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Descriptive analytical case study of the verbal behavior of basketball coaches

Buck Allen Lorts

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A DESCRIPTIVE ANALYTICAL CASE STUDY OF THE VERBAL BEHAVIOR
OF BASKETBALL COACHES

by

Buck Lorts
B.S., Pacific University, 1972

Presented in partial fulfillment of the requirements
for the degree of

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Approved by:

Chairman, Board of Examiners

Dean, Graduate School

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The seven coaches who put up with me in their half-time sessions, for without their help this study could never have been started.

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CHAPTER I
INTRODUCTION AND REVIEW OF LITERATURE

The analysis and evaluation of teaching is receiving more and more attention. Amidst all this concern there is one field of teaching in which evaluative criteria is generally accepted. This is the field of athletic coaching. Due to the very nature of the field, coaches are constantly being evaluated through their win-loss records. In the literature reviewed for this study there was found no means for evaluating a coach's teaching ability or talent other than his win-loss record. This was the only method used for evaluating a coach's ability. A study by Hendery (12) did attempt to label the qualities of an ideal swimming coach, but the criteria used to determine a successful coach was his win-loss record. He found no difference in the personality traits of successful and non-successful coaches. In a study on authoritarianism, Hasted (11) gave an operational definition of a successful coach as one with an over fifty percent win-loss record. Loy and Kenyon also defined a successful coach as one with a better than fifty percent win-loss record (16). These studies were just a few of many in which the ability of coaches was determined by their win-loss records.

The Coach as Teacher

It is generally accepted that the coach is expected to be, and is accepted as a teacher. Moore (17) stated, "Coaches are expected to be
highly qualified technically in their sports specialty and should possess personal and professional qualities characteristic of all teachers."

Wooden compared the coach to the teacher in this way, "since the most important responsibility of a coach is to teach his players properly and effectively to execute the various fundamentals of the game, he is first of all a teacher" (29). The coach, like all teachers, is constantly searching for ways to improve the learnings processes in his classroom, the field, or the gymnasium. Reeves compared coaching to teaching in this way, "Good coaching is good teaching transferred from the classroom to the gymnasium or field" (25). Wooden pointed out "the coach must be a teacher. He must understand the learning process and follow the laws of learning. He must be able to explain and provide a demonstration, constructively criticize and correct their demonstration and have the corrected imitations repeated and repeated until the proper execution becomes automatic" (29). By more effectively planning his demonstration and through changes in his verbal behavior, the coach may find more success in reaching his objectives in a practice or game situation.

Shirley described the coach as teacher in the following manner, "A coach is first and foremost a teacher. As a teacher first, a coach is interested in the needs of all students, is educationally prepared for his job and is part of the total school program" (27).

These comparisons show the need for the coach to be a good technician as well as a prepared and competent teacher. He must show a high degree of enthusiasm and desire, and most important, he must be aware of all current trends in his field which would enable him to improve his coaching and teaching techniques. The coach who shuns new ideas and techniques is the coach who may have trouble reaching today's players. In a study by
Hendery on ideal, successful, and non-successful swimming coaches, the Sixteen Personality Factor Inventory Test was administered to all the coaches at the Illinois State Swimming Championships (12). The only category in which no significant difference was found between ideal and successful swimming coaches was the area of "willingness to accept change". The successful coaches all seemed to possess the ability to accept new ideas.

Anderson stated, "There are more and better coaching aids available to coaches now than ever before in the basketball field. The coach must utilize these in order to unite his team. The more teaching devices the coach can rely on, the easier it will make his job of communicating with the players" (1). Newell also concludes that a coach must be aware of new ideas being introduced as mediums of better teaching. The coach must be aware of change and also be prepared for it. He should constantly attempt to improve his scientific knowledge. His methods of teaching may be adequate or even better than adequate, but he should seek improvement of these methods. His techniques may be getting results but he can always learn new techniques of approach" (20).

The whole area of accepting new ideas and techniques was summed up quite well by Benington who stated, "The basketball coach should know the nature and development of his game. He should be eager for increased knowledge, improved scientific theory, advanced methods of coaching, and new techniques of teaching, all should be goals for which he is constantly striving" (20).

Records are constantly being shattered in competitive swimming. In football, basketball, track and field, new records are being established each year. The improvement in these sports can be explained partially by
the use of many new and improved coaching and training techniques. Coaching is not the only area in which new and improved techniques are being used successfully. For many years the field of education has experimented with a large number of new ideas and techniques. One of these now being used in the classroom is that of describing teaching behavior by the use of descriptive analytical systems. It is felt by describing what is done and said in the classroom, there is great potential for improving teaching techniques \(18\). It has been shown that the coach is a teacher. Descriptive systems are being used successfully by the classroom teacher, and it seems they could also be of value to the coach.

Attempts to describe classroom behavior began as early as 1914 when Horn \(10\) devised a system of symbols by which a visitor could ascertain the distribution of participation by pupils in the lesson. In 1928, Puckett \(10\) elaborated on Horn's system by refining the identifying symbols, and made recording procedures much easier. The first study of any magnitude designed to identify the behavior of effective and ineffective teachers, was reported by Barr in 1929 \(10\). This study included data on verbal and non-verbal behavior. In 1956, Marsh \(10\) developed a rating system, to be used by observers in the U.S.A.F. schools, to rate instructors. The three major categories in this system were Instructor Verbal Behavior, Instructor Non-Verbal Behavior, and Student Behavior. It was felt that repetition and cross-validation with public school teachers would be needed before this system's real value could be assessed.

General classroom climate was another early area of classroom behavior that received much attention. Dorothy Thomas was one of the first to work in this field. She focused on interactions between
between individuals rather than actions involving material objects or the self (10). Her work was within four general categories—(a) plotting the child's actual movement on a floorplan, (b) recording every physical contact made by the child, (c) recording the child's vocalizations, and (d) the formations of social groups. These systems all dealt with general behaviors in the classroom. Bookhout (3) was one of the first to use a system of this type in the physical education classroom. She used a modified version of the OSCAR (Observational Schedule and Record) system which was devised to observe as well as record classroom behavior. She found six common patterns of teaching behavior, two of which are climate related. Of these two patterns, Integrative Behavior was significantly related to supportive climate and Restraining Direction was significantly related to a defensive climate. This system might be of use to observers attempting to describe the climate of the coach's "classroom" as well.

Fishman has developed a descriptive system designed to look at classroom climate through augmented feedback (7). This system is arranged in six major categories with twenty sub-categories based on various forms of feedback, direction of feedback, time of feedback, intent of feedback, and specific referent of feedback.

Another specific aspect of classroom behavior studied was that of content analysis. Bloom has led pioneer efforts in this field by devising a taxonomy by which educational objectives can be defined and categorized (10). The taxonomy is divided into three separate sections: namely the cognitive domain which deals with knowledge and the thinking process; the affective domain, which deals with subjective feelings and emotions; and the psycho-motor domain which deals with the learning and performance of motor skills. Bloom's taxonomy has received much attention and is
being used by teachers across the country.

One area of classroom behavior that has not received as much attention or research as other areas is that of non-verbal behavior. This is defined by Galloway as "conveying information without words (24). Facial expressions, postures, gestures, motor activities, dress and other signs are recognized as the usual kinds of non-verbal language. Galloway (24) has written several articles on non-verbal communication, and described it as a new field in which much research is needed due to its importance in the classroom, but he has not yet devised an efficient method of recording it. Fast, the author of Body Language, believes the only way to truly record non-verbal behavior is to film the desired interaction, then rerun the film at a slower speed so as to pick up actions that happen too fast to be seen at normal speed (6).

The one behavior that has received more attention than any other is that of verbal behavior. Flanders, one of the first to work with verbal behavior, found that someone is talking sixty percent of the time in an elementary or secondary school classroom, and that if someone is talking, the chances are it is the teacher seventy percent of the time (9). Nygaard found similar results in his study of verbal behavior in physical education classes (21). Holt, while examining the way children learn, stated that "the teacher does most of the talking and now and then asks the children questions to make sure they have been paying attention and understand" (13). The importance of communication between a teacher and his students and a coach and his players is universally accepted. The type of communication most often used by teachers and coaches is that of verbal communication. Bellock, Kliebard, Hymen, and Smith have noted that few activities could be carried on in the classroom without the use
of language, and that these activities were carried on between students and teacher by means of verbal interaction (2). It could be assumed that very little could be taught by the coach without the use of some type of communication, and verbal communication is the form most often used. Verbal behavior is only one aspect of total coaching behavior, but by isolating and observing verbal behavior, there is potential for self-improvement on the part of coaches. The influence a coach has on his players cannot be overstated. What else has as much import to these players as what the coach says to them? The importance of verbal behavior to coaching was emphasized by Tutko and Richards who said, "the coach's ability to communicate effectively with the athlete is a key factor in the success of his players" (28). Verbal communication is used a great deal and hence should be in the eyes of Tutko and Richards. Prato stated that "Lack of communication between team and coach can be fatal. The successful relationship involves give and take based upon sound reasoning and judgment" (23).

As with the other forms of behavior, verbal behavior can also be measured quite reliably in the classroom. Most of the systems used to describe verbal behavior are variations of the Flanders' System of Interaction Analysis (Table 1). The Flanders' System divides all verbal behavior into two major categories, namely Teacher Talk, and Pupil Talk. Teacher Talk is further subdivided into Indirect Influence and Direct Influence, and these two divisions are again divided. Indirect Influence is reduced to four individual categories and Direct Influence is divided into three individual categories. The second major division, Pupil Talk, is reduced to two minor categories. There is a third major category which is labeled Silence or Confusion. This is used when there is a pause or period of confusion or when verbal behavior cannot be discerned (9).
TABLE 1

FLANDERS' INTERACTION ANALYSIS CATEGORIES (FIAC)

<table>
<thead>
<tr>
<th>Category</th>
<th>Description</th>
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<tr>
<td><strong>Indirect</strong></td>
<td></td>
</tr>
<tr>
<td>1.</td>
<td>Accepts feeling. Accepts and clarifies an attitude or the feeling tone of a pupil in a non-threatening manner. Feelings may be positive or negative. Predicting and recalling feelings are included.</td>
</tr>
<tr>
<td>2.</td>
<td>Praises or encourages. Praises or encourages pupil action or behavior. Jokes that release tension, but not at the expense of another individual; nodding head, or saying &quot;um hum?&quot; or &quot;go on&quot; are included.</td>
</tr>
<tr>
<td>3.</td>
<td>Accepts or uses ideas of pupils. Clarifying, building, or developing ideas suggested by a pupil. Teacher extensions of pupil ideas are included but as the teacher brings more of his own ideas into play, shift to category five.</td>
</tr>
<tr>
<td><strong>Direct</strong></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>Asks questions. Asking a question about content or procedure, based on teacher ideas, with the intent that a pupil will answer.</td>
</tr>
<tr>
<td>5.</td>
<td>Lecturing. Giving facts or opinions about content or procedures; expressing his own ideas, giving his own explanation, or citing an authority other than a pupil.</td>
</tr>
<tr>
<td>6.</td>
<td>Giving directions. Directions, commands, or orders to which a pupil is expected to comply.</td>
</tr>
<tr>
<td><strong>Pupil Talk Response</strong></td>
<td></td>
</tr>
<tr>
<td>7.</td>
<td>Criticizing or justifying authority. Statements intended to change pupil behavior from non-acceptable to acceptable pattern; bawling someone out; stating why the teacher is doing what he is doing; extreme self-reference.</td>
</tr>
<tr>
<td><strong>Pupil Talk Initiation</strong></td>
<td></td>
</tr>
<tr>
<td>8.</td>
<td>Pupil-talk—response. Talk by pupils in response to teacher. Teacher initiates the contact or solicits pupil statement or structures the situation. Freedom to express own ideas is limited.</td>
</tr>
<tr>
<td>9.</td>
<td>Pupil-talk—initiation. Talk by pupils which they initiate. Expressing a new topic; freedom to develop opinions; freedom to develop opinions and a line of thought, like asking thoughtful questions; doing beyond the existing structure.</td>
</tr>
<tr>
<td><strong>Silence or Confusion</strong></td>
<td></td>
</tr>
<tr>
<td>10.</td>
<td>Silence or confusion. Pauses, short periods of silence and periods of confusion in which communication cannot be understood by the observer.</td>
</tr>
</tbody>
</table>

There is no scale implied by these numbers. Each number is classificatory; it designates a particular kind of communication event. To write these numbers down during observation is to enumerate, not to judge a position on a scale.

Source: Flanders, Ned A. *Analyzing Teaching Behavior.*
Nygaard used the Flanders' System to analyze verbal interaction in high school and college physical education classes (21) and found that physical education teachers were extremely direct in their verbal behavior. Kiemele also used this system in comparing perceived and actual verbal interaction of physical education teachers in elementary school physical education classes (15). She found that the total teacher sample could not predict verbal interaction between themselves and their students. She recommended that more work on predicting verbal interaction is needed to show its true value to teachers and possibly coaches.

Dougherty, in his study of teaching styles, used an adaption of the Flanders' System (5). He added meaningful Non-Verbal Activity as an eleventh category and he subdivided categories 1-7 whenever the teacher was talking to an individual rather than to the group. He was attempting to use this modified interaction system differentiate between Task, Command, and Individual Program styles of teaching as described by Mosston (19). He could pick the common style from the task and individual program styles, but could not pick the task style from the individual program style.

Two other systems are very closely related to the Flanders' System, but were specifically designed for physical education classes. Timer developed a system which is in many ways similar to the Flanders' System. It has 11 categories which look at both observable verbal and non-verbal teacher-student interaction. Love's system is also quite similar to Timer's, but attempted to further specify the most frequent non-verbal behaviors in interaction in physical education (9). The Flanders' System labels category five as lecture. This was appropriate since the system was designed for the classroom teacher. The Timer and Love systems divide this category into Demonstration and Explanation which is more fitting for
physical education classes. It should be pointed out that these changes were minimal and verbal interaction was still the primary concern of each one.

There were three reasons why the Flanders' System of Interaction Analysis was chosen for this study. First, the researcher was most familiar with this system. Second, of all the systems dealing with the analysis of verbal behavior, the Flanders' System had been developed to the greatest extent, through the use of several ratios, percentages, and interaction patterns, devised by Flanders. Third, due to the closeness of the computer center in Helena, and the fact that a computer program had already been devised for the initial analysis of data, the Flanders' System was the most practical to use.

Statement of the Problem

The purpose of this study was to examine the verbal behavior of selected basketball coaches during half-time sessions. It attempted to show trends and patterns of verbal behavior used by the social groups of coaches and players by the application of interaction analysis. The study was an initial attempt to examine the coach-player relationship with a descriptive-analytical instrument.

Significance of the Problem

It was shown earlier in the review of the topic that the coach is first and foremost a teacher. As a teacher it is one of his responsibilities to strive to increase the amount of learning which occurs in his classroom. By looking at verbal behavior there is potential for self-improvement on the part of coaches. This study was an initial attempt to use a descriptive analytical system on basketball coaches. Its signifi-
cance comes from the fact that it attempted to gain valuable insight into, and understanding of, a particular social group, namely a coach and his players. Its immediate focus was not the self-improvement of the coaches involved, but rather the examination in detail of one specific behavior of a coach in each of the half-time sessions and the changes that occur from session to session as the season progresses. As such, it provides additional insight into athletic teams as social groups.

In summary, there have been several studies conducted in which Interaction Analysis has been used to describe teachers' verbal behavior. The subjects of these studies have been teachers in the classroom or the physical education class. This was the first attempt to use a descriptive analytical system on persons in the coaching field. One advantage of descriptive analytical instruments is "that there is no inherent judgment in the strument. The data merely shows what happened, now whether it is 'good or bad'" (9). This holds true for coaches also. It will not say a coach is "good" or "bad" but rather describe "what" he did. An instrument of this nature could be useful and should not be limited to the field of education. For this reason the analysis of coaches' verbal behavior was chosen. The data was collected at half-time sessions from three games of each coach, selected at the beginning, middle, and near the end of the season. The half-time sessions to be recorded were selected and therefore not randomly selected.

Hypotheses:

1. The coach's verbal behavior will not change as the win-loss record changes.

2. The coach's verbal behavior will not change with variant half-time scores.
3. The coaches, as a group will exhibit the primary interaction pattern used by physical education teachers, as found in other studies.

4. The coaches, as a group, will be more direct than physical education teachers from other studies.

5. The coaches, as a group, will be more direct, with the content cross held constant, than physical education teachers from other studies.

Delimitations and Limitations

This study was delimited to seven basketball coaches in the Missoula, Montana, area. Of these seven coaches, three were varsity, three were junior varsity and one was a freshman coach.

It was possible that verbal interaction patterns could be affected by the presence of an observer and tape recorder. This could even be amplified in the locker room situation. According to Samph, teachers tended to be more responsive toward pupils with an observer present in the classroom, (with a higher incidence of categories three, accepting or using students' ideas, and four, asking questions) (25). Because of the lack of random sampling, probability statistics were inappropriate, hence no statistical significance was given to the hypotheses, and the acceptance or rejection of these hypotheses is open to question.

Definition of Terms

Actual Verbal Interaction - the verbal communication which took place during the half-time session as categorized by the Flanders' Interaction Analysis System.

