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COMPARISON OF INTERACTION
BEHAVIOR PATTERNS OF MALES AND
FEMALES COACHING WOMEN'S BASKETBALL TEAMS

by

Janice A. Savitz

An Abstract

of a thesis submitted in partial fulfillment
of the requirements for the degree of
Master of Science in the School
of Health, Physical Education
and Recreation at
Ithaca College

May 1982

Thesis Advisor: Dr. Victor H. Mancini

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ABSTRACT

In this investigation the coaching behaviors of male and female coaches who coached female basketball players were analyzed and compared. Subjects included 30 central New York girls' basketball teams and their coaches, 15 males and 15 females. These subjects were each videotaped two times during the 1980 basketball season. All videotaped practice sessions were coded using CAFIAS (Cheffers' Adaptation of Flanders' Interaction Analysis System). To determine whether significant differences in coaching behaviors existed between males and females, multivariate analysis of variance (MANOVA) was performed. Results from MANOVA led to the rejection of the hypothesis which stated that there will be no differences between male and female coaches coaching the female basketball player. This test was followed by a discriminant function analysis which determined each variable's contribution to the significant between-groups difference. The significant contributors, in order of their contribution, were coach use of acceptance and praise, verbal; athlete nonverbal initiation, coach suggestion; and athlete nonverbal initiation, athlete suggestion. Univariate analysis of variance was then executed to identify which of the eight CAFIAS variables, when considered independently, indicated significant differences between two groups. Six variables were found to have significantly different occurrences: coach use of acceptance

and praise, verbal; coach use of acceptance and praise, non-verbal; athlete verbal initiation, coach suggestion; athlete nonverbal initiation, coach suggestion; athlete verbal initiation, athlete suggestion; and athlete nonverbal initiation, athlete suggestion. Extended information-giving by the coach was the dominant behavior exhibited by male coaches; extended interpretive drills was the dominant behavior occurring in the female coaching group. Athlete interpretive response followed by coach use of praise was found only in the female coaching group. The findings within this study coincide with earlier results on the tendency of the female coach to show more indirect behaviors, such as the use of acceptance and praise, and the male coach to exhibit more direct behaviors, such as lecture and demonstrations.

COMPARISON OF INTERACTION
BEHAVIOR PATTERNS OF MALES AND
FEMALES COACHING WOMEN'S BASKETBALL TEAMS

A Thesis Presented to the Faculty of
the School of Health, Physical
Education and Recreation
Ithaca College

In Partial Fulfillment of the
Requirements for the Degree
Master of Science

by
Janice A. Savitz

May 1982

Ithaca College
School of Health, Physical Education, and Recreation
Ithaca, New York

CERTIFICATE OF APPROVAL

MASTER OF SCIENCE THESIS

This is to certify that the Master of Science Thesis of

Janice A. Savitz

submitted in partial fulfillment of the requirements
for the degree of Master of Science in the School of
Health, Physical Education, and Recreation at Ithaca
College has been approved.

Thesis Advisor:

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DEDICATION

This thesis is dedicated to my parents, whose love, guidance, and 'coaching' made what seemed to be impossible, possible.

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Chapter 1

INTRODUCTION

In response to differences in skills and interests shown by students, there has been a change in teaching styles of men and women physical educators (Gerber, Felshin, Berlin, & Wyrick, 1974). Historically, many universities and colleges have had separate physical education departments for men and women. The professional preparations of the two groups have been different and, therefore, men and women have taken on different approaches and assigned different values to teaching. For example, among physical education classes and athletes at the high school level, boys have been more skilled and perhaps more motivated than girls because of the opportunities they have had to experience sport (Gerber, et al., 1974). Today, however, sport for women has become a fast-growing and fast-changing part of our culture.

Athletics has been primarily the territory of males since more males than females have participated in athletics. Tutko (1975) has indicated the image of the male as a coach fostered the idea that male coaches were the final authority in athletic matters. He has further stated:

But the young female needs to feel that athletics can provide her with a career opportunity equal to her male counterpart. For this reason, it is more advisable that female rather than male coaches be

responsible for the training of the young, growing female athlete so that she may see in her coach an ultimate goal for herself and that women have a legitimate role in the field of athletics. (p. 22)

The only opportunity that women consistently have had in high level sport, besides direct participation as competitors, has been as chaperones. The administration, promotion, coaching, training, and managing of organized women's sport has been in the hands of men (Gerber, et al., 1974).

In all of the published policy statements of the Division of Girls' and Women's Sports, it has been stressed that competent or qualified women should direct, coach, and officiate women's sport. By 1957, the qualifying phrase, "wherever and whenever possible" (Division for Girls' and Women's Sports, 1957, p. 58) was added, perhaps in recognition of the difficulties in finding enough capable and willing women. In 1965, it was evident that there was an increasing number of male coaches for collegiate teams and some of the women who were coaching were not members of the physical education department. Therefore, a new statement was added to the guidelines: "If a nonstaff member (sic) is teaching or coaching, a woman member of the physical education faculty should supervise and chaperone the participants" (Division for Girls' and Women's Sports, 1965, p. 36).

There has been very little research done comparing coaching behaviors of women and men. However, the research that has been completed indicates women coaches' behaviors differ

little from men coaches'. Loy (1967) reported that women and men show similar intellectual and emotional behavior, including toughmindedness. Neal (1967) recommended that requirements of women coaches should be the same as those of men--emotional stability, ability to handle people well, and knowledge of the particular sport. Although women are needed to be in control of the women's programs, they should not replace men until women can do as good a coaching job as men (Neal, 1967). According to Tutko (1975) there should be no differentiation as to whether the coach is male or female. In the final analysis, his or her effectiveness as a coach should be the decisive factor.

There has been no research investigating the coaching behaviors of coaches who coach a cross-sex team, that is, female coaches who coach male teams or coed teams or male coaches who coach female teams or coed teams. This may be due to the small number of these coaches or the short-term nature of such coaching positions (Sabcock, 1973).

The merger of men's and women's physical education/athletic programs mandated by Title IX raises many questions regarding the basic differences in values and teaching/coaching styles of men and women (Bain, 1978). If there are differences in coaching behaviors will this create a conflict between men and women coaches, and as female athletes are exposed to both male and female coaching styles, which will they prefer? Does it matter?

Scope of Problem

This study was initiated in an attempt to determine if there are differences in coaching behaviors between men and women who coach women's teams. Subjects for this study were 30 secondary school basketball coaches (15 male, 15 female) from the central New York State area. The subjects were observed during the 1980 basketball season. Each team was visited on 2 separate days. A 30-minute videotaping session was conducted upon each visit. Each videotaped practice was coded using Cheffers' Adaptation of Flanders' Interaction Analysis System (CAFIAS) (Cheffers, Amidon, & Rodgers, 1974).

Statement of Problem

Male coaches' and female coaches' behaviors in the interaction with female basketball players were compared using Cheffers' Adaptation of Flanders' Interaction Analysis System.

Major Hypothesis

There will be no significant differences in behavior patterns between male coaches and female coaches coaching the female basketball athlete.

Assumptions of Study

1. Two taping sessions will provide an accurate measure of the behaviors exhibited by the coaches.
2. The coding of CAFIAS for two 30-minute practice sessions will yield valid data to test the hypothesis.

Definition of Terms

1. Interaction analysis (IA) is an observational technique that records the frequency of teacher-pupil inter-

personal behaviors (Amidon & Hough, 1967).

2. Flanders' Interaction Analysis System (FIAS) is a system designed to measure the verbal interaction between teachers and pupils as it occurs in the classroom environment (Amidon & Flanders, 1971).

3. Cheffers' Adaptation of Flanders' Interaction Analysis System (CAFIAS) is a system designed to measure the verbal and nonverbal interactions between teacher and pupil (Cheffers et al., 1974).

