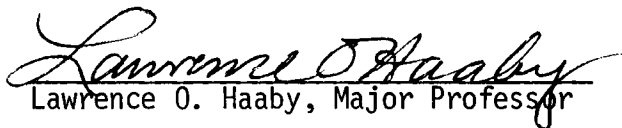
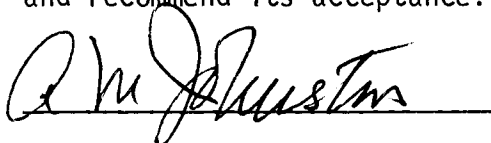


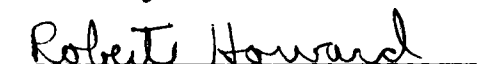
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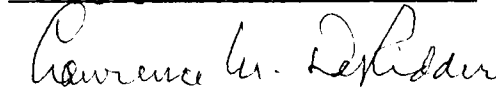
I am submitting herewith a dissertation written by Marvin A. Camfield entitled "Teaching Style and Classroom Seating Arrangements in East Tennessee Middle Schools." I recommend that it be accepted in partial fulfillment of the requirements for the degree of Doctor of Education, with a major in Curriculum and Instruction.


Lawrence O. Haaby, Major Professor

We have read this dissertation
and recommend its acceptance:







Accepted for the Council:


Vice Chancellor
Graduate Studies and Research

TEACHING STYLE AND CLASSROOM SEATING ARRANGEMENTS
IN EAST TENNESSEE MIDDLE SCHOOLS

A Dissertation
Presented for the
Doctor of Education
Degree
The University of Tennessee, Knoxville

Marvin A. Camfield

June 1980

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DEDICATION

The author would like to dedicate this dissertation to his father, Cecil R. Camfield. Without his insistence that the author take education courses early in his career, none of this would have been possible.

ACKNOWLEDGMENTS

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ABSTRACT

The purpose of this study was to identify relationships of teaching style to seating arrangements in a selected sample of East Tennessee middle schools.

Teaching styles studied were the four identified by Joyce and Weil (1972). Seating arrangements studied were rows and files, circle, horseshoe shaped, small groups, and individual separation from the class. The frequency of the use of seating charts, the number of seating pattern changes, and the use of seating pattern changes for the reasons of personal need, discipline, and academic ability were also measured.

Teaching style was measured by the Teaching Style Questionnaire developed by Heikkinen (1977). An original instrument, the Classroom Seating Arrangement Questionnaire, was developed by the author to measure teachers' use of seating arrangements and their rationale for such use.

The sample population consisted of 30 selected East Tennessee middle schools. The principals of these schools were requested to systematically distribute the instrument to ten teachers. Of the 300 questionnaires distributed, 189 were returned.

Using frequency counts and chi square statistical procedures, it was found that:

1. Information Processing style teachers were the largest group (67), followed by Social Interaction style (54), Behavior Modification (19), and Personal Sources (2). Forty-seven teachers were not identifiable.

2. Most teachers did not change seating patterns frequently on a daily or weekly basis, but did change seating patterns on a monthly basis.

3. Most teachers used a seating chart to take roll either daily or not at all.

4. Most teachers permitted students to sit where the students preferred but 22 percent never permitted students a choice of seats.

5. Most teachers assigned seats on at least a yearly basis. Only 15 percent never assigned seats.

6. Most teachers assigned seats for the reason of personal needs, rather than for the reasons of disciplinary action or academic ability.

7. When seating arrangements were examined on a daily basis, the use of rows and files was the most common, followed by small groups, a horseshoe shape, and the circle.

8. Most of the sample rarely used one small group or individual isolation techniques.

9. Of the 13 hypotheses tested none were significant at the .05 level. However, there were a large number of Information Processing style teachers who used the seating pattern of rows and files on a daily to weekly basis. Information Processing style teachers also used seating charts more than any other group.

In summary, the actual distribution of teaching styles and the frequency of various seating arrangements were measured in a large sample of East Tennessee middle schools. The relationships between teaching style and classroom seating patterns were examined. It was found that teaching style does influence classroom seating patterns but not at the .05 level of significance.