Content Cross Ratio - (CCR) isolates those teacher statements which are least likely to be involved with certain process problems which every teacher must solve. An exceptionally high CCR is an indication that the
The main focus of the class discussion was on subject matter, that the teacher took a very active role in the discussion, and that attention to motivation and discipline problems was at a minimum. A mythical national average for the CCR would be fairly close to 55%. The CCR is found by summing the tallies in rows and columns 8 and 9, subtracting the number of tallies in cells 4-4, 4-5, 5-5, 5-4 and dividing by the total tallies.

**Flanders' System of Interaction Analysis** - a ten category system set up to objectively record spontaneous verbal interaction within the classroom, including organization of the data and analysis of results in order to study patterns of verbal interaction.

**I/D Ratio** - the sum of categories 1-4 divided by the sum of categories 5-8. It is an indication of whether the teacher is a direct or indirect influence. A teacher who exhibits a direct influence would score a .99 and below, and a teacher who exhibits an indirect influence would score 1.00 and above.

**i/d Ratio** - the sum of categories 1-3 divided by categories 6-7. The i/d ratio gives an indication of how direct or indirect the coach was in his approach to motivation and discipline problems.

**Instantaneous Teacher Response Ratio** - (TRR89) the tendency of the teacher to praise or integrate pupil ideas and feelings into the class discussion, at the moment the pupils stop talking. The TRR89 can be calculated by adding the cell frequencies in rows 8 and 9; columns 1, 2, and 3, multiplying this sum by 100, and dividing the product by the total tallies in the cells of rows 8 and 9, columns 1, 2, 3, 6, 7. A normative expectation for the TRR89 is 60%.

**Interaction Pattern** - the primary pattern as indicated by the Flanders' System of Interaction Analysis, showing the sequence of verbal events used
by a teacher in a classroom.

Matrix - a 10 row by 10 column table used as a method of recording the sequence of events which occurred in the classroom.

Pupil Initiation Ratio - (PIR) indicates what proportion of pupil talk was judged by the observer to be an act of initiation. The PIR can be calculated by multiplying the frequency in category 9 by 100 and dividing by the sum of all pupil talk. The average PIR of many kinds of classes would be close to 34%.

Significant Cell - any cell in the matrix which receives approximately one tally every two minutes.

Steady State Cell - the cells which lie along the diagonal of the matrix. Tallies occur in these cells only when behavior remains in a single category (1-1, 2-2, 3-3, ...) for longer than three seconds.

Steady State Ratio - (SSR) reflects the tendency of the teacher and pupil talk to remain in the same category for periods longer than three seconds. The higher this ratio, the less rapid is the interchange between the teacher and the pupils on the average. The SSR can be determined by calculating the percent of all tallies that lie within the 10 steady state cells.

Student Talk - found by dividing the total tallies in columns 8 and 9 by the total tallies.

Teacher Question Ratio - (TQR) an index which represents the tendency of a teacher to use questions when guiding the more content oriented part of the class discussion. The TQR is the percent of all categories 4 and 5 statements which are classified in category 4. It is calculated by multiplying the category 4 frequency by 100 and dividing by the sum of categories 4 and 5. The average TQR for a number of teachers is 26%.
Teacher Response Ratio - (TRR) an index which corresponds to the teacher's tendency to react to the ideas and feelings of the pupils. The TRR is found by adding category frequencies $1 + 2 + 3 + 6 + 7$ multiplying by 100 and dividing by the sum of categories $1 + 2 + 3 + 6 + 7$. The overall average is about 42%.

Teacher Talk - found by dividing the total tallies in columns 1 through 7 by the total tallies.

Variant Half-time Scores - defined as the teams differing half-time scores over the three taping sessions. An example would be a coach who was ahead in session one, behind in session two and ahead again in session three. Another example would be the coach being ahead in session one or two and being behind in session three.
CHAPTER II
METHODS AND PROCEDURES

This chapter will discuss the selection of subjects, (basketball coaches), recording procedures, initial analysis, further analysis, and hypothesis.

Selection of Subjects

The first step in the selection of subjects was to compile a list of all coaches in the Missoula, Montana, area.

The next step involved contacting each coach, explaining the study and soliciting his cooperation. The coach was told the study would look at his verbal behavior during three of his half-time sessions: one at the start, one in the middle and one at the end of the season. The necessity for the researcher to be in the locker room during the half-time session in order to record this verbal interaction was explained to each coach and his participation solicited. If the coach refused to participate, an explanation of his reasons for refusal was requested. The reason for refusal most often given was that the coach did not want anyone or anything in the locker room which might distract from his instructions. The coach was then thanked for his cooperation.

If the coach agreed to participate, he and the researcher then went over the upcoming schedule. These meetings occurred in November of 1972. From the schedules, three taping sessions were agreed upon. These would be home games taken at the start, the middle, and the end of the season.
In November, nine coaches agreed to participate in the study. In December, before the first games were to be taped, one coach decided to withdraw from the study due to personal problems with his team. This reduced the number of participating coaches to eight. In January, after all the second session tapes were completed, several were purloined. The missing tapes included the second tape of "Coach B", the second tape of "Coach D", and the first tape of "Coach H". The two tapes for Coaches "B" and "D" were rescheduled, but the first tape for "Coach H" could not be rescheduled and therefore was dropped from the study. This left the final number of coaches at seven.

A list showing the dates of each recording session follows:


There were three reasons why the Flanders' System of Interaction Analysis was chosen for this study. First, the researcher was most familiar with this system. Second, of all the systems dealing with the analysis of verbal behavior, the Flanders' System had been developed to the greatest extent, through the use of several ratios, percentages, and interaction patterns. Third, due to the closeness of the computer center in Helena, and the fact that a computer program had already been devised for the initial analysis of data, the Flanders' System was the most practical to use.
Recording Procedures

All half-time sessions were recorded with a "Craig" tape recorder, model #2602. Consumer Reports (4) rates it as a particularly good model for recording non-musical subjects. Since the recorder had an optional battery operated unit, an electrical outlet was not necessary for recording procedures.

After the recording dates were agreed upon, several schedule conflicts (games on the same day and time) arose, necessitating the hiring of an assistant to help in some of the recording sessions. He used an identical recorder and followed the same procedures.

The day before a taping session was to occur, the coach involved was contacted and visited. During this meeting such information as how and where to enter the gymnasium, when to go to the locker room and where to sit in the locker room was discussed. Five of the seven coaches moved their half-time sessions to a classroom near the gymnasium in order to better facilitate the recording process. The other coaches used the dressing room.

On the day of the game, the researcher would arrive during the pre-game warm-up and check with the coach for any last-minute changes in the above described procedures. In addition, each audio-tape for the upcoming half-time session was labeled. Such information as date, time, opponent, place, and tape number was recorded at this time. One minute before half-time, the researcher would go to the locker room or classroom and test the tape recorder to make sure it was working properly.

The half-time sessions were approximately 10 minutes long. The recorder was not turned on until the coach and players arrived in the locker room and the coach started talking to the team. The researcher was placed in a position where the players and the coach could be recorded.
equally well. The recorder was turned off when the team and coach left the locker room. When everyone had left, the tape was re-run to make sure it was audible. Before leaving the gymnasium, the half-time score and final score were recorded.

Initial Analysis

The final half-time session taped for this study was on March 3, 1973. On Monday, March 19, 1973, all 21 tapes were mailed to Mr. Elmer Armstrong in Helena, Montana. Mr. Armstrong's reliability with the "Flanders' System of Interaction Analysis" was above .80, according to a personal interview held with Mr. Armstrong. The initial analysis of the tapes consisted of listening to the tapes and recording every three seconds, or every time there was a category change, the number of the interaction category used. The initial analysis was done by Mr. Armstrong for two reasons. One, the researcher's reliability was not 180 or above, which was required for a trained observer, and two, time did not allow the researcher to improve reliability to this standard and complete the initial analysis on all 21 tapes. Mr. Armstrong had set up a computer program for further compilation of the data. His program was used in this research. The first part of the initial analysis consisted of transferring the raw data from the initial tally sheets, described above, to a 10 x 10 interaction analysis matrices. This procedure was described by Dougherty:

At the conclusion of the observation period, the tallies are recorded in a matrix. Before making any entries, the observer must place a 10 before the first tally and after the last. The numbers are then entered into the matrix in pairs so that
each number, with the exception of the first
and last 10 is used twice. If the extra 10's
were not added, two tallies would be lost. An
example of the coding procedure follows:

Suppose an observer had just recorded the
following series of tallies: 8 4 8 3 5 5 4 8 2.
Place a 10 before and after the group of numbers.

Now enter the numbers in the matrix in pairs (the
second example has brackets to denote the pairs)
10 8 4 8 2 5 5 4 8 2 10. The first pair, 10-8,
would be entered in row 10, column 8. The second
paid would be entered in row 8, column 4, and so
on until each number, with the exception of the
first and last, has been used twice (24).

A total of 29 different matrices were needed for this research.

When the tapes were mailed to Mr. Armstrong, a list of the desired
matrices was forwarded. This list follows:

1. Coach 1A
2. Coach 2A
3. Coach 3A
4. Coach A1, 2, 3, Total
5. Coach 1B
6. Coach 2B
7. Coach 3B
8. Coach B1, 2, 3, Total
9. Coach 1C
10. Coach 2C
11. Coach 3C
12. Coach C1, 2, 3, Total
13. Coach 1D
14. Coach 2D
15. Coach 3D
16. Coach D1, 2, 3, Total
17. Coach 1E
18. Coach 2E
19. Coach 3E
20. Coach E1, 2, 3, Total
21. Coach 1F
22. Coach 2F
23. Coach 3F
24. Coach F1, 2, 3, Total
25. Coach 1G
26. Coach 2G
27. Coach 3G
28. Coach G1, 2, 3, Total
29. One Total Matrix for all
three tapes on all seven coaches
After the data had been punched into the computer program with the above method, the final step of the initial analysis was carried out. This consisted of running the program through the computer. Three printout sheets of each tape were run because of a printing problem with the computer. The problem had no affect on this research since all three printout sheets were legible. As well as converting the raw tallies to the 10 x 10 matrix, the computer program also totaled all columns and rows, figured the percentage of total times for each category and the percentage of incidents for each category.

Further Analysis of Data

The final phase of analysis followed a descriptive case study approach, examining the verbal behavior of seven selected basketball coaches during their half-time sessions. This analysis did not attempt to determine if the coaches were good or bad, but rather described the coaches' verbal behavior in different half-time situations.

A method of analysis was devised so as to have a consistent system of analyzing hypothesis one and two. This plan involves the percentages found by the Vo-Tech computer, and the ratios devised by Flanders, and was the basis for any conclusions made involving hypothesis one and two. A description of the method of analysis follows.

The first two steps followed that of most matrix analysis procedures, finding the primary interaction pattern and calculating the I/D ratios. The calculation of the primary interaction pattern was placed first for two reasons. One, it showed which combinations of verbal behavior were most commonly used, and two, it could be calculated very quickly. The next step, the calculation of the I/D ratios, showed exactly the direct-
ness or indirectness of the coach's overall presentation. These two steps gave the basic framework for starting this analysis.

Before any significance could be given to the Flanders' interaction analysis ratios, one had to first know exactly what percentage of the time the coach talked, the players talked, and the percent of time spent in silence or confusion. When these percentages were known and taken into consideration, the other ratios gave the observer a more accurate picture of what actually happened during the half-time session. For this reason, the calculation of the percentage of time spent in coach talk, player talk, and silence or confusion made up step three of this analysis.

From close observation and analysis of past physical education studies, it was found that the majority of tallies for each individual matrix occurred in the Content Cross ratio. For this reason, step 4 involved the calculation of the Content Cross ratio (CCR). The Content Cross ratio was found by calculating the number of tallies in the rows and columns of categories 4 and 5, subtracting the total of cells 4-4, 4-5, 5-5, 5-4 and dividing the difference by the total tallies. The CCR isolates those statements which were least likely to be involved with certain process problems which every coach must solve. The problems of reward and punishment, reacting to ideas and feelings of the players, and the giving of assignments and directions are least likely to be classified in categories 4 and 5. An exceptionally high CCR would be an indication that the main focus of the half-time sessions was on subject matter, that the coach took a very active role in the discussion, and that attention to motivation and discipline problems were at a minimum. A predicted average for the CCR would be approximately 55% (8). A score below 55% would show a coach who put more emphasis on motivation or discipline, let
the players interact more often and put less emphasis on subject matter.

The next step, after determining the amount of emphasis placed on content by the coach, would be to determine how the coach guided the content oriented part of the half-time session. By the use of the Teacher Question ratio (TQR), the observer can determine the tendency of the coach to use questions when guiding the more content oriented part of the half-time session. This ratio was calculated by multiplying the Category 4 frequencies by 100 and dividing by the sum of Categories 4 and 5. Flanders predicted the average TQR to be fairly close to 26% (8). A coach scoring over 26 would be using more questions than normal to guide the content oriented part of the half-time sessions. According to Mosston (19) the use of directed questions further enhances the learning process in the classroom (locker room). The use of questions was the basis for his "Guided Discovery" style of teaching, which was only one step from what he considered to be the ultimate goal in teaching, "Individual Program Student Design".

Step six was the calculation and comparison of the Teacher Response ratio (TRR). This ratio was placed here because the manner in which a coach responded to his players' ideas and feelings seemed very important to the success of the team. The TRR was found by adding category frequencies 1 + 2 + 3, multiplying by 100 and dividing by the sum of 1 2 3 6 7. Flanders' predicted average TRR was close to 42% (8). The TRR is an index which corresponds to the coach's tendency to react to the ideas and feelings of players. A coach scoring below 42% would be one who rarely responded to player talk but rather carried on with what he was doing before the player talked. The coach who scored above 42% would react at a higher rate than Flanders' predicted average to the player talk.
Since step six looked at how the coach responded to his players, step seven considered how the players responded to the coach. More specifically, it determined the frequency the players initiated a response rather than simply answering a directed question from the coach. The Pupil Initiation ration (PIR) indicated the proportion of player talk judged by the observer to be an act of pupil initiation. This was any statement by the player which was not solicited by the coach. (More simply, it tells what proportion of the time the player expressed his own ideas without being asked.) The PIR was found by multiplying the frequency in Category 9 by 100 and dividing by the sum of all player talk. The average PIR, predicted by Flanners, was approximately 34% (8). A score above this indicated a situation in which the players initiated most of the talk.

Step eight followed step seven very closely. It was the calculation and comparison of the Instantaenous Teacher Response ration (TRR89). In step seven an indication of how many times the players initiated a response to the coach was calculated. Step eight looked at the tendency of the coach to praise or integrate pupil ideas and player feelings into the half-time discussion at the moment the player stops talking. It appeared that this, too, was a very important part in the half-time session and the communication between the coach and his players. The TRR89 was calculated by adding the cell frequencies in rows 8 and 9; columns 1, 2, 3 multiplying this sum by 100 and dividing the product by the total tallies in the cells or rows 8 and 9, columns 1, 2, 3, 6, 7. A normative expectation, according to Flanders, for the TRR89 was about 60% (8). The coach was scored high in this ratio was one who specifically used a player's ideas after he had made a comment, or praised his player when he finished talking.
The ninth phase of this method of analysis showed the tendency of the coach or player to remain in the same category for longer than three seconds once he started talking. This was done by calculating the Steady State ratio (SSR). This would seem to be important to the coach because it showed the rapidity of the interaction between the player and coach. If the coach scored high in this ratio, the interchange between he and his players was slow, and one person spent long periods of time in the same category. The SSR is found by calculating the percent of all tallies that lay within the 10 steady state cells. Flanders predicted the average SSR to be approximately 50% (8).

The tenth step of this analysis was the calculation of the i/d ratio. This could also be important to the coach as it showed how much emphasis he placed on motivation and discipline during the half-time session. The i/d ratio is found by summing categories 1-2-3 and dividing by the sum of categories 6-7.

The eleventh and final step was the analysis of the 8-9 cell. Tallies in this cell indicated the number of times a player was allowed to extend his ideas after answering a directed question. These ratios are diagrammed on the following tables: (III through VIII).

The eleven steps of this method of analysis were relevant to each coach for both hypothesis one and two.

For hypothesis one, "The coach's verbal behavior will not change as the win-loss record changes", the following steps were applied. Initially the primary interaction pattern for the first matrix for Coach A's first tape (Tape 1A) was compared to the primary interaction pattern of Coach A's second tape (Tape 2A), and any differences between these tapes were noted and described. Next, tape 1A was compared to tape 3A, and if
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CONTENT CROSS AREA OF A TEN-BY-TEN INTERACTION ANALYSIS MATRIX

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### TABLE III

**TEACHER QUESTION AREA AND CELL 8-9 OF A TEN-BY-TEN INTERACTION ANALYSIS MATRIX**

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TABLE IV
TEACHER RESPONSE AREA OF A TEN-BY-TEN
INTERACTION ANALYSIS MATRIX

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The diagram shows shaded areas indicating the tally counts for each category.
### TABLE V
PUPIL INITIATION AREA OF A TEN-BY-TEN INTERACTION ANALYSIS MATRIX

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**TABLE VI**

INSTANTANEOUS TEACHER RESPONSE AREA OF A TEN-BY-TEN INTERACTION ANALYSIS MATRIX

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### TABLE VII
STEADY STATE AREA OF A TEN-BY-TEN INTERACTION ANALYSIS MATRIX

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differences were found, they, too, were noted and described. When all three tapes had been compared a statement was made summarizing the changes in Coach A's primary interaction pattern. This, then, completed step one of Coach A's analysis. Step two through eleven followed the identical procedure of step one. When all eleven steps had been completed a final statement was made, summarizing any change in Coach A's verbal behavior. This completed the analysis of hypothesis one for Coach A. The procedure for analyzing hypothesis one for all coaches followed the same pattern.