4. Direct teaching is behavior exhibited by the teacher that limits students' freedom in the classroom.

5. Indirect teaching is behavior exhibited by the teacher that facilitates students' freedom in the classroom.

6. Nonverbal behavior is observed behavior that is not audible.

7. Verbal behavior is behavior expressed in an audible, observable fashion.

8. Coder reliability is the degree to which the person or persons doing the coding are consistent.

9. Coaches are certified educators who coach athletics in voluntary instructional programs, held after school hours, in which individuals compete for the privilege of participation.

10. Secondary level encompasses grades 9 through 12.

Delimitations of Study

1. The subjects used for this study were coaches and athletes from female secondary school basketball teams in the

central New York area.

2. CAFIAS was the only interaction analysis system used to record the coaches' behaviors.

3. Each subject was observed only twice for a period of 30 minutes each time.

Limitations of Study

1. The results of this study may be valid only for coaches and athletes from female secondary school basketball teams in the central New York area.

2. The results pertaining to coaching behavior may be valid only when CAFIAS is used for coding.

Chapter 2

REVIEW OF RELATED LITERATURE

The review of related literature in this chapter will deal with the following topics: descriptive analytic techniques, analysis of coaching, teacher sex and classroom interaction, men coaching women, and a summary.

Descriptive Analytic Techniques

In any classroom there is constant interaction between students and teachers and among the students themselves. The first reported study of pupil-teacher interactions was conducted by Anderson (1939). He found that the acceptance of students' ideas produced a more stimulating classroom.

Anderson (1971) also expressed the need for a greater insight into the teaching process. He stated that the descriptive analytic research should be used to guide the process of change in physical education.

Interaction analysis (IA) offers teachers a tool which can provide objective data about teaching behavior (Amidon & Flanders, 1971). Flanders (1970) stated that IA, an observational technique used to classify spontaneous classroom verbal behavior, can be used for pre-service education in order to help teachers improve classroom instruction.

Many teachers would like to improve their own effectiveness by making a change. Interaction analysis can provide the information as to whether a change has occurred, and whether a

change was not an improvement (Flanders, 1970).

Flanders' Interaction Analysis System (FIAS), developed by Flanders in 1960, has the ability to be used to analyze interactions between two or more individuals. Not only does it allow the classification of spontaneous verbal behavior, but it also enables the observer and the teacher to summarize, analyze, and draw inferences about teaching. The Flanders system is concerned only with verbal behavior primarily because Flanders felt it could be observed with higher reliability than nonverbal behavior. The assumption was made that the individual's verbal behavior was a representative sample of his total behavior (Amidon & Hough, 1967).

Nygaard (1975) compared teaching styles of males and females using FIAS to determine if teaching patterns differed by sex. Both male and female teachers lectured, gave directions, and criticized. Male teachers exhibited more behaviors that are categorized as direct verbal influence. The female teachers encouraged more student talk than did the male teachers. The most frequent verbal pattern used by female teachers was more autocratic or command-like than the verbal patterns most frequently used by male teachers. At the same time the females used significantly less lecturing than the male teachers.

Since FIAS is limited to verbal behavior only, several studies have been conducted to modify this system to be more relevant to physical education classes. Dougherty (1971) modified FIAS by adding a new category that represented periods

of significant nonverbal behaviors. Melograno (1971) also modified FIAS to identify nonverbal behaviors. When nonverbal behavior occurred, the appropriate category was recorded, and an "n" was placed beside the number to indicate nonverbal behavior. Mancuso (1972) combined the verbal categories of FIAS with the nonverbal categories of Love and Roderick (1971) to form a single system by adding two more categories for nonverbal behavior.

One of the most widely used adaptations of FIAS was developed by Cheffers (1972). Cheffers' Adaptation of Flanders' Interaction Analysis System (CAFIAS) was devised to describe classroom behaviors in classes chiefly concerned with physical activity. CAFIAS allowed for coding nonverbal behavior through a double category system in order that any behavior could be categorized as verbal, nonverbal, or both verbal and nonverbal. CAFIAS permitted the coding of the class as a whole, in part, or independent of any teacher influence (Cheffers & Mancini, 1978).

CAFIAS has been used in studies of teacher sex and classroom interaction by Faulkner (1976), Keane (1976), and Lombardo (1979). Faulkner (1976) compared the teaching behaviors of male and female pre-service teachers in secondary physical education. No statistically significant differences in the teaching behaviors between male and female pre-service teachers were found using CAFIAS.

Keane (1976) conducted a study to describe and analyze the effects of sex of the teacher on the parameters of leader-

ship style, leader behavior, and teacher-pupil interaction. Teacher-pupil interaction was observed and coded using eight selected parameters of CAFIAS. No significant differences were found between male and female teachers on the dimensions of leadership style and leader-member relations. Male and female teachers perceived their relationship with their respective teams in relatively similar and favorable terms. No significant differences were found between male and female teachers on the teacher-pupil interaction parameters of total teacher contribution, total pupil contribution, teacher use of questions, teacher response ratio, emphasis on content, and verbal and nonverbal behavior. On the parameter of pupil initiation, a significant difference was found, indicating that students were willing to take more risks with female teachers or that female teachers encouraged more pupil initiative. No significant main effect differences for sex, leadership style, and leader behavior were found.

CAFIAS was also used by Lombardo (1979) to describe the interaction patterns of selected physical educators in physical activity settings. Results indicated female teachers used more verbal praise, encouraged more student nonverbal interpretive responses, allowed much more pupil initiation, and used students as teachers much more than their male counterparts. However, in the other 27 of the 31 parameters measured, there were no significant differences between male and female teachers.

Analysis of Coaching

It is generally accepted that those women who are most qualified to coach are the ones who are teaching in school physical education departments; however, there is a difference between teaching and coaching, even though there is only a fine line separating one from the other. According to Neal (1967), a good teacher does not necessarily become a good coach, or vice versa:

The person must decide whether she really wants to coach or teach. The teacher tries to instruct people in fundamentals, while the coach utilizes skills that have already been learned. Teaching might involve helping the student build up a complete system of movement, beginning with simple ones and working up to complex ones. The coach tries to work within the limitations of the person, making only minor changes. The teacher establishes techniques; the coach accepts established techniques, and adds to them by instilling a knowledge of strategy, self discipline, and a desire to excel. (p. 2)

In general, teaching involves performance in situations that are comfortable and relaxed, whereas, coaching involves performance under stress and competitive situations. According to Neal (1967):

One should complement the other. The teacher must coach at times, and the good coach becomes a teacher when needed. Although there is a difference between

teaching and coaching, there is an overlapping in results and rewards. (p. 2)

Very little research has been done concerning coaching behavior. Until recently, studies of this type used questionnaires and personality trait inventories. LaGrand (1970) studied the range of responses of male athletes to the behavioral characteristics of their coach. A semantic differential scale was used to measure the behavioral characteristics of the coaches. The study found significant differences across different sports. LaGrand (1970) concluded that each sport contained a unique set of behaviors.

A questionnaire concerning attitudes toward female and male coaches was administered by Newcomb (1977) to 129 college female athletes. Athletes respected the female coach more as a person and expressed that it was easier to approach a female coach when one had personal problems. The male coach motivated the athletes more than his counterpart. Both male and female coaches were rated high on determination, dedication, and enthusiasm, and were similar in their ability to teach. While the athletes had no preference as to who coached them, they felt the female coach created a more positive image for women's sports.

Hendry (1974) compared the teacher and the coach in relation to personalities and social orientation. Physical educators and coaches at the college level were selected and asked to complete a personality inventory. Results showed that the coaches were organized individuals who were more

controlled than teachers. Teachers displayed qualities of overt sociability, high aspiration, and desire. Results indicated the six female coaches who participated in the study were extremely self-contained, conventional, and controlled.

Other systems have been developed to evaluate the behaviors of the physical educator and the coach. Tharp and Gallimore (1976) indicated that direct observation was the most efficient way of assessing coaching behavior. They used a traditional observer system to look at the coaching methods of John Wooden. Categories such as reinforcement, modeling, punishment, and instruction depicted behavior patterns of the master teacher. Two additional categories, scold/instruction and hustle were necessary to fully describe the behaviors elicited by Wooden. It was found that over 50% of Wooden's coaching behavior was instructionally oriented.