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CHAPTER I

INTRODUCTION

A teacher enters a classroom, takes roll, has the Pledge of Allegiance, and begins the day's activities. The interactions that occur during the time both the teacher and students are in class are what most individuals envision as teaching. There are numerous variables that influence teacher-student interactions: the age of the students, the subject matter, the presentation of material, and the physical environment.

Teaching situations often are complex and diverse. To provide for this diversity, social institutions have created separate divisions of education. Traditionally, these divisions have been labeled primary, secondary, and post-secondary education. Subdivisions within this general framework have been individual grades, high schools, junior high schools, and middle schools.

Middle schools are a recent educational phenomenon. "The current concept of the middle school began developing in the late 1950's." (Kindred, et al., 1976, p. 2). By 1973 the number of schools classifying themselves as middle schools was 1,906 (Raymer, 1974). Raymer found that 1,092 of that number housed grades six through eight.

It is not just the change in grade levels that distinguishes middle schools from junior high schools. Many middle schools are housed in new buildings. These new structures have given educators

an opportunity to make innovative changes in building design and teaching techniques.

It may seem logical that educational research on middle school educational changes would be plentiful. Unfortunately, a survey of literature in the area of middle schools reveals few research studies (Farinhold, 1977). In addition, Wiles and Thomason state, "Existing research on middle schools is of remarkably low quality." (1975, p. 421).

Authors writing on the middle school from 1966 (Eichhorn) to 1976 (Kindred, et al.) have stressed that the physical environment should reflect the philosophy of the middle school. Eichhorn (1966, p. 95) states: "Classrooms need to be adaptable in order to provide for varying class sizes, group activities, and to offer opportunities for varied experiences." Kindred, et al., writing ten years later expresses a similar concern (1976, p. 8), "Flexibility in the use of space, furniture, and equipment leads to more informal teaching and learning situations."

The expression of a philosophy of openness and flexibility by middle schools should be seen in the teaching styles exhibited by middle school teachers. Openness and flexibility also should be seen in the way middle school teachers seat their students. This research seeks to examine the variables of teaching style and classroom seating arrangements in East Tennessee middle schools so that relevant information may be gathered for the educational community.

I. PURPOSE OF THE STUDY

The purpose of this study was to identify relationships of teaching style to seating arrangements in a selected sample of East Tennessee middle schools. Teaching styles studied were the four identified by Heikkinen (1977) which are Information Processing, Social Interaction, Personal Sources, and Behavior Modification. Seating arrangements studied were rows and files, circle, horseshoe shaped, small groups, and individual separation from the class. Also studied were the number of times seating charts were used to take roll, the number of times classroom seating patterns were changed, and the number of times students were assigned seats for the reasons of personal need, discipline, and academic ability.

The teaching style issues and classroom seating situations examined were:

1. The number of teachers who possessed each of the four styles of teaching as measured by Heikkinen's (1977) teaching style sorting questionnaire.
2. The number of times teachers changed seating patterns on a daily, weekly, yearly, or never used basis.
3. The number of times seating charts were used to take roll.
4. The number of times straight rows and files were used as a seating arrangement.
5. The number of times a large circle of all the students was used as a seating arrangement.

6. The number of times a horseshoe shaped seating arrangement was used by the teachers.
7. The number of times the whole class was formed into small groups of four to eight students.
8. The number of times one small group of four to eight students was separated from the class.
9. The number of times one or two students were separated from the class.

II. HYPOTHESES

Hypotheses tested were as follows:

1. Information Processing style teachers will:
 - A. Use a seating chart to take roll more frequently than the other styles.
 - B. Change the seating pattern of their classes less frequently than the other styles.
 - C. Use the seating arrangement of rows and files more frequently than the other styles.
 - D. Assign students to seats according to ability more than any other style.
 - E. Assign students seats according to ability more often than all styles, except Personal Sources.
2. Social Interaction style teachers will:
 - A. Divide the total class into small groups more than the other styles.

