiate level.

The female coach's team consisted of 10 varsity athletes with three seniors and no freshman. She did not consider any junior varsity athletes to be varsity players even though some of the junior varsity athletes were to have limited varsity game playing time, especially when a varsity player sustained an injury. The female coach used only her designated 10 varsity players and 6 junior varsity players during games. The five starters received the majority of the playing time with the other athletes substituting sparingly, regardless of the competition. Of note one junior varsity athlete received more playing time than one of the varsity athletes. A typical practice was highly structured and

consisted of 2+ hours and a couple of Saturday practices. Her practices consisted of game specific drills, usually timed. Practices often included junior varsity athletes versus varsity athletes for scrimmages. Practices were run using one other varsity assistant coach and two junior varsity assistant coaches. The freshman team practiced separately, although the freshman coach would often assist with varsity practices. The female coach also used graduate students and professors from the local university to assist with monthly sport psychology consulting during practices. Periodically throughout the season, auxiliary help would be brought in during practices for specialized training including but not limited to strength training, mental preparation, and technique of shooting.

The male coach had 21 years as head coach plus coaching experience for 19 years at a previous high school. He also became the second winningest basketball coach in the state. He had a .831 winning percentage (409-83) with a 17-5 season record. His teams had won 13 regional championships and 4 state tournament titles. His teams had also made 21 consecutive state tournament appearances and made it to the final four 12 times. From all these teams, 52 athletes have continued on to play basketball at various collegiate levels.

The male coach considered 18 athletes to be part of the varsity team including three seniors and two freshmen. These 18 athletes included all athletes who played junior varsity. Of the 18 athletes, only 5 played strictly on varsity, whereas the remaining 13 received playing time on varsity and junior varsity. The five starters received the majority of the game playing time, however, the male coach would frequently substitute a multiplicity of athletes depending on the competition. The junior varsity and varsity

consistently practiced together and were separated for learning into positions versus varsity playing level then combined for team scrimmaging. Practices were 2+ hours daily and every Saturday except on game days, which usually consisted of two days of the week. The practices were efficient and organized, using basic skill drills and game play. The two varsity assistant coaches were also the junior varsity coaches. The two assistant coaches taught and called the majority of the offense plays during practice and games. There were athletic trainers who also assisted with athlete injuries; however, the auxiliary assistance was limited from athletic trainers and other outside sources.

Measures

Demographic Information

Background information, including coaching experience and accomplishments, on both coaches was obtained through personal interviews (see Appendix A). Background information about the athletes was obtained from coaches (see Appendix B). Information provided about the athletes included their grade in school, uniform numbers, and playing time.

Arizona State University Observation Instrument

The Arizona State University Observation Instrument (ASUOI; Lacy & Darst, 1984) was used to assess coaching behaviors (see Appendix C). ASUOI was used in order to analyze coaching behaviors with the same observation instrument used in many previous studies, thus making meaningful comparisons and valid conclusions (Darst & Goldston, 1990). It is a widely used observational instrument in coaching research and was created specifically to examine coaching behaviors during practice sessions (Kahan,

1999). The behavioral categories of the ASUOI are based on the conceptual rationale that satisfy the criteria for both content and face validity (Lacy & Darst, 1984). The use of this observational system yielded the total number of times a particular behavior occurred during a practice session. It is comprised of 13 behavioral categories representing three general types of behaviors: instructional (preinstruction, concurrent instruction, postinstruction, questioning, manual manipulation, positive modeling, negative modeling), non-instructional (hustle, praise, scold, management, other), and dual codes (statements that include the recipient's name). For the purposes of the current study and to examine expectancy theory, the category of dual codes represented statements that were specifically directed toward individual players. The coaches' use of the particular player's first name with the statements fitting into another category was coded as both first name and the behavior category, then used to determine the quantity and quality of feedback provided to that particular player. It should be noted that coaches' behaviors toward individual players was established during the coding process through the coaches' use of the athletes' first name, as well as coaches' physical proximity, eye contact, gestures, and use of gaining conscious attention of the athletes.

Modified Expectancy Rating Scale (MERS)

A major limitation of previous expectancy research has been the lack of a complete assessment of coach expectations of athlete skill and ability, specifically the ability to measure coaches' use of psychological cues. Initially, researchers used a rank-order method to distinguish between the coach's perceptions of high and low expectancy athletes (Sinclair & Vealey, 1989; Solomon, DiMarco et al., 1998; Solomon & Kosmitzki, 1996; Solomon, Striegel et al., 1996). However, it was left to the coaches to

define skill when ranking athletes.

Solomon (1993) created the Expectancy Rating Scale (ERS) in an attempt to scientifically define skill level. Unlike the rank-order method, the ERS is a 5-item instrument that enables coaches to rate athletes independently of one another and give equal ratings to athletes with similar skills and abilities. Like the rank-order method, the ERS limitation was its lack of evaluation of other characteristics (i.e., psychological skills/abilities) that coaches use when evaluating athletes, because its primary emphasis was an evaluation of physical abilities (Solomon, 2001). More recently, Solomon (2003) created the Solomon Expectancy Sources Scale (SESS) to determine the most common characteristics that coaches use to evaluate athlete skill and ability. This 30-item instrument was used to assess the degree of importance coaches placed on various physical and psychological characteristics. The investigation results suggested psychological cues play an important part of coaches' decisions concerning expectancy (Solomon, 2003, 2010; Solomon & Rhea; 2008).

More recently, Becker and Wrisberg adapted the ERS by adding three items to create the Modified Expectancy Rating Scale (MERS; Becker & Wrisberg, 2008; Solomon, 2003; Solomon & Rhea, 2008). The MERS consists of 8-items (see Appendix D for MERS) measuring both physical and psychological skills and abilities used by coaches to establish expectancy status of athletes (Becker & Wrisberg, 2008). Content validity for the MERS was established by obtaining feedback and consensus from three experts in the field of sport psychology in a previous study (Becker & Wrisberg, 2008). The MERS provided a reliable tool to assess coaches' assessment of athlete skill and ability in a more comprehensive manner (Becker & Wrisberg, 2008).

Procedures

After examining the past 5 years of the Utah 5A girls' basketball state tournament, select coaches were contacted for further interviewing. Before the start of the girl's basketball season, head girls' high school basketball coaches were contacted and interviewed via email and phone to determine if they fit the criteria for the study. One male and one female coach were invited to participate and then a meeting was scheduled to discuss the purposes and procedures of the study (i.e., only practices were videotaped). The coaches were provided a description of the study and informed consent was obtained. Institutional and school district approval were obtained to conduct the investigation and informed consent statements were read and signed by each coach. Athletes and their parents were also be given assent/permission forms with an opt-out option.

Parts of the observed practices were defined as particular segments. The definitions of these segments were: (a) warm-up: Any activity not using a basketball during the practice, such as stretching, to prepare for the workout or practice; (b) skill work: Any drill the purpose of which was to develop a particular skill or group of skills necessary for game play; (c) scrimmage: Five players versus five players in a game-like condition; and, (d) conditioning: Activity with the sole purpose of increasing the level of physical fitness in such areas as strength, endurance, or flexibility.

Over the course of the season, a total of 553 minutes of practice with the female coach and 590 minutes of practice with the male coach (30 minutes to 2 hours per practice) were video recorded at one to 2-week intervals depending on practice schedules (games, weekends, school vacations, High School Activities Association regulations).

Observations took place during typical practices and started when practice began and continued throughout the practice (i.e., warm-ups, drills, half-court work, full-court work). To maximize the viewing perspective, the video camera was positioned courtside or in the bleachers. This allowed the researcher to track the coaches as they moved from one end of the court to the other. During all of the recorded sessions, coaches wore a wireless microphone to ensure that all verbal communication was acquired. Coaches were allowed to turn off the microphone when talking to assistant coaches, parents, administration, or athletes concerning topics that may be considered confidential (deaths in the family, counseling, etc.) and not pertaining to coaching. The input receptor for the wireless microphone was attached to the video camera. Therefore, all of the audio and visual data were simultaneously recorded onto the same digital videotape.

After the second week of practices, both coaches completed the MERS on all athletes that were selected for the varsity team and placed them in a sealed envelope. Two weeks after the final game of the season, coaches completed the MERS a second time for each athlete based on their perceptions of the athletes' overall skill and ability. Coaches also rank-ordered all varsity team members according to the rank-order method after the finish of the season. Both coaches placed these evaluations in a sealed envelope. Total playing time for all varsity athletes was also obtained from coaches as one of the four components (preseason MERS, postseason MERS, average playing time, rank-order) to determine high and low expectancy athletes.

Once all the data were collected, two or three observers watched the video footage and coded the coaches' behaviors using the ASUOI (Lacy & Darst, 1984). Observers were trained by completing a manual that was specifically designed for researchers using

this instrument (Solomon & Reece, 1995). Event recording provided a frequency count of defined behaviors as observers coded each discrete behavior as it occurred. The same consensus building technique utilized by Becker and Wrisberg (2008) was employed to determine the coding of all coaching behaviors. That process consisted of pausing the videotape after each statement and observers independently coding the feedback. If they agreed on the coding category, the data were entered. If they did not agree, they viewed the segment again until there was consensus. No feedback statements were coded until consensus was attained. To minimize possible experimenter bias, coaches' MERS ratings (both pre- and postseason) for each player were not viewed until all coding was completed.

Data Analysis

Because this study was a field-based investigation, it was not possible to standardize practice sessions. Thus, the length of practices, the selection of which segments would be included in the practices, and the length of the segments were out of the control of the researcher. Statistical analysis for all data in this study was conducted on a personal computer using SPSS version 15.0 (SPSS, Chicago, IL, USA). All data were entered into an Excel spreadsheet and checked by a research assistant to verify the correctness of data input prior to being imported into SPSS.

Coaching Behaviors

Data were coded and quantified for each behavior category for both the team and individual athletes. Percentages and rate per minute (RPM) for each behavior category was calculated and totaled. RPM was calculated by dividing the total of each category by

the total number of minutes observed. Percentages were calculated by dividing the frequency of each independent behavior category by the total frequency of all the categories combined, then that number was multiplied by 100. It should be emphasized that the resultant figure represented a percentage of total behaviors, not percentage of time. By definition, the use of first name had to accompany another behavior, therefore, to calculate the percentage of each behavioral category, the use of first name was excluded and the percentage of this category was considered separately. If first name was analyzed as an independent category it would have decreased the values of other behaviors and the true percentage of these behaviors would have been distorted (Lacy & Goldston, 1990).

Designation of Consistent Expectancy Status

A Pearson Product Moment correlation was used to determine if the coaches' perceptions of their athletes would remain consistent over the course of the season. If there were a high and a statistically significant correlation between the coaches' preseason and postseason MERS ratings of athletes, there would be support for the hypothesis that coaches' perceptions remained relatively consistent over the season.

Designation of High and Low Expectancy Athletes

Coaches' expectancy assessments (preseason MERS scores, postseason MERS scores, ranking) along with each player's average amount of playing time for the entire season was analyzed to see if average playing time, ranking, and MERS assessments predicted the same athletes as low expectancy and high expectancy. Specifically, a Pearson Product Moment correlation was calculated to determine the relationship

between all four measures (preseason MERS, postseason MERS, ranking, and average playing time).