After each of the seven coach's summaries had been looked at individually, they were placed in two groups, one labeled Coach X and one Coach Y. Coach X group was made up of Coaches A, B, C, and D, whose win-loss record progressed, that is, his win-loss record steadily improved, and Coach Y group consisted of Coaches E, F and G whose win-loss record regressed, that is, their win-loss record became consistently worse. Upon completion of the eleven-step analysis for these two groups, a statement was made summarizing any changes in the combined coaches' behavior. This completed the analysis of hypothesis one.

The eleven-step method of analysis was used for both hypothesis one and hypothesis two, excepting one difference in the procedure for hypothesis two as follows. Because only three tapes were recorded for each Coach, there was the possibility that any of the coaches would be either behind, ahead, or tied at all three of his half-time sessions, resulting in no difference in the half-time score. There were three such cases in this study. Coaches A and B were ahead for all three half-time sessions and Coach E was behind for all three half-time sessions - so these three coaches were omitted from the analysis of hypothesis two. This left the
number of coaches to be analyzed at four. These four coaches' matrices were all looked at individually. As in hypothesis one, tape 1 was compared to tapes 2 and 3. Then tape 2 was compared to tape 3, for each of the eleven steps of the method of analysis. Upon completion of each step, a statement was made summarizing any changes in that phase of the coach's behavior. A concluding statement was also made at the end of each coach's analysis, describing any change in his verbal behavior whether ahead of behind in his half-time score.

For hypothesis three, the Flanders' System of determining the primary interaction pattern was used to determine the primary pattern of the total coaches' matrices. This pattern has been described by Nygaard in a paper presented to the American Association of Health, Physical Education, and Recreation's National Convention in 1971 (22). It consisted of the combination of categories which most frequently occurred during the half-time session. First, find the steady state cell with the most tallies and write down that category number as the starting point. Second, proceed in the row, horizontally, to the cell outside of the steady state cell having the most tallies. Write down the column number of that cell and proceed to the steady state cell for that category. Keep repeating this process until the cycle is completed, or no more significant cells appear. A significant cell is one outside of the steady state which has 10 tallies if there are 400 total tallies, or an appropriate proportion (ex. 10/400 x x/750 18.75). Table IV was an example of a primary interaction pattern drawn in on the 10 x 10 matrix. It was a 5-10-6-10-5 pattern, meaning the teacher used lecture which was followed by silence or confusion, then directions, in turn followed by more silence or confusion, and finally more lecture.
Hypothesis four also examined the coaches' total matrix. The I/D ratios for the physical education teachers from other physical education studies were compared to the total coaches' I/D ratio. The I/D ratio for elementary physical education teachers was .20 (15) and for male high school physical education teachers was .122 (21). For the total group of coaches, the I/D ratio was found by adding categories 1, 2, 3, and 4 and dividing by the sum of categories 5, 6, and 7. An I/D ratio above 1.00 indicated a coach who exhibited an indirect influence on his players, by using more players' ideas and feelings, encouragement and questions along with less lecture, criticism and directions. The opposite holds true for a coach who scored below 1.00.

Hypothesis five also looked at the total group matrix of the seven coaches. The i/d ratios for the physical education teachers from other studies were examined separately and found in the same manner as the I/D ratios in hypothesis IV. The i/d ratio for the total group of coaches was calculated by adding categories 1, 2, 3 and dividing by categories 6, 7. This ratio was an indication of the emphasis the coach put on motivation and discipline problems. If he scored above 1.00, it meant he was more indirect in his application of motivation than if he scored below 1.00.
TABLE VIII
GROUP MATRIX FOR TWENTY-ONE FEMALE TEACHERS

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CHAPTER III
RESULTS

Analysis of Results

This analysis utilized the case study approach to examine the verbal behavior of basketball coaches; therefore, this chapter will examine and discuss the data collected for that purpose.

Analysis of Data by Hypothesis

For hypothesis one, "the coach's verbal behavior will not change as the win-loss record changes", and hypothesis two, "the coach's verbal behavior will not change with the different half-time scores", the data was analyzed according to the research plan described in Chapter II.

Hypothesis One: The coach's verbal behavior will not change as the win-loss record changes.

Coach A: The win-loss record for Coach A progressed steadily as the season progressed. In session one, the record was 3-0; in session two, it was 10-1; and in session three, it was 15-1.

(1) The Primary Interaction Pattern for matrix lA was a 5-9-3-5. This meant the coach started by lecturing, then received a divergent response, used the players' ideas, then went back to lecturing. This was compared to the primary pattern of tape 2A, 5-7-5 pattern which was lecture followed by a divergent response and followed by more lecture. There was a shift from bringing a player's ideas into the discussion in tape lA and justifying authority in tape 2A. By comparing tape 1A to tape
3A, a 5-9-3-5 pattern in 1A was found and in tape 3A, a 5-6-5 pattern emerged lecture followed by directions succeeded by lecture. This showed that Coach A shifted from use of student ideas in lecture in 1A to no player talk in the primary pattern in 3A. When tape 2A was compared to tape 3A it showed a 5-7-5 pattern compared to the 5-6-5 pattern. This was a switch from criticizing or justifying authority, to giving directions between periods of lecture. Neither of these patterns showed any player talk. As the season progressed, Coach A shifted from a 5-9-3-5 pattern involving student talk to 5-7-5, and 5-6-5 patterns involving no player talk at all.

(2) For tape 1A an I/D ratio of .153 was calculated. This showed an extremely direct approach by the coach. In tape 2A, an even more direct ratio of .013 emerged. Tape 3A showed an I/D ratio of .143, also a direct ratio. These results indicated a large difference between tapes one and two, .140, and between tapes two and three, .130.

(3) The percentage of coach talk for tape 1A was 91.2%, player talk used 7.7% of the time, and silence or confusion accounted for 1.1% of the time. In tape 2A, coach talk consumed 97.5% of the time; player talk used 0.0% of the time and silence and confusion accounted for 2.5% of the time. This showed a difference of 6.3% in coach talk, 7.7% in player talk, and 1.4% in silence or confusion. These percentages showed a very large amount of coach talk and a very small amount of player talk in the half-time sessions.

Tape 3A showed 90.9% coach talk, 6.8% player talk, and 2.3% silence or confusion. This was a difference from tape 1A of .3% coach talk, .9% player talk, and 1.2% more silence or confusion. These differences were slight, and indicated very little difference of the pattern of verbal
behavior.

Upon comparison of tapes 2A and 3A, tape 2A showed 6.6% more coach talk, 6.8% less player talk, and .6% more silence or confusion. Again, these differences indicated a large drop in player talk and a substantial increase in coach talk in the second session.

One interesting point was that the player talk percentage for tape 2A was the lowest of all 21 individual tapes. As a matter of fact, it was non-existent.

(4) Analysis of the Content Cross ratio (CCR) in tape 1A showed 74.7% of the tallies to be in this area and in tape 2A, 83.5% were found there. This was a difference of 8.8%. In tape 3A, 84.1% of the tallies were in the Content Cross. This was a difference of 9.4% from tape 1A, and .6% from tape 2A.

It was noted here that the CCR increased as each session progressed. Flanders predicted the average CCR at approximately 55% (8), and all three sessions were above this figure by at least 19.7%. These results showed that Coach A spent an above-average amount of the half-time session dealing with subject matter, and less time on motivation and discipline problems.

(5) In tape 1A the Teacher Question ratio (TQR) was 5.00 and in tape 2A it was 1.72%. The difference between these two was 3.28%. The average TQR predicted by Flanders was 26% (8). Both tape 1A and 2A fell far below this ratio which meant that the coach used very few questions when guiding the content oriented part of the half-time sessions. The TQR for tape 3A was 8.20%. This figure was also far below the figure predicted by Flanders (8). The difference between tape 1A and 3A was
3.20%. When tape 2A and 3A were compared, there was a difference of 6.48%.
In conclusion, all three TQR's stayed far below the 26% which Flanders predicted as average for all kinds of classes (8). This meant Coach A used very few questions while he guided the content oriented part of the half-time sessions.

(6) In tape 1A the Teacher Response ratio (TRR) was 34.78%. This was 7.22% below the average of 42% predicted by Flanders (8). For tape 2A the TRR was 0. This was caused by the lack of tallies in rows 8 and 9 and columns 1, 2 and 3. When tapes 1A and 2A were compared, tape 1A was 34.78% higher, which showed a much greater response to players' ideas and feelings.

When tapes 1A and 3A were compared, TRR's of 34.78% and 31.25% were found, respectively. There was a difference of 3.53% between the two, but were still below the average predicted by Flanders. This meant that Coach A's responses to the ideas and feelings of his players were below Flanders' predicted average.

(7) The Pupil Initiation ratio (PIR) for tape 1A was 85.71%, 0 for tape 2A because there were no tallies in columns 8 and 9, and was 50% for tape 3A. When tape 1A and 3A were compared, a difference of 35.71% was found. Flanders predicted the average PIR at 34% (8), and both tape 1A and 3A were far above that prediction. This was very significant because it showed that when players talked, more often than average, they initiated the talk. This also meant that players were allowed to express their own ideas quite freely during the half-time sessions. In conclusion, there was a substantial change in Coach A's PIR in the second taping session.
(8) When the Instantaneous Teacher Response (TRR89) was calculated for tape 1A, the result was 50.00% and this was 10% below the predicted average of 60% set by Flanders (8). The TRR89 for tape 2A was again 0 because there were no tallies in rows 8 and 9 nor in columns 1, 2 and 3. The TRR89 for tape 3A was 44%, again below Flanders' average by 16% (8). When tapes 1A and 3A were compared, a difference of 6% in favor of 1A was found.

The TRR89 stayed below Flanders' predicted average of 60% (8) in all three tapes. This indicated that the instant the player stopped talking, the coach used less praise, player ideas, or feelings than classroom teachers.

(9) The Steady State ratio (SSR) for tape 1A was 71.4%, and 78.5% in 2A, a difference of 7.1%. The SSR for tape 3A was 62.5% and when tapes 2A and 3A were compared, 2A was found to be 16% higher. All three tapes for Coach A were above the average of 50% predicted by Flanders for all kinds of classes (8) and Coach A remained in the individual categories longer than three seconds for an above-average amount of time. This also meant that the interchange between the coach and players was slower than average.

(10) When the i/d ratios of tape 1A and 3A were compared, tape 1A at .533 was .176 higher than tape 3A, which was .357. Tape 2A was 0, due again to the lack of tallies in columns 1, 2 and 3. Coach A's i/d ratio changed between tapes 1A and 3A. This indicated that Coach A was exceedingly direct in his approach to motivation and control in the half-time session, and was the most direct at the end of the season.

(11) For tape 1A, 2A, and 3A, no tallies were found in the 8-9 cell.
This meant that players were not allowed to expand their own ideas after answering a coach directed question during the three taping sessions.

In summary, Coach A's win-loss record progressed as the season went along. It was observed that there were also several changes in Coach A's verbal behavior during the three taping sessions. These changes were most notable in the primary pattern, which became more direct in the second session, as did the TRR, TQR, PIR, TRR89, SSR, I/D ratio and player talk percentages.

Coach B: The win-loss record for Coach B progressed steadily as the season went along. In session one his record was 2-1; in session 2, it was 9-4; and in session 3, it was 11-5.

(1) The primary pattern for tape 1B was a 5-7-5 pattern, lecture followed by criticism or justification of authority, followed by lecture. When this was compared to tape 2B's 5-9-5 pattern of lecture, followed by a divergent response, succeeded by more lecture, only one difference was noted. This was in the second phase of the pattern. In tape 1B the coach followed lecture with criticism and in tape 2B lecture was followed by a divergent player response. Tape 2B shows some player talk in the primary pattern.

When tape 1B was compared to the primary pattern of tape 3B's 5-10-5, lecture, followed by silence or confusion, succeeded by more lecture, one difference was noted. This was a shift from category 7 in tape 1B to category 10 in 3B during the second phase of the pattern. It should be noted that neither of these patterns included any player involvement.

When tape 2B was compared to tape 3B, there was again only one difference and that was a switch from category 9 in tape 2B to category
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10 in tape 3B. This showed Coach B going from player participation in tape 2B to silence or confusion in tape 3B.

The primary patterns for Coach B showed only minor changes throughout the season. Tape two involved some player talk but the first and third sessions had no player talk in the primary pattern.

(2) The I/D ratio for tape 1B was so direct that it was impossible to calculate because there were no tallies in categories 1, 2, 3, or 4. This meant that Coach B was so direct he used no praise, no acceptance of feelings and no students' ideas or questions in the half-time session.

For tape 2B, an I/D ratio of .060 was found. This was also extremely direct and when compared to the I/D ratio of tape 3B, .090, a difference of only .03 was found.

In summary Coach B was exceedingly direct in all three half-time sessions. Flanders predicted the dividing point for direct-indirect teaching at .99 (8). The highest I/D ratio Coach B attained was a .090 in tape three.

(3) The percentage of coach talk in tape 1B was 94.1%. Player talk accounted for 4.9% and silence or confusion took up 1.0% of the half-time session. In tape 2B, coach talk consumed 91.0% of the time, player talk used 6.4% of the time and silence or confusion accounted for 2.6% of the time. When tape 1B and 2B were compared, tape 1B had 3.1% more coach talk, tape 2B had 1.5% more player talk and 1.6% more silence or confusion.

In tape 3B, the coach talked 92.4% of the time; players talked for 5.1% of the half-time session, and silence or confusion accounted for 2.5% of the time. In a comparison of tapes 1B and 3B, tape 1B had 1.7% more coach talk, and tape 3B had a .2% more player talk, and 1.5% more silence or confusion. These differences were slight and indicated very
little change in Coach B's verbal behavior pattern. When tape 2B and 3B were compared, tape 2B had 1.4% more coach talk and 1.% more silence or confusion. These differences were also slight and indicated very little alteration in Coach B's verbal behavior pattern.

(4) An analysis of the Content Cross ratio (CCR) for tape 1B showed 94.1% of the tallies in that category. For tape 2B the CCR accounted for 85.9% of the tallies. This was a difference of 8.2%, but both were far above Flanders' predicted average of 55% (8). Both these tapes depicted a coach who placed the greatest amount of emphasis on content in the half-time session and less emphasis on motivation and discipline.

When the CCR of tape 1B was compared to that of tape 3B, there was a difference of 10.6%. This was a greater variance but tape 3B also had a higher percentage of tallies in the Content Cross than the Flanders' predicted average of 55% (8).

It should be noted that a change in the CCR did occur, decreasing in each successive taping session.

(5) The Teacher Question ratio (TQR) was not calculated in tape 1B because there were no tallies in category 4. That meant Coach B asked no questions in the first taped half-time session.

A comparison of the TQR of tape 2B's (1.79%) and tape 3B's (7.02%) showed a difference of 5.23%. Flanders predicted the average TQR to be around 26% (8), and all three tapes fell below this average by at least 18.98%.

In summary it was noted that the TQR of Coach B increased slightly during each of the three taping sessions. This showed that he used a few more questions to guide the content oriented part of the half-time
sessions as the season progressed.

(6) For tape 1B the Teacher Response ratio (TRR) was again impossible to calculate. This meant that during session one, Coach B failed to respond to his players' feelings and ideas. The TRR for tape 2B was 20% and this was 22% lower than the average of 42% set by Flanders (8). The TRR for tape 3B was 12.50% and this was 29.50% lower than the Flanders' predicted average. When tape 2B and 3B were compared, a difference of 7.50% was found.

It is important to note that the TRR's for Coach B varied slightly but all three tapes were well below Flanders' average. This indicated that Coach B very rarely responded to his players' feelings and ideas.

(7) Upon analyzing the Pupil Initiation ratio (PIR) for tape 1B, a 100% figure emerged. This signified that every time a player responded to the coach it was under the player's own initiation. In tape 2B, the PIR was 80.00%, and when tapes 1B and 2B were compared, a difference of 20.00% was found.

The PIR for tape 3B was 25.00%. When tape 1B and 3B were compared, a difference of 75.00% was found. This showed that in tape 1B the players initiated every response, but in tape 3B only one of every four responses was initiated by the players. When tapes 2B and 3B were compared, a difference of 55.00% was found and this, too, was a large change.

In conclusion, the PIR of Coach B regressed from 100% to 25.00% as the season progressed. Tapes 1B and 2B were at least 46.00% above Flanders' predicted average PIR of 34.00% (8), and tape 3B was 9.00% below this average. This meant Coach B's players initiated fewer and fewer responses during the three taping sessions.
When the Instantaneous Teacher Response (TRR89) was calculated for tape 1B, the result was 31.25% and was 40.00% for tape 2B, a difference of 8.75%. The TRR89 for tape 3B was 30.00%. When tapes 1B and 3B were compared, 1B was 1.25% higher and when tapes 2B and 3B were compared, 2B was 10.00% higher.

All three TRR89's fell below the predicted average TRR89 of 60.00% set by Flanders (8) by at least 20.00%. This meant that Coach B rarely used praise, player ideas or feelings the instant the player stopped talking. The difference between the three tapes was slight, and all three were lower than Flanders' predicted average.

The Steady State ratio (SSR) for tape 1B was 77.5%, and of tape 2B was 67.9%, a difference of 9.6%. The SSR for tape 3A was 70.9%. When tapes 1B and 3B were compared, 1B was 6.6% higher. When tapes 2B and 3B were compared, 3B was 3.0T higher than 1B.