Bain (1978) conducted an investigation that described values and norms implicit in secondary school physical education classes and athletic team practices. She also tested hypotheses concerning differences between male and female educators and between teachers and coaches. A 1976 revision of the Implicit Values Instrument for Physical Education was used. The results indicated that female subjects scored higher than males on privacy, instructional achievement, and specificity. Teachers scored higher than coaches on the universalism dimension. Bain (1978) concluded that the sex differences in the implicit values of physical

education teachers and coaches seem to mirror the sex-role expectations of society and differences in the socialization of men and women physical educators into the teaching role. The results of this investigation confirm those of earlier research that female teachers and coaches protect the privacy of students to a greater extent than male teachers and coaches. The higher score on instructional achievement indicated that the women emphasized skill acquisition to a greater extent than the men. High scores in specificity for women indicated that athletic team practices were focused specifically upon the accomplishment of skilled performance.

Interaction analysis (IA) has been an effective instrument used by researchers to look at coaching behavior. Kasson (1974) compared teaching and coaching through the use of IA. The Mancuso Adaptation for Verbal and Nonverbal Observation System (Mancuso, 1972) was used. Athletic coaches were not any more direct in the teaching of physical education classes than in their coaching. The most frequent behaviors in teaching were lecturing or verbal demonstration, performance of physical skills, nonverbal directions, and silence. The predominant behaviors exhibited by coaches were verbal lectures, demonstration, and silence.

Agnew (1977) compared the behavior patterns of females while teaching and coaching. CAFIAS was the observer system used. Results showed that interaction between the pupils/athletes and the teacher/coach was greater in the coaching setting. Female instructors also used more praise and

acceptance in the coaching setting than in the classroom setting.

Avery (1978) used the Coaches' Performance Criteria Questionnaire to divide coaches into effective and less effective groups. Two videotaped practice sessions of each coach were coded by the use of CAFIAS. Findings showed that effective coaches displayed more indirect behavior than the less effective coaches, and more interpretive behavior was found on the part of athletes in the satisfied group.

Hirsch (1978), Proulx (1979), and Staurowsky (1979) combined CAFIAS and the Group Environment Scale to investigate coaching behaviors from two separate environments, satisfied and less satisfied. In all three studies, in satisfied environments they found more interaction between the coach and the athletes and more pupil-initiated behaviors, both coach and athlete suggested. Coaches in the satisfied environments used more verbal and nonverbal praise and acceptance during the practice sessions. In Proulx's (1979) study of interaction patterns of male high school coaches, extended athlete interpretive drills occurred 41% of the time in the satisfied group compared to 29% in the less satisfied group. Extended information was given by the coaches in the satisfied group 6.33% of the time while those in the less satisfied group used extended information giving 11.91% of the time. There was an absence of praise in the less satisfied group.

According to the top 10 cell frequencies and percentage

of occurrence, Staurowsky (1979) found extended interpretive drills by the athletes as the dominant behavior pattern for the satisfied group with the occurrence of 31.02% of the behaviors, whereas, athlete narrow response was the major behavior exhibited in the less satisfied group. Extended information-giving by the coach occurred 12.07% of the time in the less satisfied group, while 7.72% of the behavior was extended information-giving behavior in the satisfied environment. There was a lack of praise and acceptance shown by coaches in the less satisfied environment.

Teacher Sex and Classroom Interaction

Role theory would suggest that since teachers are trained for similar roles and since similar expectations are placed upon them by school principals and others, both male and female teachers should behave similarly in like situations (Brophy & Good, 1970).

In a study by Sikes (1971) general differences between male and female teachers are worth noting. The female teachers' classes seemed to be more active, with greater student involvement and greater student interaction with the teachers. Students in the female teachers' classes initiated more comments and questions, had more response opportunities, and initiated more private contacts with the teachers. They were more likely to guess when unsure of their responses in the female teachers' classes and more likely to remain silent in the male teachers' classroom.

Student perception data supporting these classroom

observation results were reported by Veldman and Peck (1964). Students' rating of their student teachers showed no overall preference for student teachers by sex, nor did they consider teachers of either sex to be more poised, organized, or knowledgeable about subject matter than teachers of the opposite sex. However, they did rate female student teachers as being friendlier, more cheerful, more interested in their students, and more democratic in their teaching process.

Good, Biddle, and Brophy (1975) found that in failure situations male teachers provided the student with another chance to respond by asking another question, while female teachers gave the answer or called on someone else. Female teachers responded more favorably to success situations, in which they provided feedback and/or praise, while male teachers responded more favorably in failure situations, in which they stayed with the students and worked to improve their responses.

Brophy and Good (1970) reported that male teachers spent more time lecturing in the classroom than female teachers. Male teachers also spent more time giving information than dealing with procedural matters. They also found that the classrooms of male teachers were more organized and teacher-dominated than the classrooms of female teachers.

These data suggest that there may be a few differences between male and female teachers in the way they approach teaching and act in the classroom. In general, the similarities between male and female teachers are much more

numerous than their differences because the role of the teacher tends to submerge sex-related differences (Brophy & Good, 1974).

Men Coaching Women

The men coaching females have come into the coaching field with a different background and perspective than women coaches. The male has been trained in strategies and techniques of a sport, and he has pursued a career in the area that has interested him since childhood (Neal & Tutko, 1975). As a result, colleges and universities have offered coaching classes as part of the curriculum to develop coaching proficiency. Neal and Tutko (1975) stated that women actively seeking to coach have been so few that colleges and universities have not been faced with the need to offer coaching classes for women as they have for men. Tutko (1975) indicated that as more women actually participate in athletic programs, and as more women go on to colleges and request coaching classes, there will be many more women qualified to coach. Until that time, women must rely on men to help with women's sports programs (Tutko, 1975).

Ogilvie and Tutko (1966) believe that successful male coaches have characteristics related to success. National level coaches are more emotionally mature and independent and, in general, possess qualities that are necessary to withstand the pressures of coaching. According to Cratty (1973), superior coaches possess personality traits reflecting emotional self-control, aggressiveness, and intelligence.

General socialization literature suggests the more powerful role model is usually more influential regardless of sex (Greendorfer, 1977). Beisser (1967) pointed out that the father and the coach play similar roles in our society. If the father has been the dominant force in the family, then the athlete looks upon the coach in a similar vein.

A social learning paradigm was used by Greendorfer (1977) to examine the influence of socializing agents on the process of socialization of women into sport. Research revealed that male role models were more significant during initial sport socialization stages, whereas, the significant influence of female role models, if any, came after females had been initiated into sport. Greendorfer (1977) stated, "Since males are more visible and play a more dominant role in sport the most influential socializing agents in the female sport socialization process are males" (p. 305).

Results indicated that at all life-cycle stages, peers were the most influential of all socializing agents. The family's role was more influential during childhood than at any other stage, and coaches and teachers had greater influence during adolescence than at any other stage.

Ogilvie and Tutko (1966) stated that men who coach girls' and women's teams help the women athletes in more ways other than actual coaching. The authors viewed the male coach as a strong authoritarian figure. Ogilvie and Tutko (1966) further stated that many girls and women respond without difficulty to the male coach, "since his authority and his right to

govern is an accepted role as a result of our overall cultural pattern" (p. 11).

Neal and Tutko (1975) indicated that many male coaches get more successful results from women athletes by "pushing" them to do their best, not by pampering them as much as some female coaches might. Another advantage the male coach has had over most female coaches is his background and experience in sports. His knowledge of sport has been usually so much greater that women athletes accept his ability and his discipline in training without question, whereas, female coaches must first prove themselves (Neal & Tutko, 1975).