Because the number of athletes varied on each team, the scores for each of the four measures were then converted to ranks and combined to establish a composite expectancy score for each athlete. Lower values indicated a higher expectation. High and low expectancy was determined by partitioning athletes into halved samples according to their composite expectancy score by designating athletes scoring above the 50th percentile as high expectancy ($n = 5, n = 9$) and athletes scoring below the 50th percentile as low expectancy ($n = 5, n = 9$).

Three different types of scores were computed for each athlete for the purpose of analyzing quantity and quality of feedback to athletes. The first frequency score was an individual behavior score, which was calculated by dividing the number of individual behaviors received from the coach by the total number of individual behaviors given to all the athletes on that particular team. The second frequency score was an overall received behavior score, which was calculated by dividing the number of individual behaviors received from the coach by the total number of individual and group behaviors given to the teammates and the team in general.

Thirdly, for the purposes of analysis, all frequency counts for each category for each athlete were converted to proportion scores. Eleven behavior type scores were calculated representing 11 of the 13 behavior categories used in the ASUOI, first name and other were excluded. Each feedback type was converted to a proportion by dividing the number of individual received behaviors by the athlete in that category by the total number of individual behaviors received by that athlete. For example, an athlete's score

on postinstruction represents the proportion of postinstruction that athlete received in relation to all of the individual behaviors she received from the coach.

A multivariate analysis of variance (MANOVA) was conducted to analyze whether differences existed in both quantity and quality of feedback provided to high and low expectancy players for each category represented on the ASUOI. Independent variables used for the MANOVA were the players' expectancy status (high, low) and the dependent variables were the behavioral categories represented on the ASUOI.

CHAPTER 4

RESULTS AND DISCUSSION

The purpose of this study was to identify coaching behaviors of a successful male and female head coach of high school girls' basketball teams and determine if the factors of gender and expectancy affected the coaches' behaviors. The participants in this study included one male and one female successful high school head basketball coach of girls' basketball teams. The remaining part of this chapter clarifies the results that were found in the current study and presents a discussion of those results.

Results

Primary Aim and Hypothesis

The primary aim of this study was to determine the instructional and non-instructional coaching behaviors of a successful male and female head coach of high school girls' basketball teams. It was hypothesized that both the male and female coach would provide instruction (preinstruction, concurrent instruction, postinstruction) at a higher rate than any other coaching behavior. Also, there would be no significant differences in terms of coaching behaviors between male and female coaches at high school basketball practice settings. It was hypothesized that coaching behaviors demonstrated by the high school coaches would be similar to those demonstrated by collegiate coach, Pat Summitt.

Secondary Aim and Hypothesis

The secondary aim of this study was to investigate how the theory of expectancy (Horn, 1984) correlated to coaches' behaviors due to their expectancy status (high vs. low) of athletes. Based on the results of previous expectancy research, it was hypothesized that both coaches' perceptions of their players' skills and abilities would remain consistent over the course of the season. Coaches would provide differential treatment in the form of feedback based on perceived athlete expectancy. High expectancy athletes at the high school level would receive a greater quantity and quality of feedback than lower expectancy athletes. There would be no significant difference between genders in terms of differential treatment of athletes for successful basketball coaches at team practice.

Throughout the 2009-2010 season at approximately two-week intervals a total of 553 minutes of practice time was observed, revealing 3,052 practice behaviors for the female coach and a total of 590 minutes consisting of 3,610 practice behaviors were coded for the male coach. Table 1 provides a summary of both coaches' frequencies of behavior towards combined team and individual basketball athletes including the total number of behaviors observed, percentage, and RPM for each defined category of the ASUOI. Table 2 provides a breakdown of the behaviors from Table 1 into both coaches' behaviors toward individual basketball athletes and the team.

When examining Table 1, the behavior used most often by both coaches in the instructional categories was concurrent instruction (female 13.1%, male 12.9%) followed closely by postinstruction (12.1%) by the male coach and preinstruction (11.4%) for the female coach. Interestingly, the two coaches' overall most exhibited behavior was in the

Table 1

Coaching Behavior Totals, Percentages, and RPM for the Female and Male Coach

Behavior	Total		% Female		Confidence Interval		RPM		% Male		Confidence Interval		RPM	
	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male
Instructional Behaviors														
Pre-Inst.	349	161	11.4%	4.5%	10.27-12.53	3.83-5.17	.63	.27						
Con. Inst.	399	466	13.1%	12.9%	11.92-14.39	11.81-13.99	.72	.79						
Post-Inst.	327	438	10.7%	12.1%	9.69-11.81	11.04-13.16	.59	.74						
Question	258	189	8.5%	5.2%	7.51-9.49	4.48-5.92	.47	.32						
Phy. Assist	18	35	.6%	1.0%	.33-.87	.68-1.32	.03	.06						
+ Model	59	69	1.9%	1.9%	1.42-2.38	1.5-2.34	.11	.12						
- Model	13	13	.4%	.4%	.18-.62	.13-.47	.02	.02						
Non-Instructional Behaviors														
Hustle	199	434	6.5%	12.0%	5.63-7.37	10.94-13.06	.36	.74						
Praise	355	797	11.6%	22.1%	10.47-12.73	20.75-23.45	.64	1.35						
Scold	62	301	2.0%	8.3%	1.50-2.50	7.40-9.20	.11	.51						
Manage	855	429	28.0%	11.9%	26.41-29.59	10.85-12.95	2.41	.73						
Other	150	278	4.9%	7.7%	4.13-5.67	6.83-8.57	.27	.47						
Total	3052	3610	100%	100%			5.51	6.23						
1 st Name	1016	714	33.2%	19.8%	31.53-34.87	18.50-21.10	1.84	1.21						

Table 2

Totals for Male and Female Coaching Behaviors Toward Individuals versus Team for Each Category

Behavior	Team		Indiv.		%		Team		%		Indiv.		%	
	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male
Pre-Inst.	241	149	108	122	7.7%	6.1%	30.9%	122	6.1%	39	2.4%	24.2%	39	2.4%
Con. Inst.	207	149	192	330	13.7%	16.4%	48.1%	330	16.4%	136	8.5%	29.2%	136	8.5%
Post-Inst.	109	149	218	131	15.6%	6.5%	66.7%	131	6.5%	307	19.2%	70.1%	307	19.2%
Question	150	149	108	59	7.7%	2.9%	41.9%	59	2.9%	130	8.1%	68.8%	130	8.1%
Phy. Assist	0	149	18	0	1.2%	0	100%	0	0	35	2.2%	100%	35	2.2%
+ Model	26	149	33	35	2.4%	1.7%	55.9%	35	1.7%	34	2.1%	49.3%	34	2.1%
- Model	5	149	8	5	.6%	.2%	61.5%	5	.2%	8	.5%	61.5%	8	.5%
Hustle	154	149	45	358	3.2%	17.8%	22.6%	358	17.8%	76	4.8%	17.5%	76	4.8%
Praise	149	149	206	421	14.7%	20.9%	58.0%	421	20.9%	376	23.6%	47.2%	376	23.6%
Scold	25	149	37	131	2.6%	6.5%	60.0%	131	6.5%	170	10.7%	56.5%	170	10.7%
Manage	485	149	370	327	26.4%	16.2%	43.3%	327	16.2%	102	6.4%	23.8%	102	6.4%
Other	102	149	56	95	4.0%	4.7%	37.3%	95	4.7%	183	11.8%	65.8%	183	11.8%
Total	1653	1653	1399	2014	45.84%	55.79%		2014	55.79%	1596	44.21%		1596	44.21%

Note. % to Individual represents the percentage of feedback for the given category of behaviors to individuals versus team (e.g., $[108/(241+108)]*100 = 30.9\%$).

non-instructional category. Of the noninstructional behaviors and overall, the female coach exhibited management (28.0%) more than any other behavior category. The highest category for the male coach was praise (22.1%), also a noninstructional behavior. The praise to scold ratio for the male was approximately 3:1 with the female exhibiting a higher ratio of praise to scold of 6:1. The greatest differences in behavior categories were use of first name (female 33.2% to male 19.8%), preinstruction (female 11.1% to male 4.5%), hustle (female 6.5% to male 12.0%), praise (female 11.6% to male 22.1%), and management (female 28.0% to male 11.9%). The total RPM for all behaviors was similar for both coaches, the male coach showing a slightly higher rate (6.23) than the female coach (5.51). Inspection of Table 1 shows that both the female coach and male coach provided instruction more often (female 35.2%, $n = 1114$, male 29.5%, $n = 1065$) than any coaching behavior when the categories of preinstruction, concurrent instruction, and postinstruction were combined.

Coaching behaviors were distinguished between behaviors that were directed toward the team and individual players in Table 2 from the totals in Table 1. Results revealed that both coaches were almost identical in their feedback behaviors to the team and individuals overall with 54.16 % ($n = 1653$) of the female coach's total behaviors were toward the team (including small groups) and the male coach directed 55.79% ($n = 2014$) towards the team. Likewise the female coach directed 45.84% of behaviors toward individual athletes, as the male coach was similar with 44.21%

As Table 2 illustrates, the female coach's most frequent behavior to the team (29.3%) and individuals was management (26.4%). The male coach's most frequent behavior to the team (20.9%) and individuals (23.6%) was praise. The female coach

demonstrated a higher frequency of preinstruction ($n = 241$) towards the team than to individuals ($n = 108$). The opposite was true for postinstruction whereby more statements were directed toward individual players ($n = 218$) than toward the team ($n = 109$). Also the female and male coach directed hustle statements toward the team (female $n = 154$, male $n = 358$) more often than individuals (female, $n = 45$, male, $n = 76$). Of note, the lowest coaching behavior categories for both team and individuals were physical assistance ($n < 35$), sometimes referred to as manual manipulation, and negative modeling ($n < 13$).

Expectancy Patterns

The second purpose of the study was to examine coaches' differential patterns of behavior to high and low expectancy athletes. Each one of the coaches' expectancy assessments (preseason MERS, postseason MERS, and postseason ranks) along with each player's average playing time for the entire season were analyzed. In Table 3 the correlation between the assessments was calculated using a Pearson Product Moment correlation. The most significant correlation existed between coaches' rankings and average playing time (female $r = .851$, $p = .005$; male $r = .777$, $p = .005$).

To assess the consistency of coaches' expectations, the Pearson Product Moment correlation was also used to compare coaches rankings of their players using the preseason MERS and postseason MERS. The results of this correlation analysis indicated there was consistency of expectancy from the beginning to the end of the season for the female ($r = .758$) and male coach ($r = .706$) with $p < .001$. These correlations were likely underestimated due to using a Pearson Product Correlation versus an Intraclass Correlation, which would have been a more appropriate test to run on the pre- and post

Table 3

Correlation Between Pre- and Post MERS, Coach Rank, and Average Playing Time for the Male and Female Coach

		Pre MERS	Post-MERS	Playing Time	Coach rank
Pre MERS	Female	–	.758*	.339	.349
	Male		.706*	.069	.448
Post-MERS	Female		–	.569**	.630*
	Male			.481**	.723*
Playing Time	Female			–	.851**
	Male				.777**

* $p < .05$, ** $p < .01$

MERS, though not suited for testing the use of average playing time and coaches rank. The Pearson Product Moment Correlation was also used to be able to make comparisons with the study of Pat Summitt, which used the same statistical analysis.