Flanders predicted the average SSR to be approximately 50% (8). All three of Coach B's tapes were above this average, which meant that he remained in specific categories for longer than three seconds, and the interchange between the coach and player was not very rapid.

In conclusion, Coach B's SSR remained constant and high for the three taping sessions.

Upon analyzing the i/d ratios for Coach B, the i/d ratio for tape 1B was 0, which was as direct as it was possible to score. This was because there were no tallies in categories 1, 2 or 3.

The i/d ratio for tape 2B was .250 and for tape 3B it was .143. There was a difference of .107 when tapes 2B and 3B were compared.

These results indicated that Coach B was very direct in his approach to motivation and discipline problems. The changes in the i/d ratio were
greatest in the second session.

(11) In the three taping sessions for Coach B, no tallies were recorded in the 8-9 cell. This meant that as Coach B's win-loss record and season progressed, there were no instances in which players were allowed to extend their responses to the coach's questions.

In all categories except the PIR, TRR, and TQR, the changes in Coach B's verbal behavior were very minimal. It was also noted that the CRR for tape 1B was the highest for all the 21 individual tapes, and the PIR for tape 3B was the lowest of all the 21 individual tapes.

**Coach C:** The win-loss record for Coach C progressed steadily as the season progressed. For session one, the record was 4-0. For session two, it was 9-2 and for session three it was 15-3.

(1) The primary interaction pattern for Coach C remained the same for all three sessions. He began with lecture, switched to criticizing or justifying authority, then returned to lecture, a 5-7-5 pattern.

(2) In tape 1C, the I/D ratio was .067. The I/D ratio for tape 2C was .053 which was .014 lower or more direct. The I/D ratio for tape 3C is .042 lower than tape 1C, and .028 lower than tape 2C.

These results showed two things, (a) Coach C was extremely direct in his half-time sessions, and (b) he became progressively more direct as the season went along.

(3) The percentage of coach talk in tape 1C was 96.0%; player talk accounted for 3.0% and 1.0% of the time was spent in silence or confusion. In tape 2C the coach talked for 97.6% of the time; the players talked 1.2% of the time, and silence or confusion accounted for 1.2% of the time. When tapes 1C and 2C were compared, tape 1C had 1.6% more coach talk,
1.80% more player talk though tape 2C had a .2% more silence or confusion.

Coach talk for tape 3C took up 96.4% of the time; player talk used 1.2% and the remaining 2.4% was spent in silence or confusion. When tapes 1C and 3C were compared, tape 3C had .4% more coach talk, 1.40% more silence or confusion while tape 1C had 1.80% more player talk. When tapes 2C and 3C were compared, tape 2C had 1.2% more silence or confusion though each had 1.2%, or the same amount of player talk.

The difference between the three coach talk tallies was only 1.6%, and the lowest amount was 96.0%. This was a high percentage of coach talk. In the first tape, player talk accounted for 3.0% of the time, then dropped off to 1.2% in the next two sessions. It was of special interest here to find that the coach talk percentage of tape 2C was the highest of the 21 individual tapes.

(4) Analysis of the Content Cross ratio (CCR) for tape 1C showed 82.3% of the tallies in this area. The CCR for tape 2C was 78.00% or 4.3% lower than 1C. The CCR for tape 3C was 76.6%. When tapes 1C and 3C were compared, 1C was 9.7% higher, and when tapes 2C and 3C were compared, 2C was 5.4% higher.

Flanders predicted the average CCR to be 55.0% (8). All three CCR's for Coach C were above this average by at least 17.00%. This meant that more emphasis was placed on subject matter than on motivation and discipline during the half-time sessions.

It should be pointed out that though he failed to reach Flanders' predicted average, the CCR of Coach C got closer to it in each of the three sessions.

(5) For tape 1C the Teacher Question ratio (TQR) was 2.86%. The TQR for tape 2C was 1.82%, or 1.04% lower than 1C.
Flanders predicted the average TQR to be around 26% (8). The TQR for tape 3C was also 1.82%, and again 1.04% lower than 1C.

These results showed that during the first taping session Coach C used questions only 2.86% of the time to guide the more content oriented part of the half-time session, and during the next two sessions he devoted only 1.82% of the time to questions.

These percentages fell well below the predicted average of most classes found by Flanders (8).

(6) In a comparison of tapes 1C, 2C and 3C, the Teacher Response ratio (TRR) was 14.81% in tape 1C, which was 2.81% higher than tape 2C's 12.0%, and 10.96% higher than tape 3C's 3.85%. Tape 2C was 8.15% higher than tape 3C. Since Flanders' predicted average TRR was approximately 42.00% (8), all three tapes fell far below this and all their TRR percentages became smaller as the season progressed. It was evident that as the season advanced, Coach C's responses to the players' ideas and feelings were fewer and dropped farther and farther below Flanders' predicted average (8).

(7) The Pupil Initiation ratio (PIR) in a comparison of the three "C" tapes to Flanders' predicted average (8) showed average and above responses. Tape 1C was 33.33%, tape 2C 100% and tape 3C also 100%, which was a difference of 66.67% between tape 1C and the other two.

As the season advanced, so did the players' initiated responses from 33.53% to 100%. According to Flanders (8), tape 1C had approximately the predicted average number of player initiated responses, 33.33%, and tapes 2C and 3C were 66% above this average.

(8) According to Flanders' predictions, the Instantaneous Teacher Response ratio (TRR89) was approximately 60% (8). When it was calculated
for these three tapes, 1C was 23.33%, and below Flanders' predicted average by 36.67%. 2C was 15.38%, which was 44.62% under Flanders' and 3C was 7.41% and lower than Flanders' predicted average by 52.59%. When tape 1C and 2C were compared, tape 1C was 7.95% higher than tape 2C.

The TRR89 for tape 3C was 7.41%. When tapes 1C and 3C were compared, tape 1C was 15.92% higher. When tapes 2C and 3C were compared, tape 2C was higher by 7.97%.

Flanders predicted the average TRR89 to be approximately 60.00% (8). Tape 1C was 36.67% below that figure; tape 2C was 44.62% below it and tape 3C was 52.59% below the predicted 60.00%.

It was apparent that as the season progressed, Coach C used praise and players' ideas or feelings, fewer and fewer times the instant the player stopped talking.

(9) The Steady State ratio (SSR) for tape 1C was 66.3%, 74.4% for tape 2C which was 8.1% higher than tape 1C. The average Steady State ratio (SSR) predicted by Flanders was 50% (8). Both tape 1C and 2C were at least 16.3% above Flanders' predicted figure.

The SSR for tape 3C was 80.9% which was 14.6% higher than 1C, 6.5% higher than 2C, and 30.9% above Flanders predicted 50% average (8).

It was noted that the SSR for Coach C progressed steadily as the season went along. This indicated that as the season progressed, Coach C spent more and more time in each individual category, and the interchange between the coach and his players became less rapid.

(10) The i/d ratio for tape 1C was .174, and .136 for tape 2C which was .038 lower than tape 1C. The i/d ratio for tape 3C was .040, a lower figure than either tape 1C or 2C.
In this ratio, Coach C became more and more direct as the season progressed. He dropped from a .174 in tape 1C to a .040 in tape 3C, which signified a fairly large change and showed a much more direct approach to motivation and discipline problems.

(11) In tapes 1C, 2C, and 3C there were no tallies in the 8-9 cell. This meant that in the three taped sessions there were no instances in which a player extended his response after answering a direct question.

In summary, Coach C's verbal behavior underwent several changes during the three taping sessions. Seven ratios moved further from Flanders' predicted averages as the season progressed (8). These were the CCR, I/D, i/d, TRR, TQR, PIR, and TRR89. One ratio that moved closer to Flanders' average was the SSR. It was also noted that: (a) the SSR for tape 3C was the highest of the 21 individual tapes, (b) the TRR89 for tape 3C was the lowest of the 21 individual tapes, and (c) the i/d ratio for tape 3C showed the most direct approach to motivation and discipline of the 21 individual tapes.

Coach D: The win-loss record for Coach D progressed steadily as the season advanced. For tape one, his win-loss record was 1-0; for tape two, it was 11-4, and for tape three, it was 14-4.

( 1) The primary pattern for tape 1D was a 5-9-5 pattern. This was a period of lecture followed by a divergent student response and then back to more lecture. The primary pattern for tape 2D was a 5-6-7-5 pattern. This was lecture, followed by directions, followed by criticism or justification of authority, then back to lecture.

The comparison of tape 1D and 2D showed Coach D had moved from the position of allowing some player participation to one of allowing none at
The primary pattern for Tape 3D was a 5-9-3-5 pattern. This showed the coach using lecture, followed by a divergent student response, followed by the coach using the players' ideas and then continuing to lecture. This pattern showed that the coach switched back to a pattern which allowed the players to talk and then used their ideas, rather than just a return to lecture or criticism or justification of authority as in tapes 1D and 2D.

In summary, Coach D shifted primary patterns three times. He went from a 5-9-5 pattern, which had some student participation, to a 5-6-7-5 pattern, which had no player participation, back to a 5-9-3-5 pattern, which again had player participation, and the use of student ideas.

(2) In tape 1D, the I/D ratio was .193 and .083 in tape 2D. This meant that tape 2D was .110 more direct than tape 1D.

The I/D ratio for tape 3D was .148 and was .045 more direct than tape 1D, though tape 2D was .065 more direct than tape 3D. All three of these tapes are extremely direct, according to Flanders' predictions (8).

The I/D ratio for Coach D did change as the season progressed, most notably in the second session.

(3) In tape 1D, the coach talked for 82% of the half-time session; the players talked 17.2% and silence or confusion accounted for .82%. In tape 2D, coach talk used up 92% of the half-time session; player talk took up 4.4% and silence or confusion accounted for 3.6% of the time. A comparison of tape 1D and 2D showed that tape 1D had 12.8% more player talk; tape 2D had 10.0% more coach talk, and 2.8% more silence or confusion. This showed that the players became less involved in the second session.
Coach talk depleted 83.5% of the half-time session in tape 3D; player talk used up 14.0% and silence or confusion accounted for 2.5% of the time. A comparison of tapes 1D and 3D revealed that tape 3D had 1.5% more coach talk and 1.7% more silence or confusion, and tape 1D had 3.2% more player talk.

Tapes 2D and 3D were compared and tape 2D had 8.5% more coach talk, 1.1% more silence or confusion, and tape 3D had 9.6% more player talk.

These results showed that in tapes 1D and 3D, the players were more involved in the half-time session than in tape 2D. They also indicated that the percentage of silence or confusion in tape 1D was the lowest of all 21 individual tapes.

(4) When the Content Cross ratio (CCR) was analyzed for tape 1D, 65.6% of the tallies were in this area, 7.2% more than tape 2D's 58.4%.

The CCR for tape 3D was 81%, 15.4% more than 1D and 22.6% more than 2D.

These results showed that in the final taping the coach placed the greatest emphasis of the half-time session on subject matter. Flanders' predicted CCR figure was 55% (8). All three tapes for Coach D were above this predicted average of emphasis on subject matter during the half-time session.

(5) For tape 1D, the Teacher Question ratio (TQR) was 11.48%, which was 6.22% higher than 2D's 5.26%. Flanders predicted the average TQR was approximately 26% (8). Both tape 1D and 2D fell below this average, revealing Coach D used a below-average number of questions in guiding the content oriented part of the half-time session.

The TQR for tape 3D was 2.47%, 9.01% lower than tape 1D and 2.79% lower than tape 2D. It was also 23.53% lower than Flanders' predicted average TQR (8).
In conclusion, Coach D's TQR steadily regressed as the season went along, indicating that he used fewer and fewer questions while guiding the more content oriented parts of the half-time sessions.

It was also noted that the first TQR was the highest found for the 21 individual tapes.

(6) In tape 1D, the Teacher Response ratio was 2.27%, and 10.64% in tape 2D which is 8.37% higher. The TRR for tape 3D was 55.00%, which was 52.73% higher than tape 1D, and 44.36% higher than tape 2D.

Flanders predicted the average TRR to be close to 42.00% (8). Tapes 1D and 2D were far below this but tape 3D was 13.00% above the predicted average. This meant that in the first two sessions, Coach D's responses to the ideas and feelings of his players were below the predicted average but in the third session these responses were 13.0% above that figure.

(7) When the Pupil Initiation ratios (PIR) for Coach D were analyzed, all three were 100.00%. This meant that in the three sessions taped, every player response was self-initiated.

(8) When the Instantaneous Teacher Response ratio (TRR89) was calculated for tape 1D, the result was 48.48%, and 19.23% for tape 2D. This was a difference of 29.25%. Flanders predicted the average TRR89 at 60.00% and both tapes 1D and 2D were below that, but tape 1D was much closer to it than tape 2D.

The TRR89 for tape 3D was 75.68%, which was 15.68% above Flanders' predicted average (8), 27.20% higher than tape 1D and 56.45% higher than tape 2D.

These results showed that Coach D used below the predicted average amount of praise and player ideas or feelings the instant the player
stopped talking in the first two tapings. In the third taping, he changed and used more than the predicted average amount of praise and player ideas or feelings the instant they stopped talking.

(9) The Steady State ratio (SSR) for tape 1D was 52.3%, and for tape 2D was 64.6% or 12.3% higher. The SSR for tape 3D was 59.5%, 7.2% higher than tape 1D and 5.1% lower than tape 2D. When tape 2D and 3D were compared, tape 2D was 5.1% higher.

Flanders predicted the average SSR to be 50.00% (8). All three tapes for Coach D were above this average by at least 14.6%. This meant Coach D spent close to the average amount of time in each category and had an average interchange rate.

(10) The i/d ratio for tape 1D was .294, and .119 for tape 2D. Both of these ratios showed an extremely direct approach to motivation and discipline problems. The i/d ratio for tape 3D was a very indirect 1.222.

In summary, Coach D switched from a very direct approach to motivation and discipline problems in tapes 1D and 2D to an indirect approach in tape 3D.

(11) There were no tallies in the 8-9 cells of tapes 1D, 2D, or 3D. This meant the players were not allowed to extend their answers to directed questions.

In conclusion, Coach D had several changes in the different ratios during the three taped sessions. The two most notable changes were in the TRR which increased from 31.36% below Flanders' predicted average (8), to 13.00% above Flanders' figure (8), and in the TRR89 which also increased from 30.77% below Flanders' predicted average (8) to 25.68% above this
figure. It should be pointed out that the TRR for tape 1D was the lowest of all the 21 tapes analyzed. One other notable point was the low CCR for tape 2D; it was the lowest of all the 21 individual CCR's. The TQR for tape 1D showed that Coach D used more questions to guide the content oriented part of the half-time session than any of the other coaches in the 21 individual tapes.

Coach E: The win-loss record of Coach E steadily regressed as the season progressed. For session one, it was 0-3, session two was 2-9, and session 3 was 3-16.

(1) The Primary Pattern for tape 1D of Coach E was a 5-6-5 pattern which showed that he began with lecture, switched to directions, then returned to lecturing. This pattern eliminated all player participation.

The primary pattern for tape 2D was a 5-7-5 pattern, which began with lecture, shifted to criticizing or justifying authority, then returned to lecture. This pattern also excluded the players from the main interaction pattern.

The primary pattern for tape 3D was identical to that of tape 1E 5-6-5.

In conclusion, the only change in Coach E's primary pattern was that he switched from giving directions in tapes 1E and 3E to criticizing or justifying authority in tape 2D.

(2) For tape 1E, the I/D ratio was .250, and was .049 for tapes 2E and 3E. When tape 1E, 2E and 3E were compared, both tape 2E and 3E were .201 more direct than tape 1E.

These results showed very direct presentations by Coach E during all three half-time sessions. One interesting fact was evident in that the
I/D ratio for tape 1E was the most indirect of the 21 individual tapes. Coach E became much more direct after the first session.

(3) When the Coach talk time in tape 1E was examined, it was found that Coach E talked 88% of the time, his players talked 7.4% of the time and there was silence and confusion 4.6% of the time.

The coach talked for 93.5% of the time in tape 2E; the players talked 3.3%, and there was silence or confusion 3.2% of the time. When tapes 1E and 2E were compared, tape 2E had 5.5% more coach talk; tape 1E had 4.1% more player talk, and 1.4% more silence or confusion.

In tape 3E, the coach talked 92.5% of the time; the players talked 1.1% of the time, and there was silence or confusion 6.4% of the time. When tape 1E and 3E were compared, tape 3E had 4.5% more coach talk, 1.8% more silence or confusion, and tape 1E had 6.30% more player talk.

When tapes 2E and 3E were compared, tape 2E had 1.0% more coach talk, and 2.2% more player talk; tape 3E had 3.2% more silence or confusion.

In conclusion, Coach E used a high percentage of coach talk during all three taping sessions. The players talked less during the three sessions, decreasing from 7.4% to 1.1% of the time.

(4) When the Content Cross ratio (CCR) was analyzed for tape 1E, 76.9% of the tallies were in this area, 14.4% less than tape 2E's 91.3%. This indicated that in session two, Coach E placed a greater emphasis on subject matter during the half-time session.

The CCR for tape 3E was 86.0%, 9.1% more than tape 1E and 5.3% less than tape 2E.