Ogilvie and Tutko (1966) believed the authoritarian or adviser type of personality would be the most effective male coaching personality to work with members of women's teams. Since the traditional male role in American society is generally a dominant one, the authoritarian personality may be a role with which women may be reasonably comfortable. The emotionality of women may require that a coach of this type unbend and act as an adviser when they confront him with personal problems (Ogilvie & Tutko, 1966).

The male coach who tends to be too permissive and who acts as a confidant and friend to members of a women's team may encourage favoritism on some athlete's part and create an unhealthy situation in which personal attraction to one or more members may interfere with his effectiveness in handling the total group. If a real and honest attachment is formed between a coach and a woman athlete, it should be known to all

and should not be carried out secretly (Ogilvie & Tutko, 1966).

One might wonder why a man would wish to coach females in a sport that has body contact, i.e., basketball. Male coaches report that coaching females is dramatically different than coaching males because of the girls' greater cooperation, personal concern, willingness to change, and general enthusiasm. A number of these coaches report that coaching males, particularly in a highly competitive environment, leads to problems not commonly encountered with females (Neal & Tutko, 1975).

Female athletes who are coached by males in a contact sport may feel more comfortable with a male coach since their impression is that this area is male dominated, and a male coach will thus be more knowledgeable than a woman. As a result, the athletes may be more inclined to listen to a male coach.

Summary

Various systems of analysis which classify pupil and teacher talk have been developed. One of the most widely used interaction system is Flander's Interaction Analysis System (FIAS). Not only does it allow categorization of the verbal behavior occurring in the classroom, but it also enables the observer and the teacher to analyze, summarize, and draw inferences from the data collected. A significant modification of FIAS, Cheffers' Adaptation of Flanders' Interaction Analysis System (CAFIAS) was developed to code verbal and nonverbal behaviors and to identify the structure

of the activity.

Agnew (1977) and Kasson (1974) provided information concerning the role of verbal and nonverbal behavior in teaching and coaching. Agnew (1977) found more pupil-initiated behavior in the coaching environment; Kasson (1974) found more direct behavior in both teaching and coaching situations. Hirsch (1978), Proulx (1979), and Staurowsky (1979) compared coaching behaviors in two athletic environments and found more interaction between coaches and athletes in the satisfied environment than in the less satisfied environment.

Studies of the differences between male teachers and female teachers must be taken as merely suggestive rather than conclusive. Male teachers were seen as being more achievement oriented than female teachers, therefore, more concerned about putting across the material, working with students to get responses, and seeing that they understand. To this extent, the teaching of male teachers is more direct than that of female teachers. There were suggestions that female teachers praise more and, in general, respond better to student success, while male teachers tend to work more persistently for response and generally teach better in situations involving student failure.

The related literature suggested that there may be a few common differences between male and female teachers in the way they approach teaching and act in the classroom. These differences tend to be in their general approach to teaching

and in teaching style. However, these individual differences among sexes, along with other individual differences among teachers, are usually outweighed by their similarities, so that teachers tend to act alike when working in the same environment (Brophy & Good, 1974).

Ogilvie and Tutko (1966), Beisser (1967), and Greendorfer (1977) revealed that male role models play a dominant role in the socialization process of women in sport. Therefore, women would respond without hesitation to the male coach as an outgrowth of social learning.

Neal and Tutko (1975) indicated the advantages male coaches have in coaching women athletes. Male coaches have "pushed" women athletes to do their best, and women athletes have respected the male's ability and discipline in training because of his background and experience.

Chapter 3

METHODS AND PROCEDURES

This chapter is concerned with the methods and procedures that were appropriate for this investigation. It includes the selection of subjects, testing instrument, procedures, scoring of data, coder reliability, treatment of data, and a summary.

Selection of Subjects

Thirty female secondary school basketball teams and their coaches (15 male, 15 female) in the central New York State area served as subjects for this study. Informed consent forms explaining the specific details of the study were given to each coach (see Appendix A). Coaches were introduced to the interaction analysis device and informed of its purpose. Coaches and athletes were made aware that information would be kept confidential. Each coach was also given the option of not participating or withdrawing, at will, from the study.

Testing Instrument

Cheffers' Adaptation of Flanders' Interaction Analysis System (CAFIAS) (Appendix B) was used to code coach-athlete interaction behavior patterns. The primary purpose of this system was to record both verbal and nonverbal behaviors in the coaching setting. Behaviors were recorded every 3 seconds

or whenever a particular behavior change was noted.

Procedure

Each coach was personally contacted by the investigator and instructed in the procedures involved in the study. Two visits were made to each school. Each visit consisted of 30 minutes of regularly scheduled practice sessions. The tapes were coded through the use of CAFIAS.

Scoring of Data

Two practice sessions were combined to determine the criterion score for each individual coach. Data collected from the coding of CAFIAS were placed on computer cards to be analyzed. The computer print-out tabulated ratios and percentages for the eight variables used in this study.

Coder Reliability

The Spearman rank-order correlation was the statistical procedure used in determining coder reliability (Appendix C). Each of two randomly selected practice sessions were coded at two different times by Dr. Victor H. Mancini. The top 10 cell concentrations at each coding were subjected to a Spearman rank-order correlation procedure.

Treatment of Data

A multivariate analysis of variance (MANOVA) was performed to determine whether differences in coaching behaviors, as identified by CAFIAS, existed between male coaches and female coaches. Discriminant function analysis was used to identify those variables accounting for the greatest portion of the shared variance. Analysis of variance

(ANOVA) was used to locate which of the eight CAFIAS variables when considered independently indicated differences between the two groups.

Summary

Thirty female secondary school basketball teams and their coaches (15 male, 15 female) in the central New York State area served as subjects to compare the coaching behaviors of men and women coaching female athletes. Each team was videotaped twice during regularly scheduled practice sessions. CAFIAS was used to code the practice sessions. Two practice sessions were combined to determine the criterion scores for each individual coach.

Overall group differences were determined for the eight CAFIAS variables using MANOVA. Through ANOVA those variables that independently indicated differences between the two coaching groups were located, while discriminant function analysis was used to identify those variables accounting for the greatest portion of the shared variance.

Chapter 4

ANALYSIS OF DATA

This chapter presents the results that were found when comparing the behaviors of the male and female basketball coaches coaching the female basketball player. Cheffers' Adaptation of Flanders' Interaction Analysis System (CAFIAS) was utilized to measure the behaviors of basketball coaches. In addition, this chapter discusses the assessment of coder reliability and concludes with a summary.

Coder Reliability

In order to determine the reliability of the coder for this investigation, two videotaped coaching sessions were randomly selected from the tapes of the 15 male and 15 female coaches. Each tape was coded during two independent observation sessions. The Spearman rank-order correlation was calculated for each session on the rankings of the behaviors for the two codings (see Table 1). The mean of the correlations was .9863, which was sufficient to indicate that the coder was reliable.

Analysis of Male and Female Basketball Coaches

A multivariate analysis of variance (MANOVA) was performed on eight selected variables identified through the use of CAFIAS. The MANOVA procedure resulted in a value of $F(8,21) = 3.61$, $p < .05$. The finding of this significant

Table 1
Coder Reliability*

Subjects	<u>r_s</u>	<u>M</u>
Male coach 4	.9879	.9863
Female coach 7	.9848	

*Coder reliability determined by Spearman Rho Correlations of two codings of coaching behaviors for a male and a female coach.

between-groups difference led to the rejection of the hypothesis that there will be no significant differences in coaching behaviors between male and female basketball coaches coaching the female athlete. As shown in Table 2, six variables were found to have significantly different occurrences when univariate ANOVA was applied to each variable independently. These were coach use of acceptance and praise, verbal; coach use of acceptance and praise, nonverbal; athlete verbal initiation, coach suggestion; athlete nonverbal initiation, coach suggestion; athlete verbal initiation, athlete suggestion; and athlete nonverbal initiation, athlete suggestion.