Composite expectancy scores were established for each athlete. Final composite scores ranged from 4 to 40 for the female coach and 4 to 72 for the athletes of the male coach. The top 50% of the scores represented the high expectancy athletes whereas the bottom 50% represented the lower expectancy athletes, respectively, for each coach. Halved samples were used to replicate previous research and also due to the small sample size of the teams running statistical analysis would have been difficult using a smaller portion of each team. The mean for the high expectancy group for the female coach was 14.8 ($SD = 6.46$) and for the male coach 24.6 ($SD = 10.97$), whereas the mean for the low expectancy group for the female coach was 29.8 ($SD = 4.32$) and the mean for the male coach was 52 ($SD = 8.89$).

Expectancy and Quality of Coaching Behaviors

A review of the raw data between the groups was done as noted in Table 4. The totals of the high and low expectancy athletes combined for each category do not match the individual totals on Table 2 due to other athletes participating in practice (i.e., freshman athletes) being included in Table 2 and the totals for Table 4 were strictly limited to high/low athletes. Totals without the other category were created because the category of other consisted of behaviors that were not of a teaching nature.

Statistical analyses for homogeneity of group variance were run on the total without the other category athlete scores of the high and low expectancy groups of both the female and male coach. The female coach's low expectancy group mean frequency of

Table 4

Coaching Behaviors for Male and Female Coach towards High and Low Expectancy Athletes

Coaching Behavior	Athlete Expectancy			
	Female		Male	
	High (5)	Low (5)	High (9)	Low (9)
Pre-Inst.	61	32	19	19
Con.-Inst.	65	67	53	58
Post-Inst.	66	70	149	125
Question	44	29	52	59
Phy. Assist.	4	7	9	16
+ Model	12	11	9	16
- Model	1	5	4	3
Hustle	13	15	32	36
Praise	94	64	176	169
Scold	16	13	64	71
Management	152	121	56	33
Other	20	18	111	53
Total	548	452	734	658
Total w/o other	528	434	623	605

Note. Coaching Behavior totals for high/low athletes differed from individual totals on Table 1 due to other athletes not ranked as high or low receiving communications during practices being included in Table 1.

coaching behaviors was 91.0 ($SD = 37.202$) and the high expectancy group mean was 115.4 ($SD=13.939$), $F(1,8) = 1.886$, $p = .207$. The Shapiro-Wilk for the low expectancy group was .90 and for the high expectancy group .79, so the groups were normally distributed. For the male coach the low expectancy group mean was 69.33 ($SD = 41.39$) and the high expectancy mean was 69.33 ($SD = 27.56$), $F(1, 16)$, $p = 1.0$. The Shapiro-Wilk for the low expectancy group was .93 and for the high expectancy group was .92, respectively.

In all behavior categories except management and other, the male coach displayed approximately the same amount of behaviors to both high and low expectancy athletes. Of note, the other category had a large difference between high ($n = 111$) and low ($n = 53$) expectancy athletes from the male coach, however, this category did not count towards teaching feedback. When comparing the male coach to the female coach, some differences were noticed between the frequencies of the behaviors in the categories of pre-instruction, post instruction, hustle, praise, scold, management, and other.

For the female coach, the behaviors were recorded for an additional group of athletes, as viewed in Table 5, which were unrated as high or low expectancy, but practiced consistently with those athletes grouped as such. In addition, these six unrated athletes had varsity game playing time, and in fact, one of the unrated athletes had more average playing time than a few of the lower ability athletes, however, was not considered high or low, or as being on varsity, or ranked by the coach. The female coach provided approximately equal amounts in the behavior categories of concurrent instruction, physical assistance, positive/negative modeling, hustle, and other to all three groups of athletes. When considering the unrated athletes, the female coach gave pre-

Table 5

Coaching Behaviors for Female Coach towards High and Low and Other Expectancy Athletes

Coaching Behavior	Athlete Expectancy		
	High (5)	Low (5)	Unrated (6)
Pre-Inst.	61	32	15
Con.-Inst.	65	67	60
Post-Inst.	66	70	82
Question	44	29	35
Phy. Assist.	4	7	7
+ Model	12	11	10
- Model	1	5	2
Hustle	13	15	17
Praise	94	64	48
Scold	16	13	8
Management	152	121	91
Other	20	18	18
Total	548	452	393
Total w/o other	528	434	375

Note. Unrated athletes were athletes that had limited varsity playing time and were part of varsity practices, but were not rated by coach as being high/low on varsity.

instruction from the least to greatest amount from the unrated ($n = 15$) to low ($n = 32$) to high ($n = 61$) ability and skilled athletes. This trend was also seen in the categories of questioning, praise, scold, and management. The only category where the unrated players received a higher amount of behaviors was in the category of postinstruction (high $n = 66$, low $n = 70$, unrated $n = 82$). Overall total coach behaviors also displayed high expectancy athletes receiving more behaviors than the low expectancy athletes, then the unrated athletes receiving slightly less than the low expectancy. When comparing each group, the high expectancy received 39%, the low expectancy received 32%, and the unranked group received 28% of the total overall individual behaviors ($n = 1393$) for these three groups.

Statistical analysis was similar to the statistical processes completed during the study of Pat Summitt in order to make comparisons. However, in the Summitt study instruction was grouped together instead of being broken down into pre-, concurrent, and postinstruction. However, for this statistical analysis pre-, concurrent, and postinstruction were analyzed separately to attain a specific analysis of each instructional behavior of the coaches towards the athletes. A category of Total without Other was created because this category had little impact on the actual teaching of basketball. The various MANOVA's were run using the total minus the other category. The rationale used was that other was any behavior coded that did not apply to the teaching of basketball (i.e., team items, school topics, family situations, etc.), therefore this category seemed inappropriate when examining quantity and quality of feedback to athletes.

Two MANOVA's were conducted to analyze the differences between high and low expectancy athletes in relation to the quantity of behaviors each group received from

their coach. The dependent variables included in the analyses were individual behavior score and overall received behavior scores. The individual behavior score was calculated by dividing the number of individual behaviors received from the coach by the total number of individual behaviors given to all the athletes on that particular team. The overall received behavior score was calculated by dividing the number of individual behaviors received from the coach by the total number of individual and group behaviors given to teammates and the team in general.

For the female coach no significant multivariate effect was found for differences in quantity of behavior between expectancy groups, defined by split samples, for frequency of individual behaviors and overall behaviors received from coaches. For the halved sample ($n = 5$), analyses of the female coach indicated that high expectancy athletes ($M = .107$, $SD = .018$) received the same individual feedback behaviors (based on individual behavior received score) as low expectancy athletes ($M = .089$, $SD = .042$). Also high expectancy athletes ($M = .043$, $SD = .008$) received the same quantity of individual feedback (based on overall behavior received) as low expectancy athletes ($M = .034$, $SD = .015$).

No significant multivariate effect was found for differences in quantity of behaviors between expectancy groups, also defined by the split samples, for frequency of individual behaviors and overall behaviors received from the male coach. For the halved sample ($n = 9$), analyses of the male coach indicated that high expectancy athletes ($M = .055$, $SD = .021$) received the same individual feedback behaviors (based on individual behavior received score) as low expectancy athletes ($M = .055$, $SD = .033$). Also high expectancy athletes ($M = .022$, $SD = .008$) received the same quantity of individual feedback (based

on overall behavior received) as low expectancy athletes ($M = .022$, $SD = .013$).

Tests of normality were conducted to assess differences between high and low expectancy athletes in relation to the type or quality of coaching behaviors athletes received as illustrated in Table 6. All of the type scores representing the qualitative behavior categories from the ASUOI were included as dependent variables except the variables for both coaches of manual manipulation, positive modeling, and negative modeling because they did not appear to be contributing variables due to low frequency counts ($n < 20$). The category of other was not used due to its lack of contributing to actual feedback. A Shapiro-Wilk test was conducted to assess the normality of the remaining eight behavior categories for both coaches. Categories with a Shapiro-Wilk statistic value greater than .90 were considered normally distributed (Becker & Wrisberg, 2008). Homogeneity of variance was found among three categories for the female coach and 6 for the male coach. For the female coach with 10 athletes, the behavioral categories of post instruction, questioning, praise, scold, and management fell below the .90 range of normal distribution. The MANOVA revealed no significant differences in the quality of feedback in the behavioral categories of preinstruction, concurrent instruction, and hustle. For the male coach with 18 athletes, the behavior categories of preinstruction, concurrent instruction, and postinstruction fell below the value of .90. The MANOVA revealed no significant differences in the quality of feedback between the expectancy groups for the categories of questioning, hustle, praise, hustle, scold, and management.

Table 6

Shapiro-Wilks of Female and Male Coach

Tests of Normality							
Female				Male			
	Expect	Statistic	Sig.		Expect	Statistic	Sig.
PreInstruction	Low	.980	.932	PreInstruction	Low	.864	.106
	High	.902	.423		High	.942	.602
Concurrent Instruction	Low	.922	.546	Concurrent Instruction	Low	.892	.208
	High	.931	.606		High	.933	.514
Post-Instruction	Low	.831	.141	Post-Instruction	Low	.733	.003
	High	.888	.348		High	.860	.095
Questioning	Low	.896	.389	Questioning	Low	.982	.975
	High	.906	.443		High	.957	.770
Hustle	Low	.907	.449	Hustle	Low	.984	.982
	High	.949	.727		High	.889	.196
Praise	Low	.784	.060	Praise	Low	.965	.851
	High	.891	.362		High	.944	.623
Scold	Low	.766	.041	Scold	Low	.947	.658
	High	.958	.793		High	.944	.624
Manage	Low	.978	.925	Manage	Low	.962	.820
	High	.885	.333		High	.942	.606

Note. Expect stands for Expectancy group

Discussion

The present study contributed to the existing literature by providing descriptive data pertaining to the behaviors of two high school girls' basketball coaches and analysis of factors contributing to those behaviors such as gender and coach expectancy. The methodology used in this study (as with the study previously conducted on Pat Summitt) allowed for a more in-depth analysis of behaviors and added to the growing database of descriptive information concerning practice behaviors of successful high school coaches.

In the past research with Wooden, Summitt, and many other successful coaches, instruction was frequently researched and found to be the chief behavior of coaches (Becker & Wrisberg, 2008; Lacy & Goldston, 1990; Tharp & Gillmore, 1976). A dominant function of the coaches in this study was also giving instruction. Over the entire season for the period sampled, the behavioral categories classified as instructional (preinstruction, concurrent instruction, postinstruction, questioning, modeling, physical assistance) accounted for 46.6% for the female and 38.0% for the male total coaches' behaviors. Across both genders, the functions of instruction (pre-, concurrent, and postinstruction) accounted for a large percentage of the behaviors (female 35.2% to male 29.5%). These behaviors accounted for approximately one-third of all behaviors for both genders.

Both coaches exhibited a higher frequency of preinstruction for team (female 14.6%, male 6.1%) compared to individuals (female 7.7%, male 2.4) and more behaviors of postinstruction for individuals than to the team, similar to Pat Summitt. This pattern seemed logical considering it was probably more effective to communicate with the whole team when introducing skills or drills and then individual athletes were provided

with performance relevant feedback. As Becker and Wrisberg (2008) suggested, it is possible that instruction given during or after the action may promote greater learning when individualized. This finding also paralleled the results of Wooden, which revealed his feedback to be individualized according to each athlete's level of performance (Gallimore & Tharp, 2004).