These results were at least 31.0% over the predicted average CCR found by Flanders (8). This meant that Coach E placed a great amount of emphasis on subject matter during all three half-time sessions.
(5) For tape IE, the Teacher Question ratio (TQR) was 7.69%, 6.22% higher than tape 2E's TQR of 1.47%. In session 2E, Coach E used 6.22% fewer questions while guiding the more content oriented part of the half-time session. It was noted that both these figures were below Flanders' predicted average TQR of 26% by at least 18.31% (8). This showed very small use of questions when guiding the more content oriented part of the half-time sessions during the first two taping sessions.

This pattern continued to decrease as the season progressed, to the point of a 0 TQR for tape 3E. This meant there were no questions used to guide the more content oriented part of the half-time session in tape 3E.

(6) The Teacher Response ratio (TRR) for tape IE was 46.67%. This was 4.67% above the average TRR predicted by Flanders (8). The TRR for tape 2E was 16.67%, 30% lower than tape IE, and 10% lower than the 26.67% TQR of tape 3E.

Both tapes 2E and 3E were below Flanders' predicted 51.34% TRR. Tape 2E was 25.33% below this figure and tape 3E was 15.33% below it.

These results showed Coach E's responses to his players' ideas or feelings were above Flanders' predicted average (8) for the first taping session, then they fell below average for the second and third sessions.

(7) The Pupil Initiation ratio (PIR) for the tape IE was 25%, 41.67% lower than tape 2E's PIR of 66.67. During the second taping session, Coach E's players initiated 41.67% more of the responses in the half-time session than in tape IE. Flanders predicted the average PIR to be close to 34.00% (8). Tape 1E was 9% below this figure and tape 2E was 32.67% above this predicted average. This showed a large change in the number of times the players initiated responses.
In tape 3E, the PIR again fell below Flanders' predicted average. In fact, there were no tallies at all in category nine. This meant that there was no player initiated talk at all during the third half-time session.

(8) When the Instantaneous Teacher Response ratio (TRR89) was calculated for tape 1E, the result was 57.89%, which was 29.32% higher than tape 2E's TRR of 28.57%. This was a large difference but it should be remembered that both tape 1E and 2E were below Flanders' predicted average TRR89 of 60% (8).

The TRR89 for tape 3E was 31.25%, 26.64% lower than tape 1E and 2.68% higher than tape 2E. Again, these were large differences, but tapes 2E and 3E were also under Flanders' average (8).

These results showed Coach E used categories 1 (feelings), 2 (praise), and 3 (player ideas), the instant the player stopped talking very few times and as the season progressed, he used these categories even fewer times.

(9) The Steady State ratio (SSR) for tape 1E was 50.00%, 10.9% lower than tape 2E's SSR of 60.9%. This meant that in the second taping session, Coach E stayed in each category for periods longer than three seconds 10.9% of the time. Flanders' (8) predicted SSR is 50.00%. The SSR for Coach E in tape 1E was exactly this figure, and in tape two was 10.9% above it.

The SSR for tape 3E was 73.1%, 23.1% higher than tape 1E and 12.2% higher than tape 2E.

These results showed that Coach E had a tendency to increase the amount of time he spent in each category as the season progressed. They
also showed that the interchange between Coach E and his players became less and less rapid.

(10) The i/d ratio for tape 1E was .875, .675 more indirect in its approach to motivation and discipline problems than tape 2E's i/d ratio or .200.

The i/d ratio for tape 3E was .364, which was .511 more direct than tape 1E and .164 more indirect than tape 2E.

These figures showed Coach E's approach to motivation and discipline problems becoming more and more direct as the season progressed.

(11) For tapes 1E, 2E, and 3E, there were no tallies in the 8-9 cell. This meant that in the three half-time sessions taped, players were never allowed to continue speaking after making a convergent response.

In summary, it was noted that there were several changes in Coach E's verbal behavior; included in these were: (a) tape 1E had the lowest SSR of all the 21 individual tapes, (b) tape 1E had the lowest PIR of all the 21 individual tapes, (c) tape 2E had the lowest TQR of all the 21 individual tapes.

Coach F: As the season progressed, the win-loss record of Coach F steadily regressed. For session one, it was 1-2; for session two, 4-10, and for session three, 5-15.

(1) For tapes 1F and 2F, Coach F exhibited the same primary pattern of verbal behavior. This was a 5-6-5 pattern, or lecture followed by giving directions, then a return to more lecture. These patterns excluded all player talk.

The primary pattern for tape 3F was a 5-9-5 pattern. This was lecture, followed by a divergent response, followed by more lecture.
When these patterns were compared, the only difference noted was a shift after the second taping session to a pattern involving some player responses.

(2) The I/D ratio for tape 1F was .171, and .145 for tape 2F. When they were compared, tape 2F was .026 more direct.

The I/D ratio for tape 3F was .208, which was .037 more indirect than tape 1F, and .037 more indirect than tape 2F.

These results revealed that Coach F was very direct in his half-time presentations. He did become a little more indirect in the final session, but the overall picture was that of a very direct approach.

(3) The percentage of time the coach talked in tape 1F was 76.6%. Players talked 22.4% of the time and silence or confusion accounted for 1.0% of the time.

When tape 2F was analyzed, it was found that the coach talked 87.2% of the time; players talked 11.9% of the time, and there was .9% silence or confusion. When tapes 1F and 2F were compared, tape 1F had 10.5% more player talk, 1.0% more silence or confusion, and tape 2F had 10.6% more coach talk.

These results showed that the players had a large role in the half-time discussion in tape 1F, then lost most of that role in tape 2F in the second session.

In tape 3F, the coach talked 60.4% of the time; the players talked 19.8% of the time, and there was silence or confusion 19.8% of the time. When tapes 1F and 3F were compared, tape 1F had 16.2% more coach talk, 2.6% more player talk, and tape 3F had 18.8% more silence or confusion.

When tapes 2F and 3F were compared, tape 3F had 7.9% more player talk and 18.9% more silence or confusion. Tape 2F had 26.8% more coach
These results showed some large changes in Coach F's verbal behavior. In the first session, he allowed the players to become involved in the half-time discussion. In the second session, he controlled the majority of the talk, then in the third session he again allowed the students to participate more.

(4) Analysis of the Content Cross ratio (CCR) for tape 1F showed 72% of the tallies in this area, 3.2% more than tape 2F's CRR of 68.8%. The CCR for tape 3F was 59.4%, which was 12.6% less than tape 1F, and 9.4% less than tape 2F.

When these results were compared they showed that the CCR for Coach F decreased as the season progressed. Flanders predicted the average CCR to be 55% (8). All three tapes were above that figure and, although the first session was 17% above it, the last session was only 4.4% above it. This indicated that as the season progressed, Coach F put less and less emphasis on subject matter during the half-time session.

(5) For tape 1F the Teacher Question ratio (TQR) was 8.33%, only .14% lower than tape 2F's TQR of 8.47%. This meant Coach F used approximately the same number of questions to guide the more content oriented part of the half-time session for tapes 1F and 2F.

The TQR for tape 3F was 6.52%, 1.81% lower than tape 1F, and 1.95% lower than tape 2F.

The average TQR for most classes, predicted by Flanders, was close to 26%. This meant that all three sessions were below this figure by at least 17.53%. These results indicated that Coach F used a far below average amount of questions to guide the more content oriented part of the half-time sessions. During the third session, he used even fewer questions than in the first two sessions.
For tape IF, the Teacher Response ratio (TRR) was 31.82%. Flanders predicted the average TRR to be 42% (8). This put tape IF 10.18% below his figure. When tape IF was compared to the TRR for tape 2F, 19.44%, a difference of 12.38% was found. This was a large decrease and showed a marked reduction in the responses to his players' ideas and feelings.

The TRR for tape 3F was 58.33%. This figure was 16.33% above Flanders' predicted average (8), and was 26.51% higher than tape IF, and 38.89% higher than tape 2F.

Coach F's responses to his players' feelings and ideas were below Flanders' predicted average in the first two sessions, and much farther below that figure in the second session. Then he changed, and his responses were above the predicted average for the third session.

(7) The Pupil Initiation ratio (PIR) for tape IF was 87.50%, 25.9% higher than tape 2F's PIR of 61.54%.

The PIR for tape 3F was 94.74%, 7.24% higher than tape IF, and 33.2% higher than tape 2F.

All three of Coach F's PIR's were above Flanders' predicted average of 34% (8). Consequently, Coach F's players initiated responses during the half-time session at a higher rate than classroom teachers.

(8) When the Instantaneous Teacher Response ratio (TRR89) was calculated for tape IF, the result was 67.39%. This was 7.39% above Flanders' predicted average TRR89 74.78% (8). The TRR89 for tape 2F was 40.82%, 26.57% below the TRR89 of tape IF, and 19.18% below Flanders' predicted average (8).

The TRR89 for tape 3F was 83.87%, 16.48% higher than tape IF and 43.05% higher than tape 2F. These figures showed that Coach F started the first session by using categories: (1) feeling, (2) praise, and (3)
players' ideas over the predicted average amount of time the instant the players stopped talking. In session two, he switched, and used these categories below the predicted average amount of time. In the final tape, he returned to using these categories for a longer period of time than Flanders' predicted average.

(9) The Steady State ratio (SSR) for tape 1F was 50.5%, 5.5% less than tape 2F's SSR of 56.0%.

The SSR for tape 3F was 59.4%, 8.9% higher than tape 1F and 3.4% higher than tape 2F.

These results showed two things: one, the SSR's for Coach F increased as the season progressed, and two, the SSR's for Coach F were very close to the average SSR of 50% predicted by Flanders (8). This meant that the interchange between Coach F and his players was approximately Flanders' predicted average, and that Coach F remained in the different categories for periods of time longer than the three seconds average amount of time as predicted by Flanders.

(10) For tape 1F the i/d ratio was .467, .226 more indirect than tape 2F's i/d ratio of .241. The i/d ratio for tape 3F was 1.40, .933 more indirect than tape 1F and 1.174 more indirect than tape 2F.

These results indicated that Coach F used a direct approach to motivation and discipline in the first two taping sessions. He later switched to an indirect approach to these problems in the third taping session.

(11) In tapes 1F, 2F, and 3F, there were no tallies in the 8-9 cells. Consequently, during the three taping sessions there were no instances where students were allowed to extend their responses to directed questions.
There were several changes in Coach F's verbal behavior, most notably in the TRR, TRR89, and i/d areas. The TRR89 for tape 3F was the highest of all the 21 individual TRR89's. The i/d ratio for tape 3F showed the most indirect approach to motivation and discipline problems of the 21 individual tapes. Tape 3F had the highest amount of silence of confusion, and the lowest amount of coach talk of the 21 individual tapes.

Coach G: The win-loss record of Coach G steadily regressed as the season progressed. For session one, it was 0-3; for session two, 3-8, and for session three, 7-14.

(1) The Primary Pattern for tape one of Coach G was a 5-6-5 pattern, lecture succeeded by directions, followed by more lecture. The Primary Pattern of tape 2G was identical to that of tape 1G, a 5-6-5 pattern. Neither of these showed any player participation in the primary pattern.

For tape 3G, the primary pattern was a 5-7-5, that is, lecture followed by criticism or justification of authority, succeeded by more lecture. This pattern also excluded any player involvement in the primary pattern.

The only change in Coach G's Primary Pattern was that of a shift from giving directions, to one of criticizing or justifying authority in the second phase of the pattern.

(2) For tape 1G, the I/D ratio was .050, .025 more direct than tape 2G's I/D ratio of .075, and .049 more direct than tape 3G's I/D ratio of .099.

These results revealed that all three of Coach G's half-time presentations were extremely direct, and became progressively more direct as the season advanced.
An analysis of tape 1G, revealed that Coach G spent 88.7% of the time talking; his players talked for 7.0% of the time, and there was silence or confusion 4.3% of the time.

In tape 2G, Coach G talked 91.1% of the time; the players talked 5.10% of the time, and there was silence or confusion 3.8% of the time. When tapes 1G and 2G were compared, tape 1G had 1.9% more player talk, .5% more silence or confusion, and tape 2G had 2.4% more coach talk.

In tape 3G the coach talked 90.7% of the time; the players talked 8.1% of the time, and there was silence or confusion 1.2% of the time. When tapes 1G and 3G were compared, tape 3G had 2.0% more coach talk and 1.1% more player talk, but tape 1G had 3.1% more silence or confusion.

Comparison of tapes 2G and 3G showed that tape 2G contained .4% more coach talk plus 2.5% more silence or confusion, and tape 3G had 3.0% more player talk.

All three sessions were monopolized by coach talk, and player talk made up only a small percentage of the half-time discussion. It was noted that there was very little change in the three percentages over the three sessions.

Analysis of the Content Cross ratio (CCR) for tape 1G showed 91.50% of the tallies in this area, only .4% more than in the Content Cross of tape 2G.

The CCR for tape 3G was 93.0%, 1.5% higher than tape 1G and 1.9% higher than tape 2G.

There was very little change in the CCR's of Coach G. All three tapes were far above Flanders' predicted average which indicated that in all three cases the main emphasis of the half-time sessions was placed on subject matter.
(5) The Teacher Question ratio (TQR) for tape 1G was 3.45%. This was 22.55% below Flanders' predicted average of 26% for the TQR (8). The TQR for tape 2G was 4.76%, 1.31% greater than tape 1G and 21.24% below Flanders' predicted average. The TQR for tape 3G was 4.23% which is .78% greater than tape 1G and .53% less than tape 2G.

All three of Coach G's TQR's were at least 21.24% below Flanders' predicted average TQR (8). This meant that in all three tapes, Coach G's use of questions to guide the content oriented part of the half-time sessions was far below average.

The three TQR's did not change much as the season progressed.

(6) In calculating the Teacher Response ratio (TRR) for tape 1G, the result was 20.0%, which was 2.22% lower than tape 2G's TRR of 22.22%. The predicted average TRR determined by Flanders was 42.0% (8). Tape 1G fell 22% below this figure and tape 2G was 19.78% below that. Obviously, in the first two sessions Coach G's responses to his players' ideas and feelings were far below Flanders' predicted average.

In tape 3G, the TRR was 70%. The difference between tapes 3G and 1G and 2G was 50.00% and 47.78T, respectively. This was a large variation and showed that in the third taping session Coach G's responses to his players' feelings and ideas were 28.00% above Flanders' predicted average TRR. It was also noted here that the TRR for tape 3G was the highest of the 21 individual tapes.

(7) The Pupil Initiation ratio (PIR) for tape 1G was 60.00%. Flanders predicted the average PIR to be close to 34% (8). Tape 1G was 26% above this average, which implied that when players talked, it was by their own initiation 26% more than average.
The PIR for tape 3G was 57.14%, which was again above Flanders' predicted average by 23.14%.

The PIR for tape 2G could not be calculated because there were no tallies in category nine, implying that there were no instances in which players initiated responses.

Tapes 1G and 3G were very similar with pupils initiating responses more than an average number of times. In tape 2G, this pattern changed to one of no player initiated responses.

(8) When the Instantaneous Teacher Response ratio (TRR89) was calculated for tape 1G, the result was 60%, which was 13.85% greater than tape 2G's TRR89 of 46.15%, and exactly Flanders' predicted average (8).

The TRR89 for tape 3G was 78.57%, which was 18.57% greater than tape 1G and 32.42% greater than tape 2G.

These results showed that in the first session the instant the players stopped talking, the coach used praise, players' ideas, or feelings, an exact average number of times, as predicted by Flanders (8). In session two, these responses fell 32.42% below this average of 60.0% (8). Then in the third session, the responses went over Flanders' predicted average by 18.57%.

Coach G's TRR89 changed in all three taping sessions, but the most dramatic one was in session two.

(9) The Steady State ratio (SSR) for tape 1G was 71.8%, 3.40% greater than tape 2G's SSR of 68.4% and 3.2% higher than tape 3G's SSR of 68.6%. The difference between tapes 2G and 3G was only .2%.

These results showed a very consistent SSR as the season progressed. All three tapes were at least 18.4% above Flanders'(8) predicted average SSR of 50.00%, indicating that the interchange between the coach and his
and his players was slower than the predicted average, and he spent more than the predicted average three seconds in the different categories.

(10) The i/d ratios for tapes 1G and 2G showed an extremely direct approach to motivation and discipline problems. The i/d ratio for tape 1G was .250, .036 more direct than tape 2G's i/d ratio of .286. Coach G showed a marked change in the third i/d ratio, resulting in an indirect 1.333.

Coach G started the first two sessions with a very direct approach to motivation and discipline then in the third session switched to an indirect approach.

(11) For tapes 1G and 2G there were no tallies recorded in the 8-9 cell. This indicated that in the first two sessions there were no incidents in which a player extended his response to a directed question.

There was one tally in the 8-9 cell in tape 3G. Of all 21 tapes from the seven individual coaches, this was the only instance in which a player was allowed to expand his answer to a directed question.

In conclusion, there were several categories which showed obvious changes in Coach G's verbal behavior. Most notably, these were in the TRR, which became extremely indirect in the third taping session, the PIR and the TRR89, both of which became very direct in the second taping session, and the i/d ratio which revealed a very large indirect shift in the third taping session.

Total Coaches Whose Win-Loss Record Progressed (Coaches A, B, C, D)

As is indicated by the heading, these four coaches' win-loss records progressed as the season progressed. For session one, the combined win-loss record was 10-1. For session two, the win-loss record was 39-11. For
session three, the combined win-loss record was 55-13. It was also noted that this group of coaches had the majority of their losses between the first and second taping session.

In the following analysis, this group of four coaches with progressive win-loss records will be referred to as "Coach X".