- B. Use one small group of students separated from the class more often than the other styles except Personal Sources.
 - C. Allow students to sit where they choose more than the other styles.
3. Personal Sources style teachers will:
- A. Use a large circle and horseshoe shaped seating arrangement more often than the other styles.
 - B. Assign students to seats according to personal need more than the other styles.
 - C. Assign seats to students more often than all styles except Information Processing.
4. Behavior Modification style teachers will:
- A. Separate one or two students from the class more than any other style.
 - B. Assign students to seats for disciplinary reasons more than any other style.

III. IMPORTANCE OF THE STUDY

Bennett (1976) and Heikkinen (1977) have stressed the need for further quantitative research in the area of teaching style. This study provides information on the frequency of the various teaching styles in a limited population.

That the use of space appears to have significant communicative value has been studied by Hall (1959) and Hesler (1972). Studies by Sommer (1967), Adams and Biddle (1970), and Freeman (1977) have

examined the variable of space on teacher-pupil interaction. However, a review of the literature found no studies relating teaching style to the use of spatial environments or classroom seating arrangements.

The philosophical orientation of the middle school toward openness, change, and flexibility has been stressed by numerous authors: Overly, et al., (1972); Alexander, (1969); and Eichhorn, (1966). However, the authors may lack quantitative evidence to support their position.

Many reasons have been aforementioned for further research into the quantitative distribution of teaching styles. The examination of the relationship of teaching style to the use of classroom space, and also the philosophical orientations of the middle school teachers are important educational issues.

IV. ASSUMPTIONS OF THE STUDY

Assumptions are as follows:

1. The Teaching Style Questionnaire section of the instrument provides an acceptable measure of the styles of teaching established by Joyce and Weil (1972).
2. The changing of the Teaching Style Questionnaire section of the test instrument from a "Q Sort" response system to a Likert response system will not decrease its validity or reliability.
3. The classroom seating arrangement section of the instrument is adequate to record the necessary classroom seating arrangements.

V. LIMITATIONS OF THE STUDY

The population from which the sample was drawn included East Tennessee middle schools that were listed by the Tennessee State Board of Education in 1978.

The study was limited to 30 selected middle schools in the State of Tennessee.

The study was confined to an analysis of teaching style as measured by the Teaching Style Questionnaire designed by Heikkinen (1977).

The classroom seating arrangement items stated in the test instrument were the only environmental factors under consideration for this research.

The study was confined to the period beginning November 1, 1979 and ending March 15, 1980.

VI. DEFINITION OF TERMS

This study includes certain terms peculiar to the subject under consideration. The terms are identified as follows:

1. Teacher or Instructor - The person employed by the school system to present "an intentional, deliberate family of acts--logical and strategic--aimed at inducing learning" (Smith, p. 229, 1960).
2. Student - An individual attending classes for the purpose of instruction and who is required to attend on a regular basis.

3. Middle School - The grades so defined and regulated by a separate administrative system. "The middle school is usually composed of either the sixth, seventh, and eighth grades or the fifth, sixth, seventh, and eighth grades" (Hughes and Schultz, 1976, p. 84).
4. Teaching Style or Family of Teaching - The possession of an identifiable focus and frame of reference that centers on specific kinds of learning outcomes and favors certain ways of creating an educational environment (Joyce and Weil, 1972).
5. Social Interaction Family of Teaching - Those teachers who focus on the relationships of the individual to society and direct relationships with other people. "Priority was given to social relations and to the creation of a better society" (Heikkinen, 1977, p. 2).
6. Information-Processing Family of Teaching - "This family was concerned with how the students improved their information-processing abilities" (Heikkinen, 1977, p. 2). These teachers feel that structured activities are needed to produce specific instructional effects.
7. Personal Sources Family of Teaching - This group "often emphasizes such individual oriented constructs as personal psychology, emotional life, self-concept, self-image, and creativity" (Heikkinen, 1977, p. 2).
8. Behavior Modification Family of Teaching - These teachers follow the teachings of B. F. Skinner and emphasize changing

the external behavior of the student (Joyce and Weil, 1972).