When comparing total preinstruction the female coach had a higher percentage of behaviors (11.4%) than the male coach at 4.5%. This was opposite of previous research done on basketball coaches where the largest difference in the independent behavior categories occurred in the preinstruction category with male coaches exhibiting this behavior 14.7% whereas female coaches used this category 8.8% (Lacy & Goldston, 1990). Percentages were decisively higher for both the female and male coaches in the categories of concurrent and postinstruction in the Lacy and Goldston (1990) study of high school basketball coaches. The highest category for their male coaches was concurrent instruction (21.2%). Their female coaches exhibited postinstruction (21.3%) more than any other behavior category. In the current study, both the male and female coach gave concurrent (female 13.1%, male 12.9%) and postinstruction (female 10.7%, male 12.1%) at a similar rate to each other. Also both coaches used similar amounts of total concurrent (female 13.1, male 12.9%) to total postinstruction to athletes (female 10.7%, male 12.1%).

Similar to Summitt, however, the most common form of total instruction to team and individuals by the female and male coach was the use of concurrent instruction. As athletes of both coaches executed various tasks, they were provided with technical and tactical information, allowing athletes to adjust and make corrections during the flow of

action. Of interest was the use of concurrent instruction between the coaches. The female coach communicated concurrent instruction almost identically to both team and individuals (team 51.9%, individuals 48.1%), whereas the male coach used it considerably more when communicating with the team versus individuals (team 70.8%, individuals 29.2%). This variation for the male coach may be explained by the lack of pre-instruction, where more general instruction was being given during the running of the drills. Another explanation of the variation was the result of his opportunity to instruct a smaller group of athletes due to portions of practices being broken down during drills.

Therefore, the behavioral data in this study supported the hypothesis that the main coaching behavior, regardless of gender, was instruction. Chelladurai and Saleh (1980) reported that team sport athletes (e.g., basketball, volleyball) preferred training and instruction more than individual sport athletes (e.g., golf, wrestling). Likewise, as a sports interdependent tasks (i.e., team sports vs. independent sports) increase, the need for training and instruction increases (Chelladurai, 1993). In other words, team sport athletes (e.g., basketball) prefer coaches who provide training and instruction more than athletes participating in individual sports (Kravig, 2003).

Gender was suggested as a possible factor for differences in coaching behaviors in the past literature. As noted in this earlier research, most differences in coaching were attributed to different individual teaching styles (Millard, 1990; Pratt & Eitzen, 1989). In this study, the behavior categories of preinstruction, hustle, management, and praise had noticeable differences between the male and female coach, which may suggest a potential gender influence for the behaviors.

One major difference in coaching behaviors was the use of praise, which assisted

athletes in maintaining their effort. Praise represented positive comments that were designed to reward players for good effort and technique. Similar to the Lacy and Goldston (1990) study of 10 male and female athletes, the praise to scold ratio for the male coach was similar to the male and female coaches in their study at approximately 2:1. However, when in light of the praise to scold ratio of 5:1, the female coach had a higher praise ratio. Scolds may have also been low for the female coach due to more pre-instruction for athletes, as well as increased management behaviors, such as having athletes redo a drill versus scolding. This type of feedback helped to reinforce behaviors and techniques that the coaches expected from their players.

In addition as indicated by previous research, positive, rewarding feedback given as a result of a good effort or specific instruction on how to correct a mistake maximizes the potential positive experience of athletes, especially athletes with low self-esteem (Barnett, Smoll, & Smith, 1992). Additional research found athletes were more likely to experience feelings of success and competence when they were provided with encouragement and instruction than when they were repeatedly criticized (Black & Weiss, 1992).

Another major area that accounted for a significant difference in coaching behaviors between the female and male coach observed was that of management. The male coach used this behavior category less (11.8%) than the female coach (27.9%). The use of preinstruction and hustle behaviors may have affected each other when considering the differences between the male and female coach in those behavior categories. A possible explanation for the high frequency of management displayed by the female coach was her use of preinstruction and management intertwined together assigning

athletes to positions while explaining drills. The female coach differed considerably from the male coach in preinstruction (female 11.4% to male 4.5%). Although the one element for the male coach that may be responsible for the differentiation was the use of hustles as a component of managing athletes. The behavior of hustle was demonstrated at a higher rate by the male coach at 12.0% compared to the female coach's use at 6.5%. There could be some explanation for the disparity of hustle statements by the female coach due to the expectation she placed on her athletes during the preinstruction phase. If athletes did not perform the drill or play at the speed desired, she would restart the drill and sometimes review the preinstructions.

Another explanation that could have been possible for the difference in management behaviors was the use of assistant coaches for running drills and explaining plays. The male coach broke his athletes into groups according to positions for portions of practice then would bring all the athletes back together. Such a practice could tend to eliminate some management behaviors due to the break up of athletes and assistant coaches assisting with the role of coaching/managing athletes during those periods of time. Along with an increased use of assistant coaches, the senior athletes with more experience set examples and were assigned by the coach to lead out with various skills, drills, and plays.

Although gender differences may have been a factor in the differences found, it may also be explained by the extremely different teaching style that each coach demonstrated. The female coach ran a very structured, high intensity, drill focused, and head coach directed practice. She would often stop play to correct several players at once or correct the running of a complete drill. In contrast, the male coach ran practice in an

efficient, skill focused manner within scrimmages, and routinely delegated responsibilities of teaching to assistant coaches. More research would need to be done to gain insight into aspects of teaching styles being connected to gender or strictly due to different personalities and individual styles.

Table 7 displays that are similarities and differences between high school and collegiate coaches' behaviors, which could be due to a variety of reasons. It was noted that the coding instrument used to code Wooden was slightly different but would still be considered beneficial for use of this comparison. Besides just individual differences, one possible explanation for differences in some of the categories could have been due to the differences between high school and college athletic environments. Although all of the categories could have been affected by the factor of differences in environments, four of the categories displayed the largest disparities possibly due to this, instruction, praise, management, and other.

High school coaches have been known for having an array of responsibilities included as part of their coaching duties, which could have essentially affected the use of all three behaviors. This has included the scheduling of games and tournaments, arranging for buses, checking eligibility of athletes, providing equipment and inventory of equipment, fostering booster clubs, advertising, recruiting students to try-out, ticket sales and fund raising, administrative paperwork for schools and districts, holding parent meetings, finding and selecting assistant coaches with little to no budget, planning a budget, ordering uniforms, supervising or teaching strength and conditioning of athletes, and other various duties usually related to a teaching job while also planning and facilitating regular team practices. Due to the range of responsibilities, during practices at

Table 7

*Summary Comparison of Coaching Behaviors: High School Coaches and Collegiate**Coaches*

Behavior Categories	Percent of Total Female	Percent of Total Male	Percent of Total Pat Summitt	Percent of Total John Wooden
Total Instruction	35.2	29.5	48.1	50.3
Questioning	8.5	5.2	4.6	Not coded
Manual Manipulation	.6	1	0.1	Not coded
Pos. Modeling	1.9	1.9	2.1	2.8
Neg. Modeling	.4	.4	0.6	1.6
Hustle	6.5	12.0	10.6	12.7
Praise	11.6	22.1	14.5	9.1
Scold	2.0	8.3	6.8	6.6
Management	28.0	11.9	9.3	Not Coded
Other	4.9	7.7	3.2	2.4
Uncodable	-	-	-	6.6
Nonverbal reward	Included in	Praise	Category	7.2
Nonverbal punishment	Included in	Scold	Category	2.5

Note. The - in Uncodable category meant all communications could be heard and reviewed due to use of microphone and video.

both high schools it was common to have students, parents, other sport coaches, and administrators come into practices to speak with the head coaches briefly. During these times either assistant coaches would be assigned to run drills and practice or the head coach would briefly stop the feedback to athletes to speak with the various other individuals. In addition, coaches would also speak to their assistant coaches during practices concerning the running of drills and plays, temporarily taking them away from giving feedback to athletes. Also both coaches would engage in conversations with athletes on topics outside of basketball, although usually related, such as senior night, injuries, grades, et cetera.

At the collegiate level, the main job of a coach has been coaching alone, focusing on getting athletes and teams to succeed. One of the first and foremost differences would be the difference in job description, most high school coaches have their “real” job and coach, in contrast, for collegiate coaches their job has been solely a coaching position. Although they also have certain administrative and recruiting duties, many collegiate coaches have paid assistant coaches, team managers, athletic personal, and various trainers who handle the various responsibilities to assist the head coach. For example, in most collegiate programs strength trainers, not head coaches, usually have training times with athletes outside of their normal practice times. Also some coaches have enlisted the assistance of sport psychologists to provide athletes with mental training outside of actual practice times.

Perhaps one of the key factors has been that during practices, collegiate coaches have personnel, team managers, or assistant coaches to assist with equipment versus having athletes spending time to move or retrieve items. In reference to his use of practice time

with assistant coaches and managers, Wooden stated (Wooden, 1997), “My coaches and managers also had three-by-five cards each day so that they knew-to the exact minute-when we could need two basketballs at one end of the court for a drill, or five basketballs at mid-court for a different drill, or three players against two players at a certain place and time, or the dozens and dozens of variations I devised” (pp. 132-133). In this like manner, head coaches at the collegiate level can focus more time on instruction and teaching strategies and skills of the sport due to the assistance of various individuals. Furthermore, in most cases, practices are also considered closed, meaning that individuals must have permission to sit in, view, or have access to a practice. This closed-door policy for practices has allowed for uninterrupted practice settings. It was noted of both Wooden and Summitt that practices were run very efficiently and quickly, wasting little time with concerns outside of the game of basketball during practice times (Becker & Wrisberg, 2008; Tharp & Gallimore, 2004).

Some coaches find it difficult to get athletes to consistently play at the intensity at which they play during games. Summitt was known for the intensity of her athletes during practice by use of a time clock during drills and her use of hustle statements, which consisted of 10.6% of her overall behaviors (Becker & Wrisberg, 2008). Like Summitt, the female coach made use of a time clock during the majority of drills and practice in general, however, she used a lower frequency of hustles at 6.5%. Similar to Summitt, Wooden’s hustle statements represented 12.7% of his total practice communications (Tharp & Gallimore, 1976). Comparable to the collegiate coaches, the male coach displayed hustle statements at 12%. There could be some explanation for the disparity of hustle statements by the female coach due to the expectation she placed on

her athletes during the pre-instruction phase. If athletes did not perform the drill or play at the speed desired, she would restart the drill and sometimes review the pre-instructions if needed.

When looking at the behavior categories separately, praise was a category where differences were demonstrated between the two high school coaches and collegiate coaches. Summitt used praise 14.5% and stated, "I try to use a lot more positive feedback with my players, praising them for the things they do correctly" (Wrisberg, 1990, p. 182). In comparison to the female coach and the collegiate coaches in Table 7, the male coach verbalized comments that energized, praised, or corrected his players' behaviors (22.1%) at a higher frequency distributed almost evenly between both the team ($n = 421$) and individuals ($n = 376$). The praise to scold ratio for the male coach was approximately 3:1. He also had a much higher rate of scolding athletes; however, he also had a high rate of concurrent and post instruction. This may have been similar to Wooden, who exhibited a pattern of behavior (scolds followed by instruction) so frequently that Tharp and Gallimore (1976) categorized them as "Wooden's." Although the male coach's ratio of praise to scold may be considered low at 3:1, Wooden contended that positive coaching behaviors often come in the form of instruction rather than praise (Gallimore & Tharp, 2004).