(1) An analysis of tape 1X showed the primary pattern was 5-9-5, indicating lecture, followed by divergent student responses, succeeded by more lecture.

The primary pattern for tape 2X was a 5-7-5. When tapes 1X and 2X were compared, tape 1X showed some player participation in the primary pattern, which in tape 2X was replaced by coach criticism or justification of authority.

The primary pattern for tape 3X was a 5-9-3-5 pattern, or lecture, followed by divergent student response, which the coach in turn used, then returned to lecture.

When tape 1X and 3X were compared, the only difference was in tape 3X, where the coaches used more of the player ideas after a divergent player response.

When tape 2X and 3X were compared, there was no player participation in tape 2X, but in tape 3X player talk played an important role in the primary pattern.

In summary, it was noted that there was a major change in the primary pattern between tape 1X and 2X, and tapes 2X and 3X, with tapes 1X and 3X being fairly similar. It was also noted again that this group of coaches had the majority of their losses between the first and second session.

(2) For tape 1X, the I/D ratio was .098, .044 more indirect than tape 2X's I/D ratio of .054. It was observed here that this was the
lowest I/D ratio of the six combined tapes.

This meant that the winning coaches' second taped half-time presentation was more direct than their first.

The I/D ratio for tape 3X was .102, which was .004 more indirect than tape 1X and .048 more indirect than tape 2X.

In conclusion, all three of the coaches' half-time presentations were extremely direct, with tape 2X being the most direct of the six combined tapes- This change came between tapes 1X and 3X, which were a little less direct.

( 3) Upon analyzing tape 1X, it was found that the coaches talked 90.3% of the time; players talked 8.8% of the time and there was silence or confusion .9% of the time. It was obvious that the coaches talked the biggest part of the half-time session.

In tape 2X, the coaches talked 94.3% of the time; the players talked 3.1% of the time, and there was silence or confusion 2.6% of the time.

When tapes 1X and 2X were compared, tape 2X contained 4.0% more coach talk, and 1.7% more silence or confusion, while tape 1X had 5.7% more player talk. These results implied that during the first taped session the coaches allowed the players a larger percentage of time to talk. In the second session the coaches talked 4.0% more of the time.

In tape 3X the coaches talked 90.1% of the time, the players talked 7.5% of the time, and there was silence or confusion 2.4% of the time.
When tapes 1X and 3X were compared, tape 1X had only .2% more coach talk, and 1.3% more player talk, while tape 3X had 1.5% more silence or confusion. These results showed very little change between the first and third taped sessions.
When tapes 2X and 3X were compared, tape 2X had 4.2% more coach talk, .2% more silence or confusion, though tape 3X had 4.4% more player talk. This indicated that after the second taping session, the coaches shifted again to allow more player talk during the half-time periods.

In conclusion, there were several variations in the amount of time the coaches and players spent talking. In tape 2X, the amount of coach talk was the highest and the player talk was the lowest of the six combined matrices. The silence or confusion in tape 1X was the lowest of the six combined matrices. The percentage did not vary much from session to session, and the changes were small.

(4) In tape 1X, 78.44% of the tallies were in the content cross. This was 3.72% more than in the content cross of tape 2X which had 74.72%. The CCR for tape 2X was the lowest of the six combined matrices.

The CCR for tape 3X was 80.38%, which was 1.94% higher than tape 1X and 5.66% higher than tape 2X.

Flanders predicted the average CCR to be 55%. All three of the CCR's for Coach X were at least 19.72% above that figure, which implied that all the coaches whose win-loss record progressed placed an above-average amount of emphasis on subject matter during the half-time sessions.

In conclusion, the CCR's for Coach X showed only a slight change overall in the three taping sessions.

(5) The Teacher Question ratio for tape 1X was 4.35% which was 1.70% higher than tape 2X's TQR of 2.65%. Of the six combined matrices, tape 2X had the lowest TQR.

The TQR for tape 3X was 4.72%, which was .37% higher than tape 1X and 2.7% higher than tape 2X.
These results showed that Coach X used very few questions to guide the more content oriented part of the half-time sessions. The major change in the TQR occurred in the second taping session. Session two is also the period in which the coaches had the majority of their losses.

In calculating the Teacher Response ratio (TRR) for tape IX, it was found that the coaches responded to the ideas and feelings of their players 20.95% of the time. The average TRR for most classes was predicted by Flanders to be 42% (8). The TRR for tape IX fell 21.05% below this figure.

The TRR of tape IX, 10.38% was the lowest of the six combined matrices. When tapes IX and 2X were compared, tape 2X was 10.67% lower, indicating that in the second session Coach X responded even fewer times to their players' ideas and feelings than in session one.

The TRR for tape 3X was 23.46%, which was 2.51% higher than tape IX and 13.08% higher than tape 2X. Tape 2X was 31.62% below Flanders' predicted average, and tape 3X was 18.54% below that figure (8).

These results indicated that in the first and third sessions, Coach X used very few questions to guide the more content oriented part of the half-time periods, but in the second session he used even fewer questions. Again, this second session was taped during the period that the coaches had the majority of their losses.

The Pupil Initiation ratio (PIR) for tape IX was 91.89%. This was the highest PIR of the six combined matrices. The PIR for tape 2X was 90.91%, and showed the players' responses were self-initiated .98% more often in tape IX.

The PIR for tape 3X was 78.57%, which was lower than the PIR's of tapes IX and 2X but still 44.57% above Flanders' predicted average PIR (8).
The results of these tapes indicated that Coach X's players initiated an above-average number of responses in the three taping sessions.

(8) The Instantaneous Teacher Response ratio (TRR89) for tape 1X was 41.55%, which was 22.75% above tape 2X's TRR89 of 18.80%. Tape 2X had the lowest TRR89 of the six combined matrices and was also 41.20% below Flanders' predicted average TRR89 (8). This meant that in both sessions the coaches were below the predicted average in the number of times they used categories: (1) feelings, (2) praise, and (3) player ideas the instant the player stopped talking, but they were further below the predicted average in the second sessions.

The TRR89 for tape 3X was 43.93%, which was 2.38% above tape 1X and 25.13% above tape 2X.

In conclusion, it was noted that the largest change in the coaches TRR89 occurred in the second taping session.

(9) The Steady State ratio (SSR) for tape 1X was 65.88%, which was 4.86% lower than tape 2X's SSR of 70.74%. Tape 2X's SSR was the highest SSR of the six combined matrices, and was also 20.74% above the average SSR predicted by Flanders (8).

The SSR for tape 3X was 67.47%. This was also above Flanders' predicted average by 17.47% (8), 1.59% higher than tape 1X and 3.27% lower than tape 2X.

In conclusion, the SSR's for Coach X remained fairly constant for the three taping sessions, but there was a change in the second session. The SSR was the highest there of all the six combined matrices. This meant that in the second session the coaches were spending more than three seconds in the different categories, an above-the-predicted average amount of time. During the second session also, the coaches had the majority of
their losses.

(10) The i/d ratio for tape 1X was .265, and was .149 more indirect than tape 2X's i/d ratio of .116. The i/d ratio for tape 2X was the most direct of the six combined matrices. It showed a very direct approach to discipline and motivation problems.

The i/d ratio for tape 3X was .306. This was .041 more indirect than tape 1X and was .190 more direct than tape 2X.

In summary, all three i/d ratios were very direct for Coach X, and it was observed that the second session was the most direct of all the six tapes. This is the session in which the majority of Coach X's losses occurred.

(11) In tapes 1X, 2X, and 3X there were no instances in which players were allowed to extend their responses to directed questions.

In conclusion, there were several very noticeable changes in the verbal behavior of the four coaches whose win-loss record progressed over the season. All but 2 of these changes occurred in the second taped sessions. Thr TRR, TQR, and TRR89 were the lowest of the 6 tapes in this session. Session two also showed the most direct I/D and i/d ratios of the six combined matrices. The SSR was found to be the highest of the six combined matrices in session two.

In other words, these results showed that in the second taping session of Coach X, the entire half-time presentation was the most direct of the six tapes. It also showed that they placed the least amount of emphasis on subject matter, asked the fewest number of questions while guiding the content oriented part of the half-time sessions, and responded to the ideas and feelings of the players the fewest number of times. These results also indicated that in session two, Coach X used categories:
(1) feelings, (2) praise, and (3) players ideas, the lowest number of times the instant the players stopped talking. Coach X's approach to motivation and discipline problems was the most direct in session two, and the interchange between the coaches and players was the slowest in session two.

A very significant pattern, labeled the "V syndrome" became apparent here. The V syndrome occurred when a coach used an indirect approach in his first half-time presentation, (as determined by the eight calculated ratios), then switched to a direct approach in the second session, and in the third session returned to a direct presentation. It should be remembered that the 21 half-time presentations were all direct when compared to Flanders' predicted averages, but the first and third sessions, on the average, were indirect when compared to the second sessions. To further clarify the V syndrome, the following diagram is offered:

![Diagram of V Syndrome]

TABLE IX
"V SYNDROME"

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COACH IX
MATRIX FOR COACH X, SESSION A

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Total Coaches Whose Win-Loss Record Regressed (Coaches E, F, G)

As indicated by the heading, the win-loss records of the three coaches, E, F, G, regressed as the season progressed. For session one, the combined win-loss record was 1-8, for session two 9-27, and for session three 15-45.

In the following analysis, this group of three coaches whose win-loss record regressed was referred to collectively as "Coach Y".

(1) In analyzing the primary pattern for tape 1Y, a 5-9-3-5 pattern emerged. This indicated a period of lecture, followed by a divergent student response, which was succeeded by the coach's use of the players' ideas, then a return again to lecture.

The primary pattern for tape 2Y was a 5-7-5 pattern, or lecture followed by criticism or justification of authority, succeeded by more lecture. When tapes 1Y and 2Y were compared, it was observed that player participation was a key factor in the primary pattern of tape 1Y and that this player talk was replaced with coach criticism and justification of authority in tape 2Y.

The primary pattern for tape 3Y was 5-9-5. This meant the coaches started with lecture which was succeeded by divergent student responses, then they returned to more lecture.

When tapes 1Y and 3Y were compared, they differed only in tape 1Y where the coaches used more of the players' ideas after they made a divergent response.

When tapes 2Y and 3Y were compared, there was no player participation noted in the primary pattern of tape 2Y, but player participation was the key to the primary pattern of tape 3Y.
In conclusion, there was a change in the primary pattern between tapes 1Y and 2Y and between tapes 2Y and 3Y, that of eliminating player participation from the primary interaction pattern.

(2) The I/D ratio of tape 1Y was .165. Of the six combined tapes this I/D ratio was the most direct.

The I/D ratio for tape 2Y was .165. When tapes 1Y and 2Y were compared, tape 2Y was .075 more direct in the half-time presentation.

The I/C ratio for tape 3Y was .104, which was only .065 more direct than tape 1Y and .014 more direct than tape 2Y.

These three tapes showed Coach Y's I/D ratios to be very direct. There was a change in the I/D ratios between the first and third sessions with the first session being the most indirect of the six combined matrices.

(3) In tape 1Y, the coaches talked 85.7% of the time; players talked 13.0% of the time and there was silence or confusion 1.3% of the time. These results showed the coaches talking most of the time, yet the percentage of player talk was the highest of the six combined tapes.

When tape 2Y was analyzed, it was apparent that the coaches talked 90.4% of the time; the players talked 7.1% of the time, and there was silence or confusion 2.5% of the time.

When tapes 1Y and 2Y were compared, tape 2Y had 4.7% more coach talk and 1.2% more silence or confusion, while tape 1Y had 5.9% more player talk. This showed that during the second session the coaches talked more, while the player talk accounted for less time than in tape 1Y.

The coach talk for tape 3Y was 80.7%. The player talk was 9.8% and silence or confusion accounted for 9.5% of the time. The amount of coach talk for tape 3Y was the lowest of the six combined tapes, and the amount
of silence or confusion was the highest of the six combined tapes.

When tape 1Y and 3Y were compared, tape 1Y had 5.0% more coach talk and 3.2% more player talk, while tape 3Y had 8.2% more silence or confusion. The large difference in the silence or confusion category was absorbed by the difference in the coach and player talk categories.

When tapes 1Y and 3Y were compared, tape 3Y had a 2.7% more player talk and 6.0% more silence or confusion. Tape 2Y had 9.7% more coach talk.

In conclusion, during the second session, the amount of coach talk increased over the first and third sessions, and the player talk decreased.

(4) In analyzing the Content Cross ratio (CCR) for tape 1Y, 78.67% of the tallies were found in this area, which was 3.83% less than tape 2Y's CCR of 82.50% meaning that the coaches placed more emphasis on subject matter in the second session. Flanders' predicted average CCR was 55%. Tapes 1Y and 2Y were at least 23.67% above this figure (8).

The CCR for tape 3Y was 83.03%. This was the highest CCR of all the combined matrices, and was 28.03% above the predicted average of Flanders (8).

When tapes 1Y and 3Y were compared, tape 3Y was 4.36% higher, and tape 3Y was also higher than tape 2Y by .43%.

These results showed the CCR for Coach Y increasing slightly as the three taping sessions progressed, signifying that the coaches placed more and more emphasis on subject matter as the season progressed.

(5) The Teacher Question ratio (TQR) for tape 1Y was 6.56%, 1.82% higher than tape 2Y's TQR of 4.74%.
The TQR for tape 3Y was 3.23%, which was 3.33% lower than tape 1Y and 1.51% lower than tape 2Y.

Flanders predicted the average TQR to be close to 26.0% (8). This meant the three TQR's for Coach Y were all far below the predicted average for most classes, revealing that the coaches used very few questions while guiding the more content oriented part of the half-time sessions. The TQR also decreased as the sessions progressed.

(6) The Teacher Response ratio (TRR) for tape 1Y was 38.60%. This figure was 3.40% below Flanders' predicted average TRR of 42.0%.

The TRR for tape 2Y was 19105%. When tapes 1Y and 2Y were compared, tape 1Y was 19.55% higher. This was a sizeable difference and showed a decrease in the amount of times the coaches responded to their players' ideas and feelings. The TRR for tape 3Y was 44.12%. This is the highest of the six TRR's and was also 2.12% above Flanders' predicted average TRR (8). When tapes 1Y and 3Y were compared, tape 3Y was 5.52% higher, and tape 3Y was also higher than tape 2Y by 25.0%.

In conclusion, the TRR for Coach Y made some drastic changes. The responses to players' ideas and feelings started close to Flanders' (8) predicted average in the first session then dropped far below this figure in the second session. In the third session, these responses were again above Flanders' predicted average (8).

(7) The Pupil Initiation ratio (PIR) for tape 1Y was 70.27%, 20.27% above tape 2y's PIR of 50.00%, and 36.27% above the predicted PIR of Flanders' (8). The responses of the players were self-initiated fewer times in the second session than in the first session.

In tape 3Y, the PIR was 81.48%, which was 11.21% higher than tape 1Y and 31.48% higher than tape 2Y.
In conclusion, these PIR's showed the self-initiated responses of the players of Coach Y to be above the predicted average in all cases. The one difference was in the second session, in which fewer of the player responses were player initiated than in the first and third sessions.

(8) The Instantaneous Teacher Response ratio (TRR89) for tape 1Y was 62.77%, 24.22% over tape 2Y's TRR89 of 38.55%.

Flanders predicted the average TRR89 to be close to 60.00% (8). This puts the TRR89 of tape 1Y 2.77% above his figure and tape 2Y 21.45% below it. This indicated the number of times Coach Y used categories: (1) feelings, (2) praise, and (3) players' ideas the instant the players stopped talking, was close to Flanders' predicted average (8) in the first session, then fall far below that figure in the second taping session (8).

The TRR89 for session 3Y, 68.58%, was the highest of the six combined matrices, 2.08% higher than tape 1Y and 30.30% higher than tape 2Y.

In conclusion, the big variance in the TRR89 of Coach Y came in the second taping session, where it fell 21.45% below the predicted average TRR89 of Flanders' (8).

(9) The Steady State ratio for tape 1Y was 55.60%. Of the six combined matrices this was the lowest SSR. In tape 2Y the SSR was 61.07%. The average SSR predicted by Flanders was 50.00% (8). Tape 1Y was 5.60% above this average and tape 2Y was 11.07% above it. When tapes 1Y and 2Y were compared, tape 1Y was 5.47% higher.

The SSR for tape 3Y was 67.90%, 17.90% above Flanders' predicted average, 12.30% higher than tape 1Y and 6.83% higher than tape 2Y.

In conclusion, these results showed that as the taping sessions progressed the SSR's also increased, indicating that Coach Y stayed in the individual categories longer than three seconds more and more often.
The interchange between the coaches and players also became slower as the season progressed.

(10) The i/d ratio for tape 1Y was .629, which was .394 more indirect than tape 2Y's i/d ratio of .235.

The i/d ratio for tape 3Y was .789. This was the most indirect i/d ratio of the six combined matrices, and was .160 more indirect than tape 1Y and .554 more indirect than tape 2Y.

These results showed a very direct approach to discipline and motivation problems in all three sessions. They also showed the second session to be the most direct of all. The first and third sessions approached an indirect style, while the second session was extremely direct.

(11) The 8-9 cells for tapes 1Y and 2Y resulted in no tallies, implying that there were no instances in the first two sessions in which players extended their responses to a directed question.

In tape 3Y one tally was found in the 8-9 cell. This indicated one instance in which a player extended his response to a directed question.