Teachers are to establish behaviors and bring those behaviors under the control of the classroom environment.

9. Classroom Seating Pattern - The location and distribution of seating devices within a given classroom during the time the class is being held.
10. The Teaching Style Q-Sort (TSQS) - A questionnaire of 16 items designed to measure teaching style and to group teachers into one of the four families of teaching developed by Joyce and Weil (Heikkinen, 1977).
11. Spatial - The occupying of physical space by objects.
12. Proxemics - The concept of total object relationships to each other in the social and physical environment (Barker, 1969).

VII. METHODOLOGY

Sample Population

There were 52 middle schools listed by the Tennessee State Board of Education in 1978. Thirty-three of these schools selected are located in East Tennessee. Thirty of these schools were selected for the sample population. The principals of these 30 schools were contacted and their cooperation in the study solicited. The participating principals were requested to distribute copies of the inventory to ten teachers in their schools.

Instrumentation

The inventory used in this research was composed of two parts.

The Teaching Style Questionnaire section was developed by Heikkinen (1977) to measure the families of teaching developed by Joyce and Weil (1972). Content validity was established by classroom testing and factor analysis. Pearson product moment correlation and Kendall's tau correlation coefficients were used to test reliability and were significant at the .01 level (Heikkinen, 1977).

The classroom seating arrangement section of the questionnaire is descriptive in nature and must stand on construct validity and reliability.

The Pilot Study

Prior to the use of the test instrument, a pilot study was conducted. The instrument was given to two groups for feedback as to the appropriateness and validity (construct and content) of the cover letter, instructions, and questions. One group of 15 elementary classroom teachers from a school not included in the sample and one graduate class in Educational Research at The University of Tennessee were used for the pretest group.

Final Distribution

After the needed pretest adjustments to the questionnaire were completed, the instrument was sent to the selected schools for distribution to the teachers by the principals. The teachers were requested to respond to the questions on the instrument by marking on an attached anonymous computer form. The teachers mailed only the anonymous computer form to the researcher in an attached, postpaid envelope.

If none of the completed computer forms were received within two weeks of the mailing of the questionnaires to the principals, telephone calls were made to the principals requesting information as to the status of the instrument's distribution. After a time period of four months, it was assumed that all schools and teachers who wished to participate had completed the survey.

VIII. ORGANIZATION OF THE STUDY

Chapter I has presented the statement of the problem, the purpose of the study, hypotheses, the importance of the study, the definition of terms, and methodology.

Chapter II presents a review of the literature related to this study. This review includes a section on the middle school, a section on teaching style and a concluding section on spatial relationships.

Chapter III describes the procedures used in gathering the data.

Chapter IV presents the analysis of the data.

Chapter V concludes by summarizing the data, presenting the findings and implications, and suggesting areas for further research.

CHAPTER II

LITERATURE REVIEW

I. INTRODUCTION

Educational research has been conducted on teacher and student variables probably since education became a social function. Innovations in education are often difficult to test due to the years required before the final results can be obtained. Middle schools are no exception to this time requirement. Although middle schools have been in existence for numerous years, an extensive literature search using Educational Resources Information Center (ERIC), numerous literature reviews, and the card catalogs of both The University of Tennessee and George Peabody College revealed very few research studies on middle schools.

Studies on teaching style are plentiful. Philosophical studies of teaching style and methodology are numerous. The problem was to find an acceptable instrument to measure teaching style. An extensive search of the literature on education research in this area revealed only two instruments that measured teaching style.

Proxemics as a separate field of scientific inquiry is rather new (Lewin, 1961 and Hall, 1959). Scientific examination of proxemic relations in all areas is limited. Examinations of the influences of spatial relations in the classroom are also restricted in number.

The present study is limited to material from three areas of concentration: the middle school, teaching style, and proxemics. The literature review commences with a survey of the literature on middle schools, followed by a general review of the extensive literature on teaching style with special emphasis on attempts to measure teaching style, and concludes with an extensive review of the literature on proxemics.