The female coach had a higher ratio of praise to scold of approximately 6:1 but used less praise overall (11.6%) than the male coach, but scolded her players less (2.0%). This was lower than Summitt's 6.8% of total coaching behaviors that involved signs of displeasure (*scold*). Both coaches' results of the use of praise supported other studies on coaches at all levels, with the one exception being Tharp and Gallimore's (1976) study of

Wooden (Mequita et al., 2008). Results from the study of Wooden indicated he rarely used praise during practices (9.1%), instead focusing on teaching the fundamentals of basketball (Gallimore & Tharp, 2004). Several studies have also found that youth coaches' behaviors included praise and encouragement significantly more than those identified in the Wooden study or coaches training elite-level athletes (Mequita et al., 2008; Smith et al., 1983). No reasons were given to explain the differences although it was suggested that it might relate to the competitive level and maturity of the athletes, the nature of the sport, or coaches' individual characteristics.

The category of other was higher for the male coach (7.7%) than for the female coach (4.9%) and either of the collegiate coaches of Summitt (3.2%) and Wooden (2.4%). The category of other included any behaviors that did not fit into the other categories, which focused on instructional and noninstructional behaviors of teaching basketball. Many of the statements from both high school coaches included conversations concerning the well-being of the athletes (i.e., inquiry about injuries, grades, social school events). The two coaches spent time during practice to ensure the building of positive relationships with their athletes as part of their coaching, along with teaching the game.

This practice of having a responsibility to teach athletes more than the game of basketball was also demonstrated by Wooden. After Wooden's retirement, many former athletes and students, regularly said that he taught about life as well as basketball, often having private sessions with individuals to discuss personal issues, roles on the team, and other matters important to those he taught (Gallimore & Tharp, 2004). Wooden himself felt the importance of studying, analyzing, and becoming familiar with athletes to

understand how each athlete ticked. Wooden expressed the belief that coaches needed to know the individuals they were working with in order to be able to build a team (Gallimore & Tharp, 2004). It could be suggested that successful coaches take the time to get to know their athletes in relation to basketball but also in other areas so that they can more effectively teach the athlete and build a successful team. Therefore, it could be suggested that some of the behaviors considered in the other category may take place during or around practice for high school, whereas for collegiate coaches it may take place more often outside practice. It may be possible that the difference between the high school and collegiate coaches other category may have been due to the different environments as well as individual teaching style.

One similarity between both high school coaches and the expert coaches of Wooden and Summit, as noted in Table 7, was the lack of physical or negative punishment, negative modeling, and physical assistance also referred to as manual manipulation (Becker & Wrisberg, 2008; Bloom, Crumpton, & Anderson, 1999; Tharp & Gallimore, 1976). Mequita and colleagues also (2008) conducted systematic observation using the ASUOI of male youth volleyball coaches. Additionally, the findings on the use of negative modeling were very limited. This may suggest that coaches feel that positive demonstrations and reinforcement were more powerful teaching strategies than negative strategies.

Similar to the collegiate coaches, instruction was the dominant behavior for the high school coaches. As hypothesized, the high school coaches used instruction at a lower frequency than the collegiate coaches, possibly due to the factors stated previously. Coaching behaviors from the non-instructional categories were demonstrated by the male

coach at a higher frequency than those demonstrated by Pat Summitt. However, the female coach demonstrated lower frequencies in the non-instructional categories of hustle, praise, and scold, opposite of what was hypothesized. For both the female and male coach, the categories of management and other were both demonstrated at a higher frequency than either Summitt or Wooden.

The second purpose of the current investigation was to determine if coaches' behaviors would be influenced by perceptions of athletes' abilities and skills. Based on previous expectancy research, it was hypothesized that both the female and male coaches' perceptions of player ability would remain consistent over the course of the season. Inspection of Table 3 indicates support for this prediction with a significant correlation between the coaches' pre- and postseason MERS ratings of their players' skills and abilities (female $r = .758$, male $r = .706$, $p < .01$). Therefore, it appears that both coaches' perceptions of their players' skills and abilities remained relatively similar from the beginning to the end of the season. Interestingly, despite the differences in the length of seasons between high school and college, there were similar findings with Summitt who was found to have a significant correlation between pre- and postseason MERS ($r = .77$, $p > .01$).

Of note was the difference between the pre- and post MERS scores compared with the playing time and coaches rank. Upon further examination it was noted that between average playing time and coaches' rank for both coaches there was a high correlation (female $r = .851$, $p > .05$, male $r = .777$, $p > .01$). A similar high correlation between rank and playing time was also noted in the study of Summitt ($r = .87$, $p < .05$). From this it would appear that playing time, which has not been used in most of the

expectancy research, was an indicator of coaches' perceptions of the athletes' skills and abilities. This would seem fairly logical because the majority of coaches at a competitive level would play athletes they perceived as most capable and skilled, who could assist the team in scoring, during games.

Both the male and female coach displayed a low correlation between pre MERS and the average playing time (female $r = .339$, male $r = .069$), as well as a moderate correlation between post MERS and average playing time (female $r = .569$, male $r = .481$). This was in contrast to Summitt who was found to have a moderate and high correlation between pre ($r = .75$) and post MERS ($r = .62$) and average playing time.

Some explanation may be due to younger players, who were perceived as highly skilled and high ability, but not receiving much playing time due to older athletes receiving the majority of playing time. This may have been especially true if coaches' were competing against more difficult teams. During highly competitive games the starters, also usually the high expectancy athletes would play the majority of the time and thus receive greater playing time. The younger players would usually get game playing time when playing less skilled teams, brief substituting, or when losing/winning by a large margin. This also may be different at a high school level versus a collegiate level, because both high school coaches had 4-12 athletes who also could play at a junior varsity (JV) level, so they may have had more playing time in the lower level games. Both coaches expressed confidence in their younger athletes; however, the majority of those with less playing time during varsity games received more playing time during practices with the more experienced athletes or at a JV level. Also one element to consider was athletes who were injured. These few individuals were ranked high by

coaches and on the MERS but had limited playing time due to injuries.

Research on expectancy theory suggests that coaches provide differential treatment to high and low expectancy athletes in the form of the quantity and quality of feedback (Lacy & Martin, 1994; Markland & Martinek, 1988; Sinclair & Vealey, 1989; Solomon, Dimarco et al., 1998; Solomon, Striegel et al., 1996). An explanation of this phenomenon may be a result of increased pressure on coaches to produce winning teams as the level of competition increases. This would suggest the possibility that feedback was provided on whether coaches' believed the athletes had the ability to contribute in games and to a winning team. This could potentially hinder athlete development and participation, especially at the youth levels (Solomon, Golden et al., 1998; Solomon & Kosmitzki, 1996).

The results from the majority of previous studies illustrated an expectancy bias in sport whereby high expectancy athletes received different treatment compared to low expectancy athletes (Solomon, 2010, Solomon; Streigel et al., 1996). Specifically high expectancy athletes received more feedback from the coach (Sinclair & Vealey, 1989). It was also hypothesized that both the female and male coach would provide differential treatment to players based on their perceptions of their abilities.

However, the results differed in that both coaches showed equal quality of behavior to both their high and low expectancy athletes in the categories of pre- and concurrent instruction and hustle for the female coach and questioning, hustle, praise, scold, and management behaviors for the male coach. This differed from past findings, which have indicated that low expectancy athletes received lower quality communications such as instruction and praise (Solomon, Striegel et al., 1996). Although

the results differed from the majority of past research, the results were similar to the findings of Summitt. Summitt was found to have no difference in the quality of feedback she gave to her athletes (Becker & Wrisberg, 2008). It was suggested this may be one of the reasons for Summitt's success and the same suggestion may also be applied as an explanation for the high school coaches' continual success. Past research has found differential treatment has been common at both the high school and collegiate settings, due to a lack of research in this area, additional research would be needed to be able to understand and know if differences exist between the two levels concerning expectancy of athletes (Becker & Wrisberg, 2008; Markland & Martinek, 1988; Solomon, Golden et al., 1998; Solomon & Rea, 2008).

In review of the expectancy raw data by category, there are a couple of items to note that may have affected and explained the statistical analysis of the male coach. During practices the athletes would be divided into positions (posts, guards) to work with him or an assistant coach. This led to the one group of that particular position receiving larger amounts of feedback from the male coach than the other group that worked with the assistant coach. This practice therefore led to large differences between athletes of both high and low expectancy receiving relatively the same amounts of feedback. In other words the data revealed athletes of a particular position, regardless of expectancy, received the majority of feedback overall from the male coach. This routine setup for practices could be the reason for the same quality and quantity of coaching behaviors to both expectancy groups.

The female coach data suggested the high expectancy group each received fairly similar amounts or quantity of feedback. There were some differences in the lower

expectancy group ($n = 5$), which may have been a cause for a lack of normality in many of the instruction categories caused by two of the athletes receiving the majority of the feedback. This may have been a result of the female coach using two athletes as the dominant substitutes for the high expectancy athletes. This could imply that among the low expectancy athletes there was a split in expectancy, three athletes being considered the lowest expectancy of the five athletes. Also athletes who were injured during practices had more management behaviors displayed towards them than those who were free of injury. This particular trend would suggest that due to the nature of the injury, athletes who were unable to perform to full capacity were given tasks such as time clock and various other duties.

It was noticed that there were a group of six athletes who consistently practiced with the varsity, had varsity playing time, but were unrated as high or low by the female coach. Interestingly one of the unrated athletes had more game playing time than one of the athletes rated as low expectancy. It was noted that even the unrated players received similar behaviors as the low and high expectancy groups from the female coach in concurrent instruction, questioning, physical assistance, positive and negative modeling, hustle, and other. Whereas post instruction (high $n = 66$, low $n = 70$, unrated $n = 82$) was the only category where the unrated players received more behaviors from the coach. However, the unrated players received significantly less of preinstruction, scold, and management behaviors from the coach. Of interest in those three categories the coach gave the high rated athletes the most, low rated athletes a moderate amount, and then the unrated players the least of these behaviors.

While unable to give definite conclusions, it could be speculated that besides

individual style, this trend may have to do with progressing younger players to varsity level. Due to the nature of high school athletics where players start as freshman then work up to varsity over the 4 year period, it could be possible that the female coach gave all her JV and varsity players feedback regardless of ability to ensure continued success throughout the season and years. She may have been fine-tuning and playing the older athletes while teaching and preparing the younger players to be able to play varsity in case of injury and for the following years. This could suggest the female coach demonstrated a progression of building athletes versus playing the high ability athletes until they graduate then starting over with a completely new bunch of athletes. This could possibly explain the higher rates of preinstruction and management to the higher skilled and ability athletes who may have been more experienced and used to demonstrate the drills and skills correctly and accurately according to the coach's desires. This could also explain the higher rate of post instruction demonstrated to the unrated group because the coach may have felt younger athletes with less experience needed more feedback to learn the skills and plays.

Although not included as part of the actual teaching process of basketball, the category of other had some differences between the expectancy groups that were of interest. The other category consisted of behaviors and statements that did not fit into any of the other categories but were still recorded. According to Table 4, the female coach gave similar amounts of statements to both the low expectancy and high expectancy group (high $n = 32$, low $n = 30$). Of interest was the difference between the amounts given to the two groups for the male coach. The high expectancy group ($n = 126$) received close to double the amount of statements than the lower expectancy group

($n = 65$). From this it appears that there could be differential treatment for those athletes in the high expectancy group in a form other than the actual teaching and managing of the team. This difference may have also been due to the tradition of having the seniors and starters on the team lead team meetings and other team social events. It was unclear as to the complete understanding of how this particular category would be considered differential treatment of expectancy groups.