The discriminant function analysis identified the percent of contribution to the between-group difference for each of the eight CAFIAS variables. The use of verbal acceptance and praise by the coach contributed 46.55% to the between-groups variance. This was followed by coach use of questioning, nonverbal, 15.57%; coach use of acceptance and praise, nonverbal, 11.71%; athlete nonverbal initiation, coach suggestion, 10.33%; and athlete nonverbal initiation, athlete suggestion, 9.53%. The remaining three variables, as a group, contributed less than 10% to the discriminant function. These results are illustrated in Table 3.

For each of the 20 CAFIAS categories of behaviors, the mean percentage of occurrence was calculated for each group. In Figure 1 the differences between the male and female basketball coaches in the occurrence of each of these

Table 2

Means, Standard Deviations and ANOVAs for Eight CAFIAS Variables

Variable	Males		Females		<u>F</u> (1,28)
	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>	
Coach Use of Questioning, Verbal	5.68	4.21	6.98	3.80	.79
Coach Use of Questioning, Nonverbal	13.04	14.80	27.69	25.80	3.64
Coach Use of Acceptance and Praise, Verbal	23.68	18.51	45.95	13.52	14.15*
Coach Use of Acceptance and Praise, Nonverbal	29.67	20.71	53.32	23.07	8.73*
Athlete Verbal Initiation, Coach Suggestion	46.00	28.63	75.66	16.78	11.98*

Table 2 (continued)

Variable	Males		Females		F(1,28)
	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>	
Athlete					
Nonverbal					
Initiation,					
Coach					
Suggestion	21.14	24.89	55.29	20.32	16.94*
Athlete Verbal					
Initiation,					
Athlete					
Suggestion	19.82	21.59	5.70	4.90	6.09*
Athlete					
Nonverbal					
Initiation,					
Athlete					
Suggestion	14.46	18.48	4.20	5.11	4.28*

*p < .05.

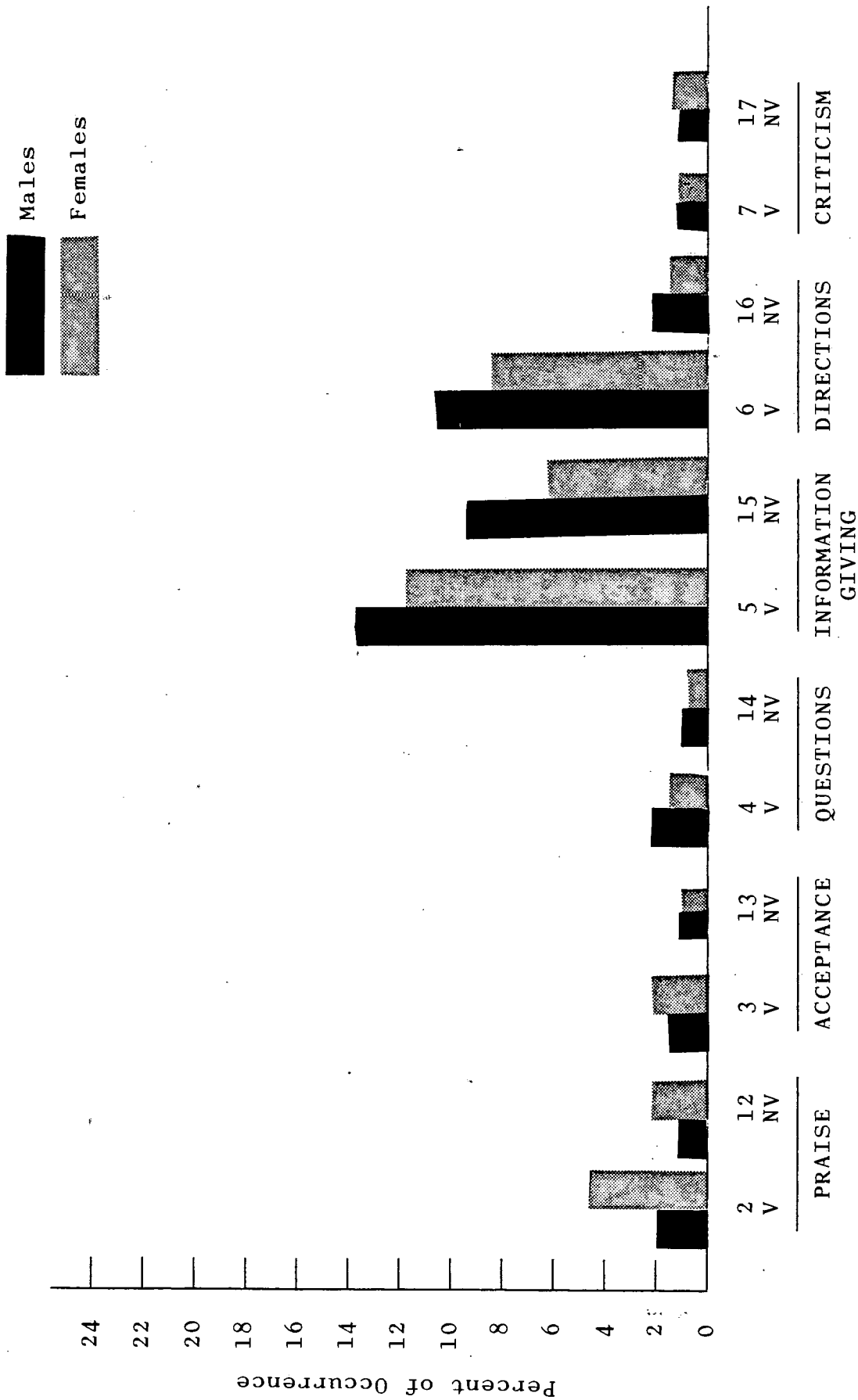
Table 3

Discriminant Function Analysis for the Eight CAFIAS Variables

Variables	Standardized Discriminant Weight	Squared Discriminant Weight	Percent of Contribution to the Discriminant Function
Coach Use of Questioning, Verbal	.01044	.00011	0.01
Coach Use of Questioning, Nonverbal	.39458	.15570	15.57
Coach Use of Acceptance and Praise, Verbal	.68229	.46552	46.55
Coach Use of Acceptance and Praise, Nonverbal	-.34219	.11710	11.71
Athlete Verbal Initiation, Coach Suggestion	.24583	.06043	6.04

Table 3 (continued)

Variables	Standardized Discriminant Weight	Squared Discriminant Weight	Percent of Contribution to the Discriminant Function
Athlete Nonverbal			
Initiation, Coach Suggestion	.32139	.10329	10.33
Athlete Verbal			
Initiation, Athlete Suggestion	-.05042	.00254	0.25
Athlete Nonverbal			
Initiation, Athlete Suggestion	.30873	.09532	9.53



COACH

Figure 1. Mean percentages for the CAFIAS variables.