II. THE MIDDLE SCHOOL

The term "Middle School" is English in its origin. It was first used approximately 1838 to refer to schools established by the Church of England for children of the middle classes (Moss, 1969). Some English "Modern Secondary" schools are also known as middle schools. The term is presently in use in England to refer to the American equivalent of a combination of the fifth, sixth, and seventh grades (Moss, 1969).

Middle schools in America vary in composition from grades four to nine and different combinations thereof (Sinks, et al., 1975). However, most supporters of the middle schools exclude the ninth grade. The following definition of Hughes and Schultz (1976, p. 84) is the one most often referred to as the grades included in middle schools: "The middle school is usually composed of either the sixth, seventh, and eighth grades or the fifth, sixth, seventh, and eighth grades."

Most American middle schools evolved from the American junior high school. The development of the American junior high school is well traced by Judith Murphy who has stated:

The first junior highs were organized early in the century for worthy reasons that almost immediately became irrelevant. In 1905, some two-thirds of all pupils quit school before grade 9, and thoughtful educators sought an institutional means to give children some rudiments of secondary education and a little vocational training. A practical answer seemed to be the creation of a new two- or three-year unit embracing the last year or two of grammar school plus the freshman year of high school, now rechristened "ninth grade." The original architects of the junior high conceived it as terminal education for some of the students enrolled, and as a helpful introduction to high school for those equipped and financially able to continue their education. (1965, p. 14)

Middle schools have developed as an alternative to the junior high school for various reasons. The primary reason cited by most authors is that middle schools can better meet the educational needs of the students by releasing them from the college oriented needs of ninth grade. Other reasons stated by numerous authors are:

1. The junior high school has frequently become a miniature senior high with complex departmentalization.
2. Changes have occurred in physical and social maturation of the students. Better medical care has improved physical health and mass communication media have increased the knowledge base of students.
3. Changes have occurred in educational ideals. "We find in education today a philosophy that is really a conglomerate of basic philosophies mixed with an emphasis on the development and nurturing of creativity" (Kindred, et al., 1976, p. 4).

4. Developments in learning theory have stressed participation, environmental factors, and the concept of readiness.

5. Middle schools are ideal for change and innovation because they have no traditional past to restrict them. New materials and teaching aids, i.e. computers, can easily be applied.

In addition to the previously stated items, individual authors have suggested criteria. McGlasson (1973) suggested that the middle school has been used as a tool for racial and cultural integration. McGlasson also stated that middle schools may have an advantage over junior high schools in many states where there are separate elementary and secondary school districts. In such states the junior high had created a confusing dual political responsibility. The elementary and secondary districts were unsure who had jurisdiction over the junior high schools whereas middle schools were clearly under the elementary school district's control.

Alexander, et al., (1969) stated that there may also be a bandwagon factor, "Undoubtedly word of a new middle school in a neighboring community or of some widely publicized middle school program does precipitate discussion of its possibilities in other communities" (p. 18).

Have the middle schools been successful in developing a system of instruction that differed from the junior high school's? The limited research on this question compared five schools of each type (Koslick, 1972). Koslick found no differences except that middle school teachers did elicit more verbal behaviors from their students.

There were no significant differences in the philosophical purpose or actual practices.

One factor often associated with middle schools is their different architectural designs. Sinks, et al., (1975) found that the number of middle schools in six midwest states had increased from 221 in 1971 to 646 in 1974. Of those 646 schools, 119 reported "to accommodate a new building" as a reason for establishing a middle school.

Structural changes may be a visible symbol of the philosophical orientation of the middle school. Eichhorn (1966, pp. 95-96) states:

Since middle school curricula emphasizes flexibility, individualized instruction, and independent study, the physical environment should reflect this philosophy. Classrooms need to be adaptable in order to provide for varying class sizes, group activities, and to offer opportunities for varied experiences. All physical facilities should provide functional arrangements in such a way that students may use the facilities with relative ease in a manner commensurate with educational pursuits.

This adaptability is stated as fact ten years later by Kindred, et al., (1976, p. 8).

Flexibility in the use of space, furniture, and equipment leads to more informal teaching and learning situations. The importance of the individual becomes more apparent in an open classroom where the personal freedom of the student is combined with the necessity for intelligent student decision making.