The results from the current study revealed several practical implications for sport coaches. In particular, assessing athlete ability was an inherent component of the coaching process. However, coaches should be aware of how their assessments may affect their communication patterns. Research suggests that coaches are often unaware of the behaviors they exhibit toward athletes in practice (De Marco, Mancini, & West, 1997; Krane, Eklund, & McDermott, 1991; Wandzilak, Ansorge, & Potter, 1988). Many coaches, as suggested by the results, do not have to be “Pygmalion prone” and thus do not allow their expectations to affect their feedback behaviors. Such variation among coaches implies that those who are aware of and understand the expectancy cycle can avoid becoming Pygmalion-type coaches. In addition to the negative effects that coach’s biased instructional behavior has on an athlete’s rate of learning and level of achievement, such behavior could also affect the athlete’s psychological growth. Recent research in sport psychology has demonstrated that the type of instructional behaviors a coach exhibits in games and practices have been correlated with, and can actually cause, changes in athletes’ self-concept and perceived competence (Allen & Howe, 1998; Barnett et al., 1992).

CHAPTER 5

SUMMARY, FINDINGS, CONCLUSIONS, AND
RECOMMENDATIONS FOR FUTURE
RESEARCH

The following chapter summarized the current study and findings, presents conclusions, and discusses recommendations for future research based on the present study.

Summary

The purpose of this study was to identify instructional and non-instructional coaching behaviors of a successful male and female head coach of high school girls' basketball teams. A second purpose of this study was to investigate the theory of expectancy by examining the relationship of coaches' perceptions of expectancy status of athletes to coaching behaviors. To ascertain the specific behaviors of both the male and female coach, 590 and 533 minutes, respectively, was filmed and coded using the ASUOI. To evaluate the role of expectancy theory, each coach completed the MERS after the second week of the season and again 2 weeks after the conclusion of the season. Both coaches also rank ordered their athletes, as well as athletes' playing time, which was obtained at season's end. Using the ASUOI, a team of researchers individually coded each observed behavior until consistency was achieved. These data were analyzed and

recorded based on the observed frequencies of each behavior. A statistical analysis was also completed using SPSS version 15 (SPSS, Inc., Chicago, IL) to evaluate the secondary purpose. A Shapiro-Wilk test was conducted to assess the normality of the frequency of behaviors on the ASUOI. A MANOVA was employed to analyze differences between high and low expectancy athletes for the remaining eight behavior categories for the male coach and seven categories for the female coach.

Findings

A total of 553 minutes consisting of 3,052 of a female coach's practice behaviors and a total of 590 minutes consisting of 3,610 of the male coach's practice behaviors were coded. Both the female coach and male coach provided instruction more often (female 35.2%, male 29.5%) than any coaching behavior when the categories of pre-instruction, concurrent instruction, and postinstruction were combined. Results indicated that the female coach exhibited management behaviors (28.0%) more than any individual behavior category. The highest category for the male coach was praise (22.1%). The praise to scold ratio for male and female coaches was approximately a 3:1 ratio with the male coach exhibiting more overall praise but the female had a higher ratio of praise to scold than the male coach. The female exhibited much higher management behaviors than the male coach, which could have been attributed to gender or possibly teaching style differences. There were some differences in coaching behaviors, mainly in the areas of preinstruction, hustle, praise, and management.

A Pearson Product Moment Correlation suggested that both coaches' perceptions of athletes' expectancy remained consistent from the beginning to the end of the season. Contrary to predictions, a MANOVA revealed no differences in the quantity or quality of

the coaching behaviors that both the female and male coach directed toward high and low expectancy players in the given categories.

Conclusions

The present study attempted to determine coaching behaviors of a successful female and male head coach of girls' high school basketball teams. Overall, the successful coaches compared in this study were similar in their coaching behaviors and the coaching behaviors and expectancy was not affected by gender, level of competition, or skill and ability expectations. The results revealed that overall, instruction, praise, and management were the greatest coaching behaviors demonstrated to athletes. When comparing both collegiate and high school coaches, instruction clearly was one of the most demonstrated and important behaviors to the coaches. Although there were differences in how much instructional behaviors were demonstrated between the high school and collegiate coaches, for all coaches instructional behaviors were the dominant behavior. It would appear that instructional behaviors were an important element to the success of these coaches regardless of the level of competition.

There were some differences among the behavior categories for each coach and gender may have been a factor for differences in coaches' behaviors. Of the behaviors coded, the noninstructional categories had the largest variance between the male and female coach. When comparing both Summitt and Wooden, the demonstrated coaching behaviors were similar, particularly in the instructional behaviors. Likewise the female and male coach had similar trends of demonstrated coaching behaviors as both Summitt and Wooden. Although there were some small variations in individual behaviors of the high school coaches from each other and Summitt and Wooden, these differences could

have been affected by contextual factors (e.g., support staff, number of players, level of competition, etc.), individual teaching style, or sampling variability (e.g., practices selected). It was difficult to determine if differences in the behaviors between the high school coaches were due to gender or other factors, more research would need to be done in this area.

In reflection of the expectancy cycle, the results suggested that coaches formed an expectation of athletes' performance level and held a consistent expectation throughout the season. Findings indicated that the quality of feedback in the given categories were given equally to both low and high expectancy athletes. High expectancy athletes did not receive differential treatment in the form of the quantity of communication, receiving the same amount of feedback from the coaches. Gender did not make a difference in terms of differential treatment of athletes, because both the female and male coach gave similar quantity and quality of feedback to their athletes. Overall, it appeared that coaches do form an expectation of athletes; however, successful coaches do not appear to give differential treatment to athletes based on expectancy.

Limitations

Several limitations of the current study may have impacted the results and influenced the conclusions drawn from the data. For one limitation of the ASUOI may have been deciphering the value of instructional behaviors. A high rate of instructional behaviors does not guarantee that the instructions given were of value. Coaches' feedback of instruction may be varied in the amount of corrective, technical, or tactical value given to athletes. Although some of the categories (i.e., instruction, praise) have been specified as a higher quality behavior than other behaviors (scold, management), the

value of feedback specific to instruction may have been limited. In addition, low expectancy athletes may be receiving the same amount of instruction, however, a more detailed value of the type of instruction was not able to be determined. This could also be applied to praise, in that it was not possible to know if the praise given to athletes was specific (i.e., way to look inside for the pass) or general (i.e., good job).

A third limitation of the study was the small number of coaches and athletes being investigated. Due to the small number of athletes, statistics for expectancy lacked power and had too small of a sample to overcome distribution issues and possibly explain lack of significance. It was also difficult to ascertain if differences were a cause of gender due to only two coaches being observed. Also because this investigation was descriptive in nature, no qualitative judgments could be made concerning the coded behaviors.

Another limitation of the study was due to the different number of players and the portion of time spent in various elements of practices. Depending on the day, the coaches spent practice time in conditioning, drills, half-court, or full court drills and scrimmage. This could have affected coaches quantity of demonstrated behaviors based on the activity athletes were practicing. Also the number of athletes each coach had could change how they were able to communicate to each athlete.

Recommendations for Future Research

This investigation presented a number of possible future directions for developing and expanding the knowledge base for sport pedagogy and sport psychology.

Understanding what makes coaches more effective can be explored in a multiplicity of ways. In retrospect, Gallimore and Tharp (2004) said that they would have conducted their investigation differently if they had the opportunity to conduct their study again.

From a methodological perspective, the MERS requires further research to increase the value of the instrument. Also, as part of assessing behaviors, it is recommended that a category for coach interaction with assistants be added to provide a better description of coaching activities and also to help avoid inflating another category. From a theoretical perspective assessing both coaches' expectations and the athletes' perception of differential treatment could extend the existing body of research. Only the head coaches' expectations were examined; therefore, exploration of assistant coaches expectancy may provide additional information. To enhance understanding of effective coaching behaviors, further research could also examine player variables, such as practice time, in an attempt to determine the relationship of these variables with coaching behaviors. Also, an investigation of coaching behaviors is needed to examine whether it is more or less effective for feedback behaviors to remain consistent across the different phases of a season. It would appear that future studies should also continue to look more in-depth at the type and value of feedback given to the players so that coaches can use the information to become more successful teachers of their sport.

The purpose of this investigation was to analyze descriptively the coaching behaviors of high school girls' basketball coaches, not to attach any evaluative judgments to them. It must be cautioned that the results cannot be generalized beyond these two coaches and players. Also any qualitative conclusions based on these data can be no more than speculation. Tharp and Gallimore (1976) studied John Wooden using a quantitative observational method, on which they elaborated years later after an interview with him in 2004. The researchers discovered in 2004 that their original study would have revealed more if they had gained the perspective of the players, of the assistant coaches, and of

Coach Wooden himself (Gallimore & Tharp, 2004). By assessing the behaviors of successful coaches with only quantitative measures, a vast amount of what the experts can offer would be overlooked. Towards this end, the qualitative aspects of feedback could be investigated to understand the appropriateness of feedback given to athletes, in addition to the frequency and type of coaching feedback. Qualitative research in conjunction with systematic observation could be important to fully comprehend quantitative observations and the rationale behind the exhibition of those behaviors.

Recommendations for Coaches

The need to improve the pedagogical and psychological aspects of coaching has recently been acknowledged and “there is no doubt that a thorough understanding of the coaching process and its practical application is a vital area of coaching, and perhaps one that will see dramatic improvement” (Wooden, 1997, p. 10). The practical implications from this study may provide coaches and athletes with valuable information.

It appears from the literature and this study that coaches, regardless of gender or sport type, use impression cues when evaluating athlete skill and ability. Becker and Solomon (2005) found that successful and unsuccessful coaches prioritized expectancy sources in a similar manner. Interestingly, athletes of more successful coaches were aware of how they were being evaluated; the athletes of less successful coaches had not received communications and were not aware of how they were being evaluated. Although the actual development of expectations may not influence team success, coaches should learn to openly communicate their expectations to facilitate performance. Therefore, what is most essential is that athletes become aware of the criteria their coaches are using to evaluate ability and skill. Communication of expectations provides a

means for understanding the psychology of coach-athlete relationships and could be a tool for effective coach-athlete relationships. Also it should be addressed in coach education and training programs that there is a need for coaches to convey this information directly to their athletes.

It has been suggested that coaches would be able to adapt more effective coaching behaviors if they were aware of their coaching behaviors. Some strategies for coaches to heighten self-awareness of their behaviors have been suggested, many similar to those used in teaching for teachers. Coaches could include keeping a practice journal that highlights coach-player interaction, videotaping practices and reviewing video footage of practice sessions, have an assistant coach or another individual conduct periodic evaluations of practice feedback, and use systematic observation to monitor feedback and other coaching behaviors.

In addition, coaches might consider monitoring each player's level of improvement over the course of a season so that they can adjust their coaching behaviors accordingly. By accommodating individual needs, coaches can facilitate the development and performance of all athletes.

To provide athletes with information that is detailed, accurate, and relevant, it would be important for coaches to continue to develop themselves and their knowledge of the sport that they coach. To accomplish this task, coaches might attend coaching clinics, read relevant books and articles, observe other great coaches, and/or talk to the athletes who play for them.