In summarizing the changes in Coach Y's verbal behavior, it was noted that this behavior generally fit the "V syndrome". There were a few exceptions to this pattern (SSR, CCR, TQR), but on the whole the V syndrome described his verbal behavior fairly accurately. As he began losing games, he became more direct in his half-time sessions. As the losses continued, he switched back to a more indirect pattern.

From the results of the seven individual analyses, and the two combined analyses, hypothesis one was rejected. There were changes in every coach's verbal behavior as the win-loss records varied, and these changes
tended to vit a V pattern or syndrom.

Tables XV, XVI, XVII, and XVIII show the different taping sessions and combined matrices for Coach Y.

Hypothesis Two: The Coach's verbal behavior will not change with variant basketball game scores at half-time.

Coach C: In the first and second taping sessions, Coach C was ahead during the half-time session. In the third session, he was behind.

(1) The primary interaction pattern for Coach C remained the same for all three taping sessions. This was a 5-7-5 pattern, indicating Coach C began by lecturing, shifted to criticism or justification of authority, then return to more lecture.

(2) The I/D ratio for tape 1C was .067, 0.24 more indirect than tape 2C's I/D ratio of .053. The I/D ratio for tape 3C was .025. This was a very direct finding, in fact .042 more direct than tape 1C, and .011 more direct than tape 2C.

These results indicated that as the season progressed and the half-time situation remained the same, Coach C became more direct in his half-time presentations. In the third session, Coach C was behind, and his presentation became even more direct.

(3) In tape 1C coach talk accounted for 96.0% of the time; player talk accounted for 3.0% of the time, and silence or confusion accounted for 1.0% of the time. In tape 2C the coach talked 97.6% of the time; the players talked 1.2% of the time and silence or confusion accounted for 1.2% of the time. In tape 3C the coach talked 96.4% of the time; the players talked 1.2% of the time and there was 2.4% silence or confusion.

When these three tapes were compared the differences between them were very minimal, only 1.8%, between the player talk of tape 1C and both
# TABLE XIV

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2C and 3C.

These differences showed a fairly consistent pattern, and only a small change in Coach C's verbal behavior. It was observed that the 97.6% coach talk in tape 2C was the highest of the 21 individual tapes.

(4) The Content Cross ratios (CCR) for tape 1C was 82.3%. The CCR for tape 2C was 78% and for tape 3C the CCR was 72.6%.

All three of the CCR's are over the average CCR, predicted by Flanders to be 55%, by at least 27.3% (8), indicating the emphasis placed on subject matter by Coach C was far above average in all three sessions.

As the season progressed the CCR for Coach C decreased and was the smallest in session three in which he was behind at the half-time session.

(5) The TQR for tape 1C was 2.86% and this was 23.14% below the average TQR predicted by Flanders (8). For tapes 2C and 3C, the TQR was 1.82%. This was 1.04% below tape 1C, and 24.86% below Flanders' predicted average (8).

These results showed that in all three of the half-time sessions, Coach C rarely used questions to guide the content oriented part of the half-time session.

(6) The Teacher Response ratio (TRR) for tape 1C was 14.81%, 2.81% higher than tape 2C's TRR of 12.00%. Both these tapes were far below the predicted average TRR of 42% of Flanders (8).

In tape 3C the TRR was 3.85%, which was 10.96% lower than tape 1C and 8.15% lower than tape 2C.

This showed a large change in the TRR of tape 3C from tapes 1C and 2C, implying that in the third session, Coach C's responses to his players' ideas and feelings were far below Flanders' predicted average (8).
(7) Flanders predicted the average Pupil Initiation ratio (PIR) to be around 34% (8). The PIR for tape 1C was 33.33%. This meant the pupil initiated responses in tape 1C were about average.

In tapes 2C and 3C the PIR was 100.0%, which indicated that in the second and third sessions every player response was self-initiated.

(8) The Instantaneous Teacher Response ratio (TRR89) for tape 1C was 23.33%, 8.95% higher than tape 2C's TRR89 of 15.38%.

The TRR89 for tape 3C was 7.41%, which was 15.92% lower than tape 1C and 7.97% lower than tape 2C.

These results showed several interesting points: (a) all three TRR89's were at least 36.67% below Flanders' predicted average TRR89 (8). In other words, the instant the players stopped talking, Coach C was far below this average in the use of categories (1) feelings, (2) praise, and (3) using student ideas; (b) as the season progressed, the TRR89 decreased; (c) in the third session, the TRR89 was the lowest of the 21 individual TRR89's.

(9) As the half-time score changed the Steady State ratio (SSR) of Coach C also changed. In session 1 the SSR was 66.3%, 8.1% lower than the SSR of tape 2C, 74.4%. In tape 3C the SSR was 80.9% and this was an increase of 6.5% over tape 2C.

The SSR for tape 3C was also the highest of all the 21 individual tapes.

Flanders predicted the average SSR to be close to 50% (8). All three SSR's of Coach C were over this figure, which meant the coach stayed in the individual categories for periods of three seconds or longer than an average number of times. This also showed that the interchange between the coach and players became progressively slower in the three taping
sessions.

(10) The i/d ratio for tape 1C was .174, .028 more indirect than tape 2C's i/d ratio of .136.

In tape 3C the i/d ratio was .040. Of the 21 individual tapes, this was the most direct i/d ratio.

The i/d ratio of Coach C revealed two interesting points:
a. Coach C became more and more direct as the half-time score changed.
b. Tape 3C had the most direct i/d ratio of the 21 individual tapes.

(11) In the three taping sessions, there were no instances in which Coach C's players were allowed to expand an answer to a directed question, hence no tallies in the 8-9 cells.

In conclusion, as the half-time score changed, several aspects of Coach C's verbal behavior changed. His team was behind in the third taping session and the SSR increased notably over the first two sessions but the TRR and TRR89 decreased notably also over the first two sessions. Both the I/D and i/d ratios became more direct in the third session, as did the TRR and TQR. The only areas in which this pattern failed to appear were the primary pattern, coach and player talk percentages, and the CCR.

Coach D: In the first taping session, Coach D was ahead at half-time. In the second session he was behind and in the third session he again was ahead.

(1) The primary pattern for tape 1D was a 5-9-5 pattern, consisting of lecture, followed by a divergent player response, then by more lecture. The primary pattern for tape 2D was a 5-6-7-5 pattern, which was lecture, followed by directions which were succeeded by either criticism or justifi-
cation of authority, then more lecture. The difference between these two patterns was that the second one had no player participation.

The primary pattern for tape 3D was a 5-9-3-5 pattern. This was lecture followed by a divergent response, which was succeeded by the use of players' ideas then ended with more lecture.

When tapes 1D and 3D were compared, the only difference was the addition of category 3 - acceptance or use of players' ideas, after a divergent response in tape 3D.

When tapes 2D and 3D were compared, it was evident that the players returned to participating in tape 3D's half-time discussion.

In conclusion, the primary patterns showed a marked change in the second taping session because of the elimination of all player talk.

(2) The I/D ratio for tape 1D was .193, .110 more indirect than tape 2D's I/d ratio of .083.

Tape 2D was also more direct by .065 than the I/D ratio of tape 3D which was .148.

All three of Coach D's half-time sessions were very direct, but the second session was more direct than either session one or three.

(3) It was apparent that in tape 1D the coach talked 82% of the time; the players talked 17.2% of the time, and there was silence or confusion .8% of the time. This was the lowest amount of silence or confusion in the 21 individual tapes.

In tape 2D, the coach talk used up 92% of the half-time session; player talk accounted for 4.4% of the time, and there was silence or confusion 10% of the time. When tapes 1D and 2D were compared, tape 1D had 12.8% more player talk, but tape 2D had 10% more coach talk, and 2.8% more silence or confusion.
The coach talked 83.5% of the time in tape 3D. The players talked 14% of the time and there was silence or confusion 2.5% of the time. When tapes 1D and 3D were compared, tape 3D had only 1.5% more coach talk, and 1.7% more silence or confusion, but tape 1D had 3.2% more player talk.

When tapes 2D and 3D were compared, tape 2D had 8.5% more coach talk and 1.1% more silence or confusion, and tape 3D had 9.6% more player talk.

These results showed a large decrease in the amount of player talk in the second session, and a large decrease in the amount of coach talk.

(4) The Content Cross ratio (CCR) for tape 1D revealed 65.6% of the tallies in that area. Tape 2D had 58.4% of the tallies in the content cross, and that was the lowest CCR of the 21 individual tapes. Tape 3D had 81% of the tallies in the content cross.

All three CCR's were above Flanders' predicted average of 55% (8), but tape 2D was only 3.4% above it.

This indicated the main emphasis of the three taping sessions was placed on subject matter, and this emphasis was greatest in the first and third sessions. The CCR of tape 2D was 22.6% below tape 3D, and 8.2% below tape 1D.

(5) The Teacher Question ratio (TQR) for Coach D steadily decreased as the half-time score changed. In tape 1D, the TQR was 11.48%, which was the highest of the 21 individual tapes, and was 6.22% higher than tape 2D's TQR of 5.26%. In tape 3D the TQR decreased still more to 2.47%. This figure was 23.53% below the average TQR predicted by Flanders (8).

When tapes 1D and 3D were compared, it was evident that Coach D used 9.01% fewer questions while guiding the more content oriented part of the half-time session in tape 3D.
(6) The Teacher Response ratio (TRR) for Coach D steadily increased as the season progressed. In tape 1D, the TRR was 2.27%. This was the lowest TRR of the 21 individual tapes, and was 8.37% lower than tape 2D's TRR of 10.64%.

In tape 3D the TRR was 55%, an increase of 44.36%, and resulted in a TRR which was 13% above Flanders' predicted average (8). This showed that as the season progressed, Coach D increased his responses to the ideas and feelings of his players. In the third session, these responses were even above Flanders' predicted average TRR (8).

(7) When tapes 1D, 2D and 3D were analyzed, it was found that the Pupil Initiation ratio (PIR) for each was 100%, which meant that every player response recorded was self-initiated.

(8) When the Instantaneous Teacher Response ratio (TRR89) was analyzed for tape 1D, a figure of 48.4% was found. Flanders predicted the average TRR89 for all kinds of classes to be around 60% (8). The TRR89 for tape 1D was 11.52% below this figure. Tape 2D's TRR89 of 19.23% was also well below this average, and was a 29.25% decrease from tape 1D. This indicated a large decrease in the number of times the coach used categories (1) feelings, (2) praise, and (3) players' ideas the instant the players stopped talking.

In tape 3D the TRR89 was 75.68%, 15.68% above the Flanders' predicted average, and showed an increase in the use of categories 1, 2 and 3 the instant the players stopped talking (8).

When tapes 1D and 3D were compared, there was a difference of 27.20%. When tapes 2D and 3D were compared, there was a difference of 56.45%.

In conclusion, there was a large difference in the TRR89 of session 2 as the half-time score varied because it fell far below the TRR89's of
tapes 1D and 3D.

(9) The Steady State ratio (SSR) for tape 1D was 52.3\%, 12.3\% lower than tape 2D's SSR of 64.6\%. When the SSR of tape 3D, 59.5\% was compared to tape 1D, tape 3D was only .72\% higher. When tapes 2D and 3D were compared, tape 3D was again .51\% higher.

These results revealed Coach D's tendency to remain in the same category for longer than the three seconds average predicted by Flanders (8). The greatest difference in the SSR's occurred in tape 2D.

(10) The i/d ratio for tape 1D was .294, and .119 for tape 2D. This showed a .175 more direct approach to motivation and discipline problems in tape 2D.

The i/d ratio for tape 3D was 1.22, which was a very indirect approach as compared to tapes 1D and 2D.

This indicated that in the first two sessions, Coach D was very direct in his approach to motivation and discipline problems, then in the third session he switched to a very indirect approach.

(11) In the three sessions taped for Coach D, no instances were found where players were allowed to extend their answers to directed questions, hence the absence of tallies in the 8-9 cell.

In summary, as the half-time score changed, so did several aspects of Coach D's verbal behavior. These changes were most notable in the player talk, coach talk percentages, which increased in session two then decreased in session three, and the CCR, TRR89, TQR, and i/d ratios which all decreased in session two, and increased in session three.

Coach F: In the first taping session, Coach F was behind at half-time. During session two and three he was ahead.
(1) The primary pattern for tape 1F and 2F was a 5-6-5 pattern, which meant that the coach started by lecturing, then switched to giving directions, which were followed by more lecture. In tape 3F, the primary pattern changed to a 5-9-5 pattern which was lecture, followed by a divergent student response, which was then responded to with more lecture.

A switch to player participation in tape 3F, from no player participation in tapes 1F and 2F was the only difference noted in a comparison of the three tapes.

(2) The I/D ratio for tape 1F was .171, .026 more indirect than tape 2F's I/D ratio of .145.

The I/D ratio for tape 3F was .208, .037 more indirect than tape 1F and .063 more indirect than tape 2F.

These results showed that Coach F's half-time presentations were very direct in all three taping sessions.

(3) In tape 1F, Coach F talked 76.6% of the time, his players talked 22.4% of the time and there was silence or confusion 1.0% of the time. The percentage of player talk in tape 1F was the highest of all 21 individual tapes.

In tape 2F, Coach F talked 87.2% of the time; the players talked 11.9% of the time and there was silence or confusion 9% of the time. When tapes 1F and 2F were compared, tape 2F had 10.6% more coach talk, and tape 1F and 10.5% more player talk and .1% more silence or confusion.

In tape 3F, Coach F talked 60.4% of the time; the players talked 19.8% of the time, and there was silence or confusion 19.80% of the time. In tape 3F the coach talk was the lowest of the 21 individual tapes and the silence or confusion was the highest of the 21 individual tapes.
When tapes 1F and 3F were compared, tape 1F had 16.2% more coach talk, 3.6% more player talk, but tape 3F had 18.8% more silence or confusion.

When tapes 2F and 3F were compared, tape 3F had 7.9% more player talk, 18.9% more silence or confusion and tape 2F had 26.8% more coach talk.

These figures indicated some large changes in Coach F's verbal behavior. The first and third sessions are similar in coach and player talk percentages, but in the third session coach talk dropped off, and player talk increased greatly. Silence or confusion also increased considerably in session 3F.

(4) The Content Cross ratio (CCR) in tape 1F held 72% of the tallies, and in tape 2F, 68.8% of the tallies. In comparison of tapes 1F and 2F, 1F had 3.2% more tallies in the content cross.

The CCR for tape 3F was 59.4% which was a large decrease from 1F's 12.6%, and 2F's 9.4%.

This meant the emphasis placed on subject matter by Coach F in the third session was at least 9.4% below that of the first two sessions, but still 4.4% above Flanders' predicted average CCR of 55% (8).

(5) In tape 1F the Teacher Question ratio (TQR) was 8.33%. Flanders predicted that the average TRR would be close to 26% (8), and tape 1F was 17.67% below that figure. The TQR for tape 2F, 8.47% was 7.53% below his figure and only 0.14% higher than tape 1F.

The TQR for tape 3F was 6.52% which was 19.48% below Flanders' predicted average, and indicated a reduction in the use of questions in tape 3F from tapes 1F and 2F when he guided the more content oriented part of the half-time session.
In tape 1F the Teacher Response ratio (TRR) was 31.82%. This figure dropped to 19.44% in tape 2F which was a difference of 12.37%, and showed a reduction in the number of responses to players ideas and feelings in the second session.

In tape 3F, the TRR returned to 58.33%. This was 16.33% above the 42% average TRR predicted by Flanders (8).

When tapes 1F and 3F were compared, tape 3F was 26.51% higher. When tapes 2F and 3F were compared, tape 3F was again higher, by 38.89%.

These results showed the responses of Coach F to his player ideas and feelings to below Flanders' predicted average in the first two sessions, especially in the second one, then to be above his figure in the third session (8).

The Pupil Initiation ratio (PIR) for tape 1F was 87.50%. For tape 2F the PIR was 61.54% and for tape 3F it was 94.74%. Flanders predicted that the average PIR would be close to 34% (8). All three tapes were far above this figure and showed a high degree of self-initiated player responses. Tapes 1F and 3F were only 7.24% apart, but tape 2F was 33.20% lower than tape 3F, and 25.96% lower than tape 1F.

This showed a fewer number of player initiated responses in tape 2F than tape 3F or 1F, but all three tapes were above Flanders predicted average PIR (8).

In tape 1F the Instantaneous Teacher Response ratio (TRR89) was 67.39%, 26.57% higher than tape 2F's TRR89 of 40.82%.

In tape 3F the TRR89 was 83.87%. This was the highest TRR89 of the 21 individual tapes.
The average TRR89 predicted by Flanders was 60% (8). Tape 1F was 7.39% above this figure and tape 3F was 23.93% above it. The TRR89 for tape 2F was 19.18% below Flanders' predicted average (8).

It was concluded from these results that in sessions one and three the instant the players stopped talking, Coach F used categories of feelings, praise, or players' ideas an above-Flanders' predicted average number of times, especially in the final taping session (8). In the second session these categories were used a below average number of times, according to Flanders' predictions (8).

(9) The Steady State ratio (SSR) for Coach F remained fairly consistent during the three taping sessions. Flanders predicted the average SSR to be 50.0% (8), and in tape 1F the SSR was 50.5%, .5% above that figure. In tape 2F the SSR was 56%, and was 6% above that average. The SSR for tape 3F was 59.4%, which was 9.4% over Flanders predicted (8) average, and slightly higher than tapes 1F and 2F.

This showed that though Coach F's tendency was to remain in individual categories for periods longer than three seconds, he was close to Flandes' predicted average (8). The rate of interchange between coach and players was close to the predicted average (8).