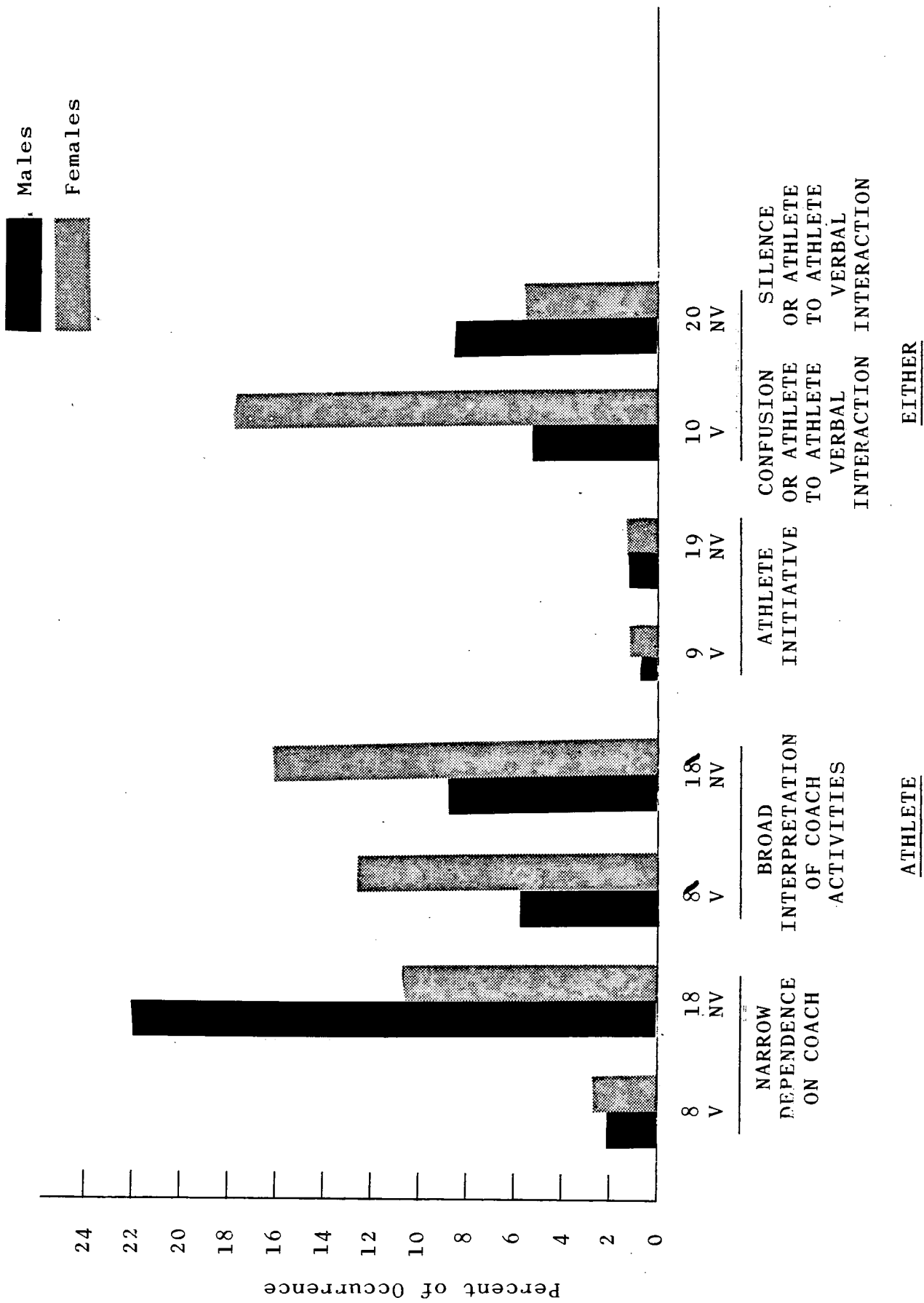


Figure 1. (continued)

categories are illustrated. It was found that females used a greater percentage of praise than their male counterparts. Male coaches gave more verbal and nonverbal information and directions. With male coaches the nonverbal predictable response was the most predominant behavior exhibited by the athletes. Athletes coached by females exhibited more verbal and nonverbal interpretive response than those coached by males. In the coding procedure the term confusion (coded as a 10) is also used to indicate athlete-to-athlete interaction; this variable occurred almost three times as frequently among athletes with female coaches than among those with male coaches. In the coding procedure the term silence (coded as a 20) is also used to indicate athlete-to-athlete interaction of a nonverbal nature; it occurred more often among athletes with male coaches rather than female coaches.

The predominant interaction patterns of the basketball teams in both groups were also studied. A summary of the most frequent interaction patterns and the percentages of occurrence is shown in Table 4. For the male coaching group, extended information-giving by the coach (5-5) was the dominant behavior pattern, occurring 19.39% of the time as compared to 8.20% in the female coaching group. This was followed by extended athlete-to-athlete predictable drills (8-10-8). Athlete-to-athlete interaction in the form of interpretive drills or scrimmaging (8-10-8) was the most frequent pattern. The sequence continued with coach use of directions followed by athlete predictable response followed by coach use of

Table 4
Summary of Most Frequent Interaction Patterns
of Male and Female Basketball Coaches

Male		Female	
Interaction Patterns	Percentage of Occurrence	Interaction Patterns	Percentage of Occurrence
5-5	19.39	8 -10- 8	32.53
8-10-8	17.10	8-10-8	11.74
8 -10- 8	12.54	5-5	8.20
6-8-6	12.41	5- 8 -5	7.54
5-6-8	8.02	8 -2	6.42
		6- 8 -6	5.83
		6-8-6	4.25

5-5 extended information-giving by the coach

8-10-8 extended athlete-to-athlete predictable response

~~8~~-10-~~8~~ athlete-to-athlete interpretive drills and
scrimmage

6-8-6 coach directions followed by athlete predictable
response followed by coach directions

5-6-8 coach information-giving and directions followed
by athlete predictable behavior

5-~~8~~-5 coach information-giving followed by athlete
interpretive response and further information-
giving by the coach

Table 4 (continued)

- 8-2 athlete interpretive response followed by coach
use of praise
- 6-8-6 coach directions followed by athlete interpretive
response followed by coach directions

directions (6-8-6). This was followed by coach use of information-giving and directions, then athlete predictable behavior (5-6-8).

The female coaching group showed a different sequence of behaviors. Athlete-to-athlete interaction in the form of interpretive behavior (8-10-8) was followed by athlete-to-athlete interaction in the form of predictable behavior (8-10-8). Extended information-giving by the coach was followed by athlete interpretive response and further information-giving by the coach (5-5-8-5). The sequence continued with athlete interpretive response followed by coach use of praise (8-2). Closing the sequence was coach use of directions followed by athlete interpretive response followed by coach use of directions followed by athlete predictable response and more coach use of directions (6-8-6-8-6). The dominant behavior in the female coaching group was extended interpretive drills or scrimmaging by the athletes, occurring 32.53% of the time as compared to 12.54% by male coaches. Athlete interpretive response followed by coach use of praise was found among the top behavior patterns only in the female coaching group.

Summary

Coder reliability was determined by randomly selecting two videotaped coaching sessions from the tapes for the 15 male and 15 female coaches. The Spearman rank-order correlation was calculated on the rankings from two independent codings of the behaviors of coaches on each of the two selected

tapes. The mean of the correlations was .9863 which was sufficient to indicate that the coder was reliable.

A MANOVA, performed on the eight CAFIAS variables indicated significant ($p < .05$) differences in coaching behaviors between male and female basketball coaches coaching the female athlete.

According to information furnished by discriminant function analysis, the factors that contributed the greatest amount to the multivariate difference were coach use of acceptance and praise, verbal and nonverbal; coach use of questioning, nonverbal; and athlete nonverbal initiation, coach suggestion. Univariate ANOVA revealed significant differences on six of the eight CAFIAS variables.

Extended information-giving was the dominant behavior in the male coaching group, while extended interpretive drills or scrimmaging by the athletes was the dominant behavior in the female coaching group. Athlete interpretive response followed by coach use of praise was found only in the female coaching group.

Chapter 5

DISCUSSION OF RESULTS

A discussion of the results from this investigation is presented in this chapter. In this study the coaching behaviors of male and female coaches who coached the female basketball player were analyzed and compared. The behavioral analysis of the two groups was accomplished through the use of Cheffers' Adaptation of Flanders' Interaction Analysis System, known as CAFIAS (Cheffers, 1972).

In this study multivariate analysis of variance (MANOVA), indicated that significant differences in coaching behaviors existed between males and females. The eight CAFIAS variables were subjected to discriminant function analysis to determine each individual variable's contribution to the shared variance. Coach use of acceptance and praise, verbal (46.55%) was determined to be a highly significant discriminator between male and female coaches. Other variables of importance included coach use of questioning, nonverbal (15.57%); coach use of acceptance and praise, nonverbal (11.71%); athlete nonverbal initiation, coach suggestion (10.33%); and athlete nonverbal initiation, athlete suggestion (9.53%). The high percentage of verbal acceptance and praise by the coach indicated that female coaches responded to their athletes in a warm, flattering, and understanding manner, whereas, male

coaches displayed more directive and authoritative behaviors. The findings of greater use of acceptance and praise, verbal and nonverbal, by females in the present study coincide with earlier findings by Agnew (1977) and Lombardo (1979) who found female physical education instructors used more verbal praise than the male instructors.