APPENDIX A

INTERVIEW QUESTIONS

Interview Guide

1. Did you play basketball as an athlete at any level? If so, for how long?
2. How many total years of experience coaching basketball have you had?
3. How many years have you coached basketball at (name of school) high school (HS)?
4. How many of those years were as an assistant coach?
5. How many years as a head coach?
6. How many teams have made state appearances over your career at (name of school) HS as head coach?
7. How many state championships have your teams won when you were head coach?
8. How many regional titles have your teams won during your career at (name of school) HS as a head coach?
9. What is your total career wins as head coach? Total wins from this HS as head coach?
10. What was your win/loss record for the past 2 years?
11. What is your winning percentage as head coach

APPENDIX B

ATHLETE INFORMATION

Athlete Information

Name: _____

Grade in School: 9 10 11 12

Playing Status: starter nonstarter

Position: _____

Playing Time:

APPENDIX C

DEFINITIONS, CATEGORIES, AND CODING

FORMS OF ARIZONA STATE UNIVERSITY

OBSERVATION INSTRUMENT

Arizona State University Observation Instrument (ASUOI)

Date: _____ Coach: _____ Observer: _____ Time begin: _____

Time end: _____ Event: _____

Categories	Team	Group	athlete 3	athlete 10	athlete 11	athlete 13	athlete 14	athlete 15	athlete 21
Dual: First Name	N/A	N/A							
Pre-instruction									
Concurrent Instruction									
Post instruction									
Questioning									
Physical Assistance									
Positive Modeling									
Negative Modeling									
Hustle									
Praise									
Scold									
Management									
Other									

Comments _____

Behavior Categories and Definition of the ASUOI

Coding Category	Example	Definition
Pre-Instruction	"I want you to look for Athlete X cutting down on this inbounds play.	Initial information given to player(s) preceding the desired action to be executed.
Concurrent Instruction	"Cut inside now"	Cues or reminders given during the actual execution of the skill or play
Post Instruction	"When the guard comes around the screen, make sure you step out first then post."	Correction, re-explanation, or instructional feedback given after the execution of the skill or play
Questioning	"If your defender is here, where should you be?"	Any question to play(s) concerning strategies, techniques, assignments, etc. associated with the sport.
Phys. Assist.	Physically moving a player's arm to ensure correct position	Physical moving the player's body to the proper position or through the correct range of motion of a skill.
Positive modeling	Demonstrating where a player should cut and where hands should be	A demonstration of correct performance of a skill or playing technique.
Negative modeling	Demonstrating how a player posted incorrectly	A demonstration of incorrect performance of a skill or technique.
Hustle	"Come on, let's go! Move it!"	Verbal statements intended to intensify the efforts of the player(s)
Praise	"Way to read the defender. Nice finish!"	Verbal or nonverbal compliments, statements, or signs of acceptance.
Scold	"That was terrible defense, what was that?"	Verbal or nonverbal behaviors of displeasure.
Management	"Alright, switch teams. I would like Athlete X up top."	Verbal statements related to organizational details of practice sessions not referring to strategies or fundamentals.
Other	"How's your ankle?"	Statements that did not fall into any of the previous categories

APPENDIX D

MODIFIED EXPECTANCY RATING SCALE

Modified Expectancy Rating Scale (MERS)

Directions: Please rate each of your athletes on each item from 1 (not true) to 5 (very true) by comparing them to other athletes at their competitive level.

Name and Number of Athlete _____

		Not True				Very True
1.	This athlete possesses sound basketball fundamentals.	1	2	3	4	5
2.	This athlete has the aptitude to become an exceptional basketball player.	1	2	3	4	5
3.	This athlete possesses the natural physical attributes necessary to become an exceptional basketball player.	1	2	3	4	5
4.	This athlete is receptive to coaching. *	1	2	3	4	5
5.	This athlete is a hard worker. *	1	2	3	4	5
6.	This athlete possesses a high level of competitiveness.	1	2	3	4	5
7.	This athlete is willing to listen and learn.	1	2	3	4	5
8.	Overall, this athlete will be an exceptionally successful basketball player at this level of competition. *	1	2	3	4	5

*Items added to the original Expectancy Scale (Solomon, 1993).

REFERENCES

- Allen, J.B., & Howe, B. (1998). Player ability, coach feedback, and female adolescent athletes' perceived competence and satisfaction. *Journal of Sport and Exercise Psychology, 20*, 280–299.
- Amorose, A.J., & Horn, T. S. (2001). Pre- to post-season changes in the intrinsic motivation of first-year college athletes: Relationships with coaching behavior and scholarship status. *Journal of Applied Sport Psychology, 13*, 355-373.
- Amorose, A.J., & Smith, P.J.K. (2003). Feedback as a source of physical competence information: Effects of age, experience, and type of feedback. *Journal of Sport and Exercise Psychology, 25*, 341–359.
- Barnett, N. P., Smoll, F. L., & Smith, R.E. (1992). Effects of enhancing coach-athlete relationship on youth sport attrition. *The Sport Psychologist, 6*(2), 111-127.
- Becker, A.J., & Solomon, G.B. (2005). Expectancy information and coach effectiveness in intercollegiate basketball. *The Sport Psychologist, 19*, 251–266.
- Becker, A.J., & Wrisberg, C. (2008). Effective coaching in action: Observations of legendary collegiate basketball coach Pat Summit. *The Sport Psychologist, 22*, 197-211.
- Black, J.S., & Weiss, M.R. (1992). The relationship among perceived coaching behaviors, perceptions of ability, and motivation in competitive age-group swimmers. *Journal of Sport and Exercise Psychology, 14*, 309–325.
- Bloom, G.A., Crumpton, R., & Anderson, J.E. (1999). A systematic observation study of the teaching behaviors of an expert basketball coach. *The Sport Psychologist, 11*, 157–170.
- Butcher, J.P. (2003). *Leadership styles of female collegiate field hockey coaches*. Unpublished master's thesis, Ball State University.
- Chelladurai, P. (1984). Discrepancy between preferences and perceptions of leadership behavior and satisfaction of athletes in varying sports. *Journal of Sport Psychology, 6*, 27–41.

- Chelladurai, P. (1993). Leadership. In R. N. Singer, M. Murphey, & L. K. Tennant (Eds.), *Handbook of research on sport psychology* (pp. 647-671). New York: Macmillan.
- Chelladurai, P., & Carron, A.V. (1983). Athletic maturity and preferred leadership. *Journal of Sport Psychology, 5*, 371–380.
- Chelladurai, P., & Saleh, S. (1976). Dimensions of leader behavior in sports: Development of a leadership style. *Journal of Sport Psychology, 2*, 34-45.
- Chelladurai, P., & Saleh, S. (1980). Preferred leadership in sports. *Canadian Journal of Applied Sport Sciences, 3*, 85-92.
- Chen, L., Jensen, B., & Mann, B. (2004). Differentiation of coaching performance perceived by administrators and head coaches of NCAA Institutions. *International Journal of Sport Management, 5*(2), 133-156.
- Claxton, D. B. (1988). A systematic observation of more and less successful high school tennis coaches. *Journal of Teaching in Physical Education, 7*, 302-310.
- Côté, J., Salmela, J., Trudel, P., Baria, A., & Russell, S. (1995). A coaching model: A grounded assessment of expert gymnastic coaches' knowledge. *Journal of Sport and Exercise Psychology, 17*, 1–17.
- Cousineau, W. J., & Luke, M. D. (1990). Relationships between teacher expectations and academic learning time in sixth grade physical education basketball classes. *Journal of Teaching in Physical Education, 9*, 262-271.
- Cox, R. H. (1990). *Sport psychology: Concepts and applications* (2nd ed). Dubuque, IA: Brown.
- Cratty, B. J. (1989). *Psychology in contemporary sport*. Englewood Cliffs, NJ: Prentice Hall.
- Cusion, J. C., & Jones, R. L. (2001). A systematic observation of professional top-level youth soccer coaches. *Journal of Sport Behavior, 24*(4), 354-378.
- Darst, P. W., Mancini, V. H., & Zakrasjek, D. B. (1983). *Systematic observation instrumentation for physical education*. Champaign, IL: Leisure Press.
- Darst, P. W., Zakrajsek, D. B., & Mancini, V. H. (Eds.). (1989). *Analyzing physical education and sport instruction* (2nd ed.). Champaign, IL: Leisure Press.
- De Marco, G.M.P., Mancini, V.H., & West, D.A. (1997). Reflections on change: A qualitative and quantitative analysis of a baseball coach's behavior. *Journal of Sport Behavior, 20*, 135–163.

- Dictionary.com, retrieved March 30, 2011 from <http://dictionary.reference.com/browse/behaviors>.
- Dodds, P., & Rife, F. (1981). *A descriptive-analytic study of the practice field behavior of a winning female coach*. Unpublished paper. University of Massachusetts, Amherst, MA.
- Dubois, P. E. (1981). The youth sport coach as an agent of socialization: An exploratory study. *Journal of Sport Behavior*, 4(2), 95-107.
- Eitzen, D., & Pratt, S. R. (1989). Gender differences in coaching philosophy: The case of female basketball teams. *Research Quarterly for Exercise and Sport*, 60, 152-158.
- Gallimore, R., & Tharp, R. (2004). What a coach can teach a teacher, 1975–2004: Reflections and reanalysis of John Wooden’s teaching practices. *The Sport Psychologist*, 18, 119–137.
- Gilbert, W., & Trudel, P. (2004). Analysis of coaching science research published from 1970–2001. *Research Quarterly for Exercise and Sport*, 75, 388–400.
- Goldman, M., Stockbauer, J. W., & McAuliffe, T. G. (1977). Intergroup and intragroup competition and cooperation. *Journal of Experimental Social Psychology*, 13, 81-88.
- Gould, D., Guinan, D., Greenleaf, C., & Chung, Y. (2002). A survey of U.S. Olympic coaches: Variables perceived to have influenced athlete performances and coach effectiveness. *The Sport Psychologist*, 16, 229–250.
- Hansen, B., Gilbert, W., & Hamel, T. (2003). Successful coaches’ views on motivation and motivational strategies. *Journal of Physical Education, Recreation, and Dance*, 74(8), 45-48.
- Hersey, P., & Blanchard, K. (1982). *Management of organizational behavior* (4th ed.). Englewood Cliffs, NJ: Prentice-Hall.
- Hodges, N. J., & Frank, I. M. (2002). Modeling coaching practice: The role of instruction and demonstration. *Journal of Sports Sciences*, 20, 793-811.
- Horn, T.S. (1984). Expectancy effects in the interscholastic athletic setting: Methodological considerations, *Journal of Sport Psychology*, 6, 60-76.
- Horn, T.S. (2008). Coaching effectiveness in the sport domain. In T.S. Horn, (Ed). *Advances in sport psychology* (pp. 239-267). Champaign, IL: Human Kinetics.