The design changes for the "ideal" middle school are reflected in many of the studies. The discussion of the need for openness and flexibility can be seen in the following statements:

Middle schools provide opportunities for innovation. Such innovations might include team teaching, individualized instruction, flexible scheduling, and some form of continuous progress. Flexible rearrangements of time, space, materials, and people give evidence to the value of the true middle school. (Kohurt, 1976, p. 6)

It is a place for social learning, formal and informal. Committees, individual pupils, and the class as a whole work together on problems. It is a studio where children paint, paste, cut and model. It is a room where children sing and listen to music. Also provided is a sufficient number of individual small group and large group work stations to accommodate all the pupils at any one time in a variety of activities. (Mills, 1973, p. 363)

Have the changes in design in open middle schools achieved their goal of innovation and change? Tyrrel, Johns and McNally (1975) conducted a study to attempt to discover whether combinations of open space architecture and middle school goals were improving education. They studied ten architecturally open middle schools.

In nine of the ten schools visited, little physical activity was allowed in the classroom. There were exceptions to this rule in each school but teachers who allowed greater movement and who developed activity oriented programs were a rare exception. The teachers who operated in this fashion felt that their peers would prefer that students be kept in their seats and quiet. (pp. 5-6)

This aforementioned study illustrates that another variable may be very important in the middle school situation--the teaching style of the teachers. 6)

III. TEACHING STYLE

There are many definitions of teaching. Smith defines teaching as a "system of actions intended to induce learning" (Smith, 1960, p. 229). Hyman presents teaching as "an intentional, deliberate family of acts-logical and strategic-aimed at inducing learning" (Hyman, 1974, p. 16). Teaching is a dynamic triad between the student, the teacher and the subject matter (Hyman, 1974).

Teaching involves teacher interaction with an individual and/or group and the subject matter. Teaching style is the manner in which

this interaction is accomplished and the selected emphasis of the teacher. Teaching style is the preferred act, what a teacher would do if he/she had the choice, and what the teacher does when the choice is given (Musston, 1972; Shumsky, 1968).

A teaching style is not the same as a teaching method or technique. Methods are the instruments of interaction, pedagogical tools. Several authors have developed lists of these techniques (Bagford, 1976; Kenworthy, 1973; Means, 1968). A teacher can be committed to a certain style and occasionally use methods that do not meet that teacher's approval. This may occur because of limitations of space, time, school regulations, and parent or student insistence. Because of these conflicts, teachers are sometimes forced away from their preferred teaching style. Gracey (1972) found that teachers who attempted to individualize teaching became so frustrated that they either moved into other work or left school altogether.

One way of analyzing social situations is the use of ideal types, models, or paradigms. The diverse and varied literature concerning teaching styles supports two ideal types on opposite poles of a continuum.

The first model is conservative and restrictive. The teachers in this group emphasize factual knowledge and strict discipline. Cheever of the Boston Latin Grammar School was an example (Rippa, 1976). The philosophical model of teaching is that the text and the teacher are pitchers of knowledge and the students are little glasses to be filled. Bennett (1976) calls this the formal style, Musston (1972)

the command style, Gracey (1972) the production, and Seperson and Joyce (1973) the deductive recitation style.

On the opposite end of the continuum is a model that is liberal and expansive in action. The teachers of this group emphasize the needs of the students and their total growth. Neill of Summerhill would be an example (Neill, 1964). The philosophical view is that students seek what they need for learning and the teacher will help them. Bennett (1976) labels this style as informal, Mosston (1972) the individual, Gracey (1972) the craftsman, and Seperson and Joyce (1973) the inquiry oriented style.

Another type of analysis of teaching style has been conducted by Joyce and Weil (1972). Rather than base their differentiations of teaching styles on a continuum from teacher to student centered, Joyce and Weil (1972) base their styles on philosophical orientation and expected educational outcomes. Their four families of teaching are:

1. Social Interaction: In this family "the relationships of a person to his society or his direct relationships with other people" (p. 8) were emphasized. Priority was given to social relations and to the creation of a better society.