(10) In tape 1F the i/d ratio was .467 and .241 in tape 2F which was .226 more direct than tape 1F. These figures indicated that Coach F had a very direct approach to motivation and discipline.

In tape 3F the i/d ratio switched to the most indirect figure of the 21 individual tapes, a 1.4.

This showed a very large shift in Coach F's i/d ratio from a very direct first two tapes to an indirect third tape.
In tapes IF, 2F and 3F no instances were found in which players were allowed to extend their answers to directed questions, so there were no tallies in the 8-9 cell.

In conclusion, there were several changes in Coach F's verbal behavior, specifically the coach talk percentages, which were the lowest of the 21 individual tapes, the CCR which steadily decreased as the season progressed, and the TRR which increased noticeably in tape 3F. There were also some noticeable changes in the TRR89 which increased in tape 3F to the highest of the 21 individual tapes and in the i/d ratio which also changed to the most indirect ratio of the 21 individual tapes in session three.

Coach G: In the first taping session Coach G was ahead at half-time and in the second and third sessions he was behind at half-time.

(1) In tapes 1G and 2G the primary patterns of Coach G were a 5-6-5 pattern, which was lecture being followed by directions which were succeeded by more lecture. In tape 3G the only change in the primary pattern was a switch from directions in patterns one and two, to criticism or justification of authority in tape 3G, a 5-7-5 pattern. This was not a great change and all these patterns excluded player talk.

(2) The I/D ratio for tape 1G was .050, .025 more direct than tape 2G's I/D ratio of .075.

The I/D ratio for tape 3G was .099, which was .049 more indirect than tape 1G and .024 more indirect than tape 2G.

These figures showed all three of Coach G's half-time presentations to be extremely direct. From the first to the third, the presentations became slightly more indirect.
(3) In tape 1G, Coach G talked 88.7% of the time; his players talked 7.0% of the time, and there was silence or confusion 4.3% of the time.

In tape 2G, coach talk accounted for 91.1% of the half-time discussion; player talk accounted for 5.1% of the time and there was silence or confusion 3.8% of the time. When these tapes were compared, the differences were minimal, 2.4% less coach talk, 1.9% more player talk, and .5% more silence or confusion in tape 1G than 2G.

In tape 3G, Coach G talked 90.7% of the time; the players talked 8.1% of the time, and there was silence or confusion 1.2% of the time. When tapes 1G and 3G, and tapes 2G and 3G were compared, the differences were again minimal.

The percentages in all three tapes showed a consistent pattern of a majority of coach talk, and a minority of both player talk and silence or confusion in the half-time taping sessions.

(4) The Content Cross ratio (CCR) contained 91.5% of the tallies in tape 1G. In tape 2G the CCR was 91.1% and the CCR for tape 3G was 93.9%.

These results showed a very consistent CCR as the season progressed. The difference between tapes 1G and 2G was only .4%. The difference between tapes 2G and 3G was only 1.9%. All three tapes were far above Flanders' predicted average CCR and indicated that a high degree of emphasis was placed on subject matter during the half-times sessions (8).

(5) The Teacher Question ratio (TQR) for tape 1G was 3.45%, 1.31% lower than tape 2G's TQR of 4.76%.

The TQR for tape 3G was 4.23% which was .78% higher than tape 1G and .53% lower than tape 2G.
These results showed all three tapes to be at least 21.24% below Flanders' predicted average TQR of 26.0% (8), which meant Coach G used very few questions while he guided the more content oriented part of the half-time session. As the half-time score changed, the coach used more questions, but the number stayed far below this average. That increase was most notable in session two.

(6) The Teacher Response ratio (TRR) for tape IG was 20%. Flanders predicted the average TRR to be close to 42.%, and tape IG was 22.% below this average (8). The TRR for tape 2G was 22.22%, only .22% higher than tape IG and still 19.98% below Flanders' predicted average (8). This meant that in the first two sessions, Coach G's responses to his players' ideas and feelings were below Flanders' predicted average (8).

In tape 3G the TRR was 70%, which was a very substantial difference from the TRR's of tapes IG and 2G, and showed that the coach increased his number of responses to his players' ideas and feelings to 28% above Flanders' predicted average (8). This was the largest TRR of the 21 individual tapes.

The discrepancy between the first two TRR's and the third is very large and showed a large change as the half-time score changed.

(7) The Pupil Initiation ration (PIR) for tape IG was 60%. In tape 2G the PIR could not be calculated because there were no tallies in category nine, which meant there were no player initiated responses.

In tape 3G the PIR was 57.14%, only 2.86% below tape IG. In the first and third half-time sessions, the initiated responses by the players were at least 23.14% above Flanders' predicted average (8).

There was a large change in the PIR of the second tape, which was "0", because there were no tallies in category nine.
The Instantaneous Teacher Response ratio (TRR89) for tape 1G was 60%. This was what Flanders predicted the average TRR89 to be (8). In tape 2G the TRR89 dropped down to 46.15% then went back up to 78.57% in the third session.

This fluctuation showed that Coach G's tendency to use categories (a) feeling, (b) praise, or (c) using players' ideas the instant the players stopped talking, was closest to Flanders' predicted average in tape 1G, then these responses fell 13.85% below this predicted average in the second tape, then rose to 18.57% above his figure in the third session (8).

The Steady State ratio (SSR) in tape 1G was 71.8%, 3.4% above tape 2G's SSR of 68.4%.

The SSR for tape 3G was 68.6% which was 3.2% lower than tape 1G and only .2% higher than tape 2G.

These results indicated a fairly consistent SSR over the three taping sessions. Flanders' predicted average SSR was 50% (8). All three of Coach G's SSR's were at least 18.4% above this, which revealed his tendency to remain in individual categories for periods of time longer than three seconds. This was above the predicted average so the interchange between the coach and his players was not very rapid.

The i/d ratio for tape 1G was .250, and for tape 2G was .286. These two tapes showed an extremely direct approach to Coach G's problem of motivation and discipline.

In tape 3G the i/d ratio jumped to an indirect 1.333 which was 1.083 more indirect than tape 1G and 1.147 more indirect than tape 2G.

There was a large variation of ratios between tapes one, two, and three and indicated that Coach G had become much more indirect in the third
taping session.

(11) In tapes 1G, 2G, and 3G, there was only one tally in the three 8-9 cells. This meant there was only one instance in which the players were allowed to extend their answers to directed questions.

In conclusion, there were several outstanding changes in Coach G's verbal behavior. The TRR became much higher in session three, as did the i/d ratio. In the second session, the PIR dropped to "0" and the TRR89 also dropped noticeably in the second session.

In general, it could be stated that the four coaches analyzed in this hypothesis became more indirect or open when ahead at half-time, but there were many inconsistencies in this pattern. These were most notable in the presentations of Coaches F and G, but also appeared in parts of Coach C and D's presentations. There was one outstanding result in all four coaches' taped sessions and it was how their verbal behavior changed as the half-time score changed. As such, hypothesis two was rejected.

Hypothesis Three: The coaches, as a group, will exhibit the primary interaction pattern used by physical education teachers in other studies, a 5-0-6-10-6 pattern.

Two very closely-related primary patterns were evident in analyzing the total coaches' combined matrix. One was a 5-6-5 pattern which was defined as lecture succeeded by directions, followed by more lecture. The other was a 5-7-5 pattern which was lecture, followed by criticism or justification of authority, then more lecture.

From these results, hypothesis three was rejected. It was pointed out, though, that the only difference between the 5-10-6-10-5 pattern of other physical education studies and the 5-6-5 pattern of this study was the
silence or confusion that preceded and followed the directions given to the players. One other interesting point was that these primary patterns excluded all forms of player talk.

Hypothesis Four: The coaches as, as a group, will be more direct than the physical education teachers from other physical education studies, as determined by the I/D ratio.

The I/D ratio of the elementary physical education teachers was .200 (15), and the Total Coaches' I/D ratio was .098. When these two I/D ratios were compared, the coaches' I/D ratio was .102 more direct than that of the elementary physical education teachers. The I/D ratio for high school male physical education teachers was .122(21), and a comparison with the total coaches' I/D ratio of .098 indicated that the coaches were .024 more direct.

These results showed that the coaches were more direct than either the elementary or high school male physical education teachers, consequently hypothesis four was accepted.

Hypothesis Five: The coaches, as a group, will be more direct, with the content cross held constant, than the physical education teachers from other physical education studies as determined by the i/d ratio.

The i/d ratio for elementary physical education teachers was .233 and the total coaches' i/d ratio was .293. These results were very close, but the elementary physical education teachers were .060 more direct in their i/d ratio.

The i/d ratio for high school male physical education teachers was .281 and the total coaches i/d ratio was .293. This meant that the high school male physical education teachers were .012 more direct than the
combined coaches.

When the coaches' i/d ratio was compared to that of the elementary physical education teachers, the latter were more direct in their approach to motivation and discipline problems so hypothesis five was rejected.

When the coaches' i/d ratios were compared to that of the high school male physical education teachers, the coaches were more indirect in their approach to motivation and discipline problems and so hypothesis five was again rejected.
TABLE XIX
TOTAL COACHES' MATRIX

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CHAPTER IV
SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Summary

The purpose of this study was to examine the verbal behavior of selected basketball coaches during half-time sessions. The coaches involved were selected from high schools in the Missoula, Montana, area. There was difficulty in obtaining subjects for this study because of the means of data collection, so random sampling techniques were not used to choose the participating coaches. The final number of coaches participating in this study was seven.

After a coach had consented to participate in the study, a date was set upon which procedures for taping were discussed, and the taping schedule was set up. The day before a game was to be taped, the coach was phoned and reminded of the appointment. Any special preparations such as how to enter the locker room, where to sit in the locker room, and when to set up in the locker room before a session, were discussed at this time. At the gymnasium on the day of the game, the researcher labeled the tapes, checked the tape recorder and one minute before half-time went to the locker room. Following the half-time session the coach was thanked and the half-time score was recorded. An assistant was hired since several of the teams were scheduled to play at the same time on the same days, making it impossible for one person to collect all the necessary data. The assistant followed the same procedures as described above.
Following the completion of all observation sessions, the recorded tapes were sent to Mr. Elmer Armstrong in Helena, Montana, for initial procedures. Mr. Armstrong recorded on a tally sheet (Table II) every three seconds, or every time there was a change, the interaction category that was used by the coach or players. From this tally sheet, a computer program was set up, and the results shown in a completed ten by ten matrix (Table IV). The computer program also calculated several percentages such as Coach Talk, Player Talk, and Silence or Confusion. There were 21 individual matrices printed for this study.

A method of analysis was devised to consistently analyze the large amount of data and to compare the different matrices of each coach. This plan is outlined below according to the analysis made:

1. Primary Interaction Pattern
2. I/D Ratio
3. Coach Talk, Player Talk, Silence or Confusion Percentages
4. Content Cross Ratio
5. Teacher Question Ratio
6. Teacher Response Ratio
7. Pupil Initiation Ratio
8. Instantaneous Teacher Response
9. Steady State Ratio
10. i/d Ratio
11. 8-9 Cell
12. Concluding Statements

This method of analysis was the basis for the examination of Hypothesis one and two. Hypothesis three, four and five were examined
by means of direct comparison of the Primary Patterns, I/D and i/d ratios of the Total Coach Matrix and the elementary and high school male physical education teachers' Total Matrix.

The following hypotheses were tested in this study:

1. The coach's verbal behavior will not change as the win-loss record changes.

2. The coach's verbal behavior will not change with different half-time scores.

3. The coaches, as a group, will exhibit the primary interaction pattern used by physical education teachers in other studies as determined by the I/D ratio.

4. The coaches, as a group, will be more direct than the physical education teachers from other studies as determined by the I/D ratio.

5. The coaches, as a group, will be more direct, with the content cross held constant, than the physical education teachers from other studies as determined by the i/d ratio.

Conclusions

1. After analyzing each of the three individual matrices of the seven coaches, many changes were found in their verbal behavior. As such, hypothesis one, "the coach's verbal behavior will not change as the win-loss record changes" is rejected.
In analyzing the matrices of the four individual coaches whose half-time lead varied over the three taping sessions, several changes in their verbal behavior were noted. Keeping this result in mind, hypothesis two, "the coach's verbal behavior will not change with different half-time scores", was rejected.

3. The coaches, as a group, did not exhibit the same primary pattern as was used by physical educators in other physical education studies; they used a more direct approach in their half-time presentations.

4. The coaches, as a group, were more direct than physical education teachers from other physical education studies as determined by the I/D ratio.

5. The coaches, as a group, were more indirect in their approach to motivation and discipline problems than elementary physical education teachers from other physical education studies, as determined in the i/d ratio.

The coaches, as a group, were also more indirect in their approach to motivation and discipline problems than the secondary physical education teachers from other physical education studies, as determined by the i/d ratio.

Discussion

The purpose of this study was to describe the verbal behavior of basketball coaches during game half-time sessions. The results were not used to make qualitative judgments about coaches. There were several other factors which were kept in mind while interpreting these findings. First, these results represented only three taping sessions from each coach's entire season. If every half-time session of each coach had been
taped, some very different results may have been discovered, giving an entirely different picture of the coach's verbal behavior. Secondly, the ratios developed by Flanders to analyze verbal behavior were found via academic classroom teachers (8). They were taken usually over twenty-minute periods of time out of the teacher's average presentation. The coaches in this study were observed in a 10-minute half-time session in which they endeavored to put across their desired material as rapidly as possible. This fact may have had a strong influence on all the coaches' ratios, especially the coach-talk, player-talk percentages, the TRR, TRR89, and TQR. The fact that the coach was pushed for time may have caused his verbal behavior in certain ratios to fluctuate from Flanders' average.

When the coaches of this study were compared with physical education teachers of other studies, the coaches showed a primary interaction pattern which took much less time to complete (a 5-6-5- and a 5-7-5 pattern) than the 5-10-6-10-5 pattern of the physical education teachers, and an overall more direct presentation. It might be asked whether or not this change was caused, or at least affected by the time limite placed on the coaches.

The coaches in this study appeared to feel the direct approach was the most efficient way of getting their material across to their players in the time allotted. This was evidenced by the very low total I/D ratios, consistently low individual I/D ratios, and very low TQR's and TRR's which showed the coache's tendency to respond to the ideas and feelings of his players; the extremely low TQR's showed how few times the coach used questions to guide the more content oriented part of the half-time sessions. The lack of tallies in the 21 individual 8-9 cells could also have been connected to this time factor, as tallies in the 8-9 ce-1s would have indicated players continuing with a response to a directed question.
One other characteristic exhibited by all seven coaches was the "V syndrome". This pattern became most apparent when the results of the tapes of the four coaches whose win-loss record progressed were combined, and the results of the tapes of the three coaches whose win-loss record regressed were combined. Of the first combined coaches' matrix, only three of the eleven comparisons failed to fit the "V syndrome" regardless of record as the season progressed. There were more inconsistencies in the other combined coaches' matrix, but five of the eight calculated ratios did fit the "V syndrome". This pattern was evident when the pattern and talk of each coach was analyzed individually.

There were probably many hidden factors that cause the "V syndrome" and most of them probably were unique to the individual coach. It was found that five of the seven coaches had the majority of their losses in the second session. This was also the point at which the "V syndrome" went to the direct portion of the pattern. There were several instances where this pattern appeared when the coaches were not losing games and their win-loss records were not changing. A possibility was that the coaches felt more pressure towards the middle of the season, then began to relax closer to the end. Perhaps the coaches felt they must be more direct as tournaments, end of the season, etc., entered into consideration and rekindled the players' interest and enthusiasm. Possibly those factors were not related to the "V syndrome" at all and through further research this question may be answered.

When looking at two other changes in the coaches' verbal behavior, there were several influential factors that may not have been apparent in the previous section. These involved such things as the identity of a particular opponent, the importance of the game in relation to pre-season
and regular season standings, their teams' showing in the previous game, the degree of rivalry, and many others too numerous to list. With these other factors still in mind, some very interesting results were apparent.

First, the four coaches whose win-loss record progressed as the season progressed all had the majority of their losses between the first and second taping sessions. Second, in the combined matrices for these four coaches, the greatest changes in the eleven calculated ratios and percentages occurred in the second session. Third, in session two, of the eleven categories analyzed, nine had either the highest or lowest percentages recorded of the six combined matrices. It cannot be determined whether or not this change in the coaches' verbal behavior was a direct result of the change in the win-loss record. Patterns did appear, and those patterns indicated that two records, half-time score and win-loss record, did have some influential affect on the coaches' verbal behavior. The extent of this affect could only be determined accurately by the coach alone. His individual personality and constant contact with his players were probably the two most important influences one might need to consider to determine the cause of his verbal behavior changes.

In summary, this was a pioneer study in the field of coaches' verbal behavior involving changes in that behavior, under stress of basketball games at half-time sessions. There were some distinct variations found by a comparison of coaches' verbal behavior to that of physical education teachers, but these results need to be substantiated by further research.

**Recommendations**

The following recommendations are suggested as possible avenues for further research:
1. Compare in each game the verbal behavior of one coach over an entire season.

2. Compare the responses of players of successful coaches to those of unsuccessful coaches, as determined by the Teacher Response Ratio, Instantaneous Teacher Response Ratio, and Teacher Question Ratio.

3. Compare the verbal behavior of basketball coaches to that of football coaches during half-time sessions.
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SUPPLEMENTARY REFERENCES