- Horn, T.S., Lox, C., & Labrador, F. (2006). The self-fulfilling prophecy theory: When coaches' expectations become reality. In J.M. Williams (Ed.), *Applied sport psychology: Personal growth to peak performance* (pp. 63–81). New York: McGraw-Hill.
- Jones, R.L., Armour, K.M., & Potrac, P. (2002). Understanding the coaching process: A framework for social analysis. *Quest*, 54, 34-48.
- Kahan, D. (1999). Coaching behavior: A review of the systematic observation research literature. *Applied Research in Coaching and Athletics Annual*, 14, 17–58.
- Kepner, C. G. (1991). An experiment in the relationship of types of written feedback to the development of second-language writing skills. *The Modern Language Journal*, 75, 305-315.
- Krane, V., Eklund, R., & McDermott, M. (1991). Collaborative action research and behavioral coaching intervention: A case study. *Applied Research in Coaching and Athletics Annual*, 6, 119–148.
- Kravig, S. D. (2003). *Coaching behavior preferences of interscholastic athletes*. Unpublished doctoral dissertation, University of North Texas, Denton.
- Lacy, A.C., & Darst, P.W. (1984). Evolution of a systematic observation system: The ASUOI observation instrument. *Journal of Teaching in Physical Education*, 3, 59–66.
- Lacy, A.C., & Darst, P.W. (1985). Systematic observation of behaviors of winning high school head football coaches. *Journal of Teaching in Physical Education*, 4, 256–270.
- Lacy, A.C., & Goldston, P.D. (1990). Behavior analysis of male and female coaches in high school girl's basketball. *Journal of Sport Behavior*, 13(1), 29-39.
- Lacy, A. C., & Martin, D.L. (1994). Analysis of starter/nonstarter motor-skill engagement and coaching behaviors in collegiate women's volleyball. *Journal of Teaching in Physical Education*, 13, 95-107.
- Langsdorf, E.V. (1979). *A systematic observation of football coaching behavior in a major university environment*. Unpublished doctoral dissertation, Arizona State University, Tempe.
- Magill, R. A. (1994). The influence of augmented feedback on skill learning depends on characteristics of the skill and the learner. *Quest*, 46, 314-327.

- Markland, R., & Martinek, T.J. (1988). Descriptive analysis of coach augmented feedback given to high school varsity female volleyball players. *Journal of Teaching in Physical Education*, 7, 289–301.
- Martin, S. B., & Barnes, K. (1999). Coaching Behavior Questionnaire. Unpublished manual, University of North Texas, Denton.
- Martin, S.D., Dale, G. A., & Jackson, A. W. (2001). Youth coaching preferences of adolescent athletes and their parents. *Journal of Sport Behavior*, 24, 197-212.
- Martin, S. B., Jackson, A.W., Richardson, P. A., & Weiller, K. H. (1999). Coaching preferences of adolescent youths and their parents. *Journal of Applied Sport Psychology*, 11, 247-262.
- Martinek, T.J. (1989). Children's perceptions of teaching behaviors: An attributional model for explaining teacher expectancy effects. *Journal of Teaching in Physical Education*, 8 (4), 318-328.
- Mavi, H. F., & Sharpe, T. (2000). Reviewing the literature on teacher and coach expectations with implications for future research and practice. *Physical Educator*, 57, 161-168.
- Merton, R.K. (1948). The self-fulfilling prophecy. *The Antioch Review*, 8, 193-210.
- Mesquita, I., Sobrinho, A., Rosado, A., Pereira, F., & Milistetd, M. (2008). A systematic observation of youth amateur volleyball coaches behaviours. *International Journal of Applied Sports Sciences*, 20(2), 37-58.
- Millard, L. (1990). *A study of overt coaching behaviors of high school soccer and volleyball coaches*. Unpublished manuscript, Springfield College, Springfield, MA.
- Model, R.L. (1983). *Coaching behaviors of non-winning high school football coaches in Arizona* (Doctoral dissertation, Arizona State University, 1983). Dissertation Abstracts International, 44, 703A.
- Mondello, M.J., & Janelle, C.M. (2001). A comparison of leadership styles of head coaches and assistant coaches at a successful Division I athletic program. *International Gymnast*, 45(2), 42.
- More, K., & Franks, I. M. (1996). Analysis and modification of verbal coaching behaviour: The usefulness of a data-driven intervention strategy. *Journal of Sports Sciences*, 14, 523-543.

- Potrac, P., Jones, R., & Cushion, C. (2007). Understanding power and the coach's role in professional English soccer: a preliminary investigation of coach behavior. *Soccer and Society*, 8, 33-49.
- Pratt, S.R., & Eitzen, D.S. (1989). Differences in coaching philosophies between male and female basketball teams. *International Review for the Sociology of Sport*, 24, 151-161.
- Rejeski, W., Daracott, C., & Hutslar, S. (1979). Pygmalion in youth sport: A field study. *Journal of Sport Psychology*, 1, 311-319.
- Riemer, H.A., & Chelladurai, P. (1998). Leadership and satisfaction in athletics. *Journal of Sport and Exercise Psychology*, 17, 276-293.
- Robinson, M. J., & Miller, J. J. (2003). Assessing the impact of Bobby Knight on the brand equity of the Texas Tech basketball program. *Sport Marketing Quarterly*, 12(1), 56-59.
- Rosenthal, R. (1974). *On the social psychology of the self-fulfilling prophecy: Further evidence for pygmalion effects and their mediating mechanisms*, MSS Modular Publications, New York.
- Rosenthal, R., & Jacobson, L. (1968). *Pygmalion in the Classroom: Teacher expectations and pupil's intellectual development*. New York, Holt, Rinehart, & Winston.
- Rupert, T., & Buschner, C. (1989). Teaching and coaching: A comparison of instructional behaviors. *Journal of Teaching in Physical Education*, 9, 49-57.
- Segrave, J.O., & Ciancio, C.A. (1990). An observational study of a successful Pop Warner football coach. *Journal of Teaching in Physical Education*, 9, 294-306.
- Selby, E. (2009). *A qualitative examination of the philosophies of successful NCAA division I coaches*. Unpublished master's thesis, California State University, Fullerton.
- Sherman, M.A., & Hassan, J. S. (1986). In M. Pieron, & G. Graham (Eds.), *The 1984 Olympic Scientific Congress Proceedings* (Vol. 6; pp. 103-108). Champaign, IL: Human Kinetics.
- Siedentop, D. (1990). The practice of sport pedagogy. In M. Lirette, C. Pare, J. Dessureault, & M. Pieron (Eds.), *Physical education and coaching: Present state and outlook for the future* (pp. 269-280). Sillery, QUE: Universite du Quebec.
- Sinclair, D.A., & Vealey, R.S. (1989). Effects of coaches' expectations and feedback on the self-perceptions of athletes. *Journal of Sport Behavior*, 12, 77-91.

- Sisley, B. L., & Capel, S. A. (1986). High school coaching: Filled with gender differences. *Journal of Physical Education, Recreation, & Dance*, 57(3), 39-43.
- Smith, R.E. (2001). Positive reinforcement, performance feedback, and performance enhancement. In J. Williams (Ed.), *Applied sport psychology: Personal growth to peak performance* (4th ed.; pp. 29–42). Mountain View, CA: Mayfield.
- Smith R. E., & Smoll, F. L. (1990). Leadership research in youth sports. In J.M Silva & R.S. Weinberg (Eds.), *Psychological foundations of sport* (pp.371-386). Champaign, IL: Human Kinetics.
- Smith, R.E., Smoll, F.L., & Curtis, B. (1978). Coaching behaviors in little league baseball. In F.L. Smoll & R.E. Smith (Eds.), *Psychological perspectives in youth sport* (pp. 173-201). Washington, DC: Hemisphere.
- Smith, R.E., Smoll, F.L., & Hunt, E. (1977). A system for the behavioral assessment of athletic coaches. *The Research Quarterly*, 48, 401-407.
- Smith, R. E., Zane, N. W. S., Smoll, F. L., & Copple, D. B. (1983). Behavioral assessment in youth sports: Coaching behaviors and children's attitudes. *Medicine and Science in Sports and Exercise*, 15, 208-214.
- Solomon, G.B. (1993). *The expectancy rating scale*. Unpublished paper. University of Virginia, Charlottesville, Virginia.
- Solomon, G.B. (2001). Performance and personality impression cues as predictors of athletic performance: An extension of expectancy theory. *International Journal of Sport Psychology*, 32, 88–100.
- Solomon, G.B. (2003). *Solomon expectancy sources scale*. Unpublished paper. California State University, Sacramento, California.
- Solomon, G.B. (2010). Expectations and perceptions as predictors of coaches' feedback in three competitive contexts, *Journal for the Study of Sports and Athletics in Education*, 2, 161-179.
- Solomon, G.B., DiMarco, A.M., Ohlson, C.J., & Reece, S.D. (1998). Expectations and coaching experience: Is more better? *Journal of Sport Behavior*, 21, 444–455.
- Solomon, G.B., Golden, A.J., Ciapponi, T.M., & Martin, A.D. (1998). Coach expectations and differential feedback: Perceptual flexibility revisited. *Journal of Sport Behavior*, 21, 298–310.
- Solomon, G.B., & Kosmitzki, C. (1996). Perceptual flexibility among intercollegiate basketball coaches. *Journal of Sport Behavior*, 19, 163–177.

- Solomon, G.B. and Rhea, D.J. (2008). Sources of expectancy information among college coaches: A qualitative test of expectancy theory, *International Journal of Sports Science and Coaching*, 3, 251-268.
- Solomon, G.B., & Reece, S.D. (1995). *Training manual for the Arizona State University Observation Instrument*. Charlottesville, VA: University of Virginia.
- Solomon, G.B., Striegel, D.A., Eliot, J.F., Heon, S.N., Maas, J.L., & Wayda, V.K. (1996). The self-fulfilling prophecy in college basketball: Implications for effective coaching. *Journal of Applied Sport Psychology*, 8, 44–59.
- Summers, R.J. (1991). The association between athletes' perceptions of their abilities on the influence of coach technical-instruction. *Journal of Sport Behavior*, 14, 30–40.
- Tharp, R.G., & Gallimore, R. (1976). What a coach can teach a teacher. *Psychology Today*, 9, 75–78.
- Terry, P.C. (1984). The coaching preferences of elite athletes. *Canadian Journal of Applied Sport Science*, 9, 201-208.
- Tinning, R. I. (1982). Teacher reaction to the trial materials: A victorian case study. *Australian Journal for Health, Physical Education, & Recreation*, 95, 11-14.
- Van der Mars, H. (1989). Systematic observation: An introduction. In P.W. Darst, D.B.Zakrajsek, & V.H. Mancini (Eds.), *Analyzing physical education and sport instruction* (2nd ed., pp.3-19). Champaign IL: Human Kinetic Publishers.
- Vealey, R.S., Armstrong, L., Comar, W., & Greenleaf, C.A. (1998). Influence of perceived coaching behaviors on burnout and competitive anxiety in female college athletes. *Journal of Applied Sport Psychology*, 10, 297-318.
- Wandzilak, T., Ansorge, C.J., & Potter, G. (1988). Comparison between selected practice and game behaviors of youth sport soccer coaches. *Journal of Sport and Exercise Psychology*, 11, 78–88.
- Weinberg, R., Grove, R., & Jackson, A. (1992). Strategies for building self-efficacy in tennis players: A comparative analysis of Australian and American coaches. *The Sport Psychologist*, 6, 3–13.
- Williams, J. (1978). *A behavioral analysis of a successful high school basketball coach*. Unpublished master's thesis, Arizona State University.
- Wilson, M. A., Cushion, C. J., & Stephens, D. E. (2006). "Put me in coach...I'm better than you think I am!" Coaches' perceptions of their expectations in youth sport. *International Journal of Sports Science and Coaching*, 1, 149-161.

- Wooden, J. R. (with Steve Jamison) (1997). *Wooden: A lifetime of observations and reflections on and off the court*. Lincolnwood, IL: Contemporary Books.
- Wooden, J. R. (with Jack Tobin). (2004). *They call me Coach*. Chicago, IL: Contemporary Books.
- Wrisberg, C.A. (1990). An interview with Pat Head-Summit. *The Sport Psychologist*, 4, 180-191.