2. Information-Processing: This family of models was concerned with how the students improved their information processing abilities. "By information-processing we mean the ways in which people handle stimuli from the environment, organize data, sense problems, generate concepts and solutions to problems, and employ verbal and nonverbal symbols" (p. 9).

3. Personal Sources: "The distinctive feature of this category is its emphasis on personal development as a source of educational ideas" (p. 10). This model often emphasizes such individual oriented constructs as personal psychology, emotional life, self-concept, self-image, and creativity.

4. Behavior Modification: This theory relied on "changing the external behavior of the student" (pp. 10-11) and described "him in terms of extremely visible behavior rather than underlying and unobservable behavior" (p. 11).

Joyce and Weil summarize their position in the following quote:

The personal, interactive, information processing, and behavior modification "families" of models focus on characteristic types of goals and means. The personal models emphasize personal relationships and see growth resulting from them. The interactive models depend on the energy of the group and the process of group interaction. The informational models depend on activities which carry content and skills. Behavior modification focuses on rewards and the control of activities (p. 25).

Few extensive surveys of the quantity of teaching styles have been attempted. Most material available on teaching style is philosophical. As Zahorik states, "What is needed is a detailed description of the behaviors and behavior patterns that comprise each method" (Zahorik, 1973, p. 144).

A study of the teaching styles of teachers in England was completed by Bennett (1976). In this study 468 teachers rated themselves on methods, classroom organization, curriculum, testing, discipline, and educational philosophy. Bennett surveyed the teacher's use of group or individual assignments, the amount of student movement

the teachers allowed, the amount of tests and homework given, and the types of motivation used.

Bennett and Jordan (1975, pp. 24-25) applied cluster analysis techniques to Bennett's population. They obtained 12 distinct types of teaching style. Their description of each type is included in the following quote. The number of teachers classified in each type is in parenthesis.

Type 1.

These teachers favour integration of subject matter and, unlike most other groups, allow pupil choice of work whether undertaken individually or in groups. Most teachers in this cluster allow pupils choice of seating; less than half curb movement and talk. Assessment in all its forms, tests, grading, and homework appears to be discouraged while intrinsic motivation is favoured (35).

Type 2.

These teachers also prefer integration of subject matter. Teacher control appears to be low, but there is less pupil choice of work. However, most of these teachers allow pupils choice of seating, and only one-third curb movement and talk. Few test or grade work (32).

Type 3.

This group favours class teaching and group work. Integration of subject matter is preferred and pupils are taken out of school. These teachers appear to be strict; most of them curb movement and talk and smack children who step out of line. The amount of testing is average, but grading and homework are below average (24).

Type 4.

These teachers prefer separate subject teaching, but a high proportion allow pupil choice of work both in groups and individual work. None seats pupils by ability. They test and grade more than average (33).

Type 5.

A mixture of separate subject and integrated subject teaching is characteristic of this group. The main teaching mode is pupils working in groups of their own choice on tasks set by the teacher. Teacher talk is lower than average.

Control is high with regard to movement, but not to talk. Most give tests every week and many give homework regularly. Stars are rarely used as rewards. Pupils are taken out of school regularly (26).

Type 6.

These teachers prefer to teach subjects separately, with emphasis on groups working on teacher-specified tasks. The amount of individual work is small. These teachers appear to be fairly low on control, and are below average on assessment and the use of extrinsic motivation (38).

Type 7.

This group teaches separate subjects, using class teaching together with individual work. Teacher control appears to be tight; few allow movement or choice of seating, and offenders are smacked. Assessment is, however, not used much (30).

Type 8.

This group of teachers has very similar characteristics to those in type 3, but they prefer to organize the work on an individual rather than a group basis. Freedom of movement is restricted and most of the teachers expect pupils to be quiet (30).

Type 9.

These teachers favour separate subject teaching, with pupils mainly working on tasks set by the teacher. Teacher control appears to be high; most curb movement and talk, and seat by ability. Pupil choice is minimal. Regular spelling tests are given, but few