The effect each of the eight CAFIAS variables had independent of one another was assessed using analysis of variance. Of the eight variables investigated, six were found to identify statistically significant differences between male and female coaches. These were coach use of acceptance and praise, verbal; coach use of acceptance and praise, nonverbal; athlete verbal initiation, coach suggestion; athlete nonverbal initiation, coach suggestion; athlete verbal initiation, athlete suggestion; and athlete nonverbal initiation, athlete suggestion. These results coincide with those found by Hirsch (1978), Proulx (1979), and Staurowsky (1979). In all three studies, in coaching environments classified as more satisfied, there were both more interaction between the coach and the athletes and more pupil-initiated behaviors. In the satisfied environments coaches used more verbal praise and acceptance during the practice sessions, and athletes demonstrated more verbal athlete-to-athlete interaction. The less satisfied group was characterized by greater mean percentages of information-giving, coach direction-giving, nonverbal athlete narrow behavior, and nonverbal athlete-to-athlete interaction.

Avery (1978) divided coaches into effective and less effective groups. She found effective coaches displayed more indirect behavior than the less effective coaches; more interpretive behavior was found on the part of the athletes in the effective coaching group.

In the present study, the predominant behaviors exhibited by male coaches were identical to those behaviors found in the less satisfied environments and less effective coaching groups of previous studies. Results exhibited by the female coaches in the current study were the same as those displayed in the satisfied environments and more effective coaching groups of the same studies.

Descriptive data were gathered by calculating the mean percentage of occurrence of each of the 20 CAFIAS categories and the predominant interaction patterns for both male and female coaches. In Figure 1 it was shown that female coaches used more verbal praise, and male coaches used more verbal and nonverbal information-giving and directions. Behaviors exhibited by the athletes included a greater percentage of occurrence of nonverbal narrow dependence upon the coach in the male coaching group. Interpretive verbal and nonverbal responses of athletes occurred more often in the female coaching group. Athlete-to-athlete verbal interaction was greater with those athletes coached by females, while silence, or athlete-to-athlete nonverbal interaction, occurred more often with male coaches. In a study by Sikes (1971), female teachers' classes seemed to be more active, with greater

student involvement and greater student interaction with teachers. Students in the female teachers' classes initiated more private contacts with the teachers, whereas, they were more likely to remain silent in a male teacher's classroom. These results seem to be in accordance with results found in the current study.

Extended information-giving by the coach (5-5) occurred 19.39% and 8.20% of the time for male and female coaches, respectively. Extended athlete-to-athlete interpretive response and game playing (8-10-8) was the dominant behavior pattern for the female coaching group; it occurred 32.53% of the time as compared to 12.54% in the male coaching group. This indicated that practice sessions with female coaches consisted of drills and scrimmaging which were more exploratory than routine. Extended athlete-to-athlete predictable response (8-10-8) was more evident with male coaches, suggesting that practices were composed of drills that were more mechanical than interpretive. As stated by Gerber (1974) these findings may be the result of the professional preparation of male and female coaches. Male coaches in general have had more competitive experiences in basketball and can be more specific thus providing more clear-cut directions in their practice sessions. Female coaches have not engaged in the same amount of competitive experience and, therefore, have tended to be very abstract in their practice sessions.

The next highest behavior pattern, exhibited 12.41% of

the time in the male coaching group, was direction-giving followed by athlete predictable response followed by more direction-giving (6-8-6); it occurred only 4.25% in the female coaching group. A behavior pattern found in the female coaching group was athlete interpretive behavior followed by coach use of praise (8-2); it occurred 6.42% of the time among female coaches but was nonexistent in the male coaching group.

Tharp and Gallimore (1976) indicated that direct observation was the most efficient way of assessing coaching behavior. A traditional observer system was used to look at the coaching methods of John Wooden while he was basketball coach at UCLA. Categories consisting of reinforcement, modeling, punishment, and instruction depicted behavior patterns of the renowned coach. Results showed that over 50% of Wooden's coaching behaviors were instructionally oriented, thus describing Wooden as a distributor of information. It was noted that Wooden rarely used praise with his athletes and depended upon communication and organization rather than motivation. In the current study, extended information-giving was a prominent pattern that was exhibited more often by male coaches than by female coaches. Acceptance and praise were lacking from the commonly used male coaching repertoire. Brophy and Good (1970) and Nygaard (1975) also found that both male and female teachers lectured and gave directions, but male teachers displayed more of this direct verbal influence. They also found that the classrooms of male teachers were more organized

and teacher dominated than the classrooms of female teachers.

The direct behavior shown by male coaches indicated that the coach dominated the practice sessions by lecturing, directing, and ordering, which may have led to an atmosphere which restricted and inhibited the athlete's desire to respond freely. This type of environment was found in a number of male coaches' practice sessions. The atmosphere was one of seriousness and intense concentration, marked mostly with silence.

The indirect behavior exhibited by female coaches in the form of praise, acceptance, and encouragement directed toward the athletes provided an easygoing and carefree atmosphere. This type of environment seemed to occur in most practice sessions coached by females. This may be explained by the large number of instances in which the female coach was also the athlete's physical education teacher, and/or the athlete had the same coach for another sport. If this were the case, a strong bond may have been formed by the athlete and coach before entering the basketball season. The athlete may have felt more secure with the female coach in this competitive atmosphere.

Summary

Results from the CAFIAS data were subjected to MANOVA. This resulted in the conclusion that significant behavioral differences existed between male and female coaches coaching the female basketball player.

Of the eight CAFIAS variables coach use of acceptance

and praise, verbal was a highly significant discriminator between groups. This indicated that female coaches responded to their athletes in a flattering and understanding manner, whereas, male coaches displayed more authoritative behaviors. These results are further explained by the predominant interaction patterns for both male and female coaches. The behavior patterns that occurred most frequently in the male coaching group were extended information-giving and extended athlete narrow response, whereas, extended interpretive drills or scrimmaging characterized the female coaching group. This indicated practices in the male coaching group consisted of drills more mechanical than interpretive.

In the present study the indirect behaviors exhibited by the female coaching group were the same as those displayed in the satisfied environments and more effective coaching groups. These results and those from the ANOVAS and discriminant function analysis imply that female coaches permitted their athletes freedom to interact with them verbally, while male coaches were more commanding and restraining.

Chapter 6

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS FOR FURTHER STUDY

Summary

In this study the behaviors of male and female basketball coaches coaching the female basketball player were analyzed and compared. Subjects included 30 central New York girls' basketball teams and their coaches, 15 males and 15 females. Each team was videotaped during two practice sessions. The videotaped practice sessions were coded through the use of CAFIAS. Results from multivariate analysis of variance of the eight CAFIAS variables revealed significant group differences. Univariate ANOVA identified six variables on which the groups differed significantly when the variable was considered independently of the other variables. These were coach use of acceptance and praise, verbal; coach use of acceptance and praise, nonverbal; athlete verbal initiation, coach suggestion; athlete nonverbal initiation, coach suggestion; athlete verbal initiation, athlete suggestion; and athlete nonverbal initiation, athlete suggestion.

Of the eight CAFIAS variables, five were found to account for over 90% of the between-groups variance, as identified by discriminant function analysis. The five variables and their contributions to the multivariate difference were coach use of acceptance and praise, verbal (46.55%); coach use of

questioning, nonverbal (15.57%); coach use of acceptance and praise, nonverbal (11.71%); athlete nonverbal initiation, coach suggestion (10.33%); and athlete nonverbal initiation, athlete suggestion (9.53%). Interpretive behaviors occurred more often among those athletes coached by females, while those athletes coached by males were found to be more mechanical in their practice sessions. In comparing the mean percentages of CAFIAS behaviors, female coaches were found to use more praise, while more athlete verbal interaction was displayed with female coaches than with male coaches. The most prominent behaviors occurring in the male coaching group were verbal and nonverbal information-giving, verbal and nonverbal coach direction-giving, athlete nonverbal narrow behavior, and athlete-to-athlete nonverbal interaction.

According to the predominant interaction patterns, athlete extended interpretive drills, or scrimmaging, was the dominant behavior pattern for the female coaching group with an occurrence of 32.53%, whereas, extended information-giving by the coach was the major behavior exhibited in the male coaching group. There was a lack of acceptance and praise shown by male coaches. These results suggest several things about the behavior of the coaches used in this study. Use of acceptance and praise was a major difference between male and female coaches. This finding supports earlier findings on the tendency of females to show more indirect behavior through interaction analysis, while male coaches displayed more direct behaviors as distributors of information.

Conclusions

The following conclusions were formulated from the results of this study:

1. There was more interaction between female coaches and their athletes than between the male coaches and their athletes.

2. Female coaches used more acceptance and praise than their male counterparts.

3. Male coaches gave more verbal and nonverbal information and directions than female coaches.

4. Athletes coached by females exhibited a greater percentage of verbal and nonverbal interpretive responses than those coached by males.

5. Extended interpretive drill, or scrimmaging, was the dominant behavior occurring among the athletes coached by females.

6. Extended information-giving was the dominant behavior in the practices of teams coached by males.

Recommendations

The following recommendations are suggested for further study:

1. Conduct a similar study at the college level.

2. Contrast the behaviors of coaches who have had physical education teacher preparation and coaches who have not had physical education teacher preparation.

3. Conduct a similar study of female and male coaches who coach female athletes in an individual sport.

Appendix A

Informed Consent Form

The study in which you are asked to participate involves looking at the interaction between male and female coaching behavior and female basketball players at the secondary level.

The following procedures will be used: you will be videotaped during two practice sessions throughout the season. During the taping sessions you will be wearing a microphone which should not interfere with your practice. The tapes will be subjected to a widely used interaction analysis system. This interaction analysis system consists of 20 categories to describe verbal and nonverbal behaviors which occur between coaches and athletes.

All names in this study will be kept confidential. If you do not have any questions and agree to take part in this study, please sign your name in the space provided below.

Name _____

Date _____

Appendix B

THE CATEGORIES OF CHEFFERS' ADAPTATION OF
FLANDERS' INTERACTION ANALYSIS SYSTEM¹

Categories	Verbal	Relevant Behaviors	Nonverbal
2-12	Praises, commands, jokes, encourages	Face: Posture:	Smiles, nods with smile (energetic) winks, laughs Clasps hands, pats on shoulder, places hand on head of student, wrings student's hand, embraces joyfully, laughs to encourage, spots in gymnastics, helps child over obstacles

2

12

Appendix B (continued)

Categories	Verbal	Relevant Behaviors	Nonverbal
	3		13
3-13	Accepts, clarifies, uses, and develops suggestion and feeling by the learner	Face: Nods without smiling, tilts head in empathetic reflection, sighs empathetically	
		Posture: Shakes hands, embraces sympathetically, places hand on shoulder, puts arm around shoulder or waist, catches an implement thrown by student, accepts facilities	
	4		14
4-14	Asks questions requiring student answer	Face: Wrinkles brow, opens mouth, turns head with quizzical look	
		Posture: Places hand to air, waves finger to and fro anticipating answer, scratches head, cups hand to ear, stands still half turned towards person, awaits answer	

Appendix B (continued)

Categories	Verbal	Relevant Behaviors	Nonverbal
			15
5-15	Gives facts, opinions, expresses ideas, or asks rhetorical questions	Face: Whispers words inaudibly, sings, or whistles Posture: Gesticulates, draws, writes, demonstrates activities, points	
			16
6-16	Gives directions or orders	Face: Points with head, beckons with head, yells at Posture: Points finger, blows whistle, holds body erect while barking commands, pushes child through a movement, pushes a child in a given direction	

Appendix B (continued)

Categories	Verbal	Relevant Behaviors	Nonverbal
	7		17
7-17	Criticizes, expresses anger or distrust, sarcastic or extreme self-reference	Face: Grimaces, growls, frowns, drops head, throws head back in derisive laughter, rolls eyes, bites, spits, butts with head, shakes head	
		Posture: Hits, pushes away, pinches, grapples with, pushes hands at student, drops hand in disgust, bangs table, damages equipment, throws things down	
	8		18
8-18	Student's response that is entirely predictable, such as obedience to orders, or responses not requiring thinking beyond the comprehension phase of knowledge	Face: Poker face response, nods, shakes, gives small grunts, quick smile.	Posture: Moves mechanically to questions or directions, responds to any actions with minimal nervous activity, robot-like

Appendix A (continued)

Categories	Verbal	Relevant Behaviors	Nonverbal
<p>Eineteen (18)</p> <p>&</p> <p>Eineteen (18)</p>	<p>Predictable student responses requiring some measure of evaluation and synthesis from the student, but must remain within the province of predictability.</p> <p>The initial behavior was in response to teacher initiation.</p>	<p>Face: A "What's more, Sir" look, eyes sparkling.</p> <p>Posture: Adds movements to those given or expected, tries to show some arrangement requiring additional thinking; e.g., works on gymnastic routine, dribbles basketball, all game playing.</p>	<p>Eineteen (18)</p>

Appendix B (continued)

Categories	Verbal	Relevant Behaviors	Nonverbal
	9		19
9-19	Pupil-initiated talk that is purely the result of their own initiative and that could not be predicted	Face: Interrupting sounds, gasps, sighs Posture: Puts hands up to ask questions, gets up and walks around without provocation, begins creative movement education, makes up own games, makes up own movements, shows initiative in supportive movement, introduces new movements into games	
	10		20
10-20	Stands for confusion, chaos, disorder, noise, much noise	Face: Silence, children sitting doing nothing, noiselessly awaiting teacher just prior to teacher entry, etc.	

¹Cited from Cheffers, Amidon, & Rodgers (1974).

Appendix C

Coder's Reliability* for Selected Coaches

Using Spearman's r_s

Female Coach 7

Top 10 Cells	Random	Random	<u>d</u>	<u>d</u> ²
	Observation One	Observation Two		
10-8	1.5	1	.50	.25
8 -10	1.5	2	.50	.25
8 -3	3	3	.00	.00
5-5	4	4	.00	.00
6-8	5	5	.00	.00
5-8	6	6	.00	.00
8 -2	7	7	.00	.00
8 -5	8	9	1.00	1.00
3-6	9	8	1.00	1.00
3-5	10	10	.00	.00
Total				2.50

*.9848

Top 10 cells listed refer to the order of coder's numerical frequency.

Random observation one and observation two refer to the origin of the coding.

Appendix C (continued)

\underline{d} refers to the differences between the ranks of each cell for observation one and observation two.

\underline{d}^2 refers to the \underline{d} column squared.

Appendix C (continued)

Coder's Reliability* for Selected Coaches

Using Spearman's r_s

Male Coach 4

Top 10 Cells	Random Observation One	Random Observation One	<u>d</u>	<u>d</u> ²
5-5	1	1	.00	.00
10-8	2	2	.00	.00
8-10	3	3	.00	.00
8-10	4	4	.00	.00
10-8	5	5	.00	.00
6-8	6	6	.00	.00
8-5	7	7	.00	.00
5-6	8	8	.00	.00
8-6	9	10	1.00	1.00
5-8	10	9	1.00	1.00
Total				2.00

*.9879

Top 10 cells listed refer to the order of coder's numerical frequency.

Random observation one and observation two refer to the origin of the coding.

d refers to the differences between the ranks of each cell for observation one and observation two.

Appendix C (continued)

d² refers to the d column squared.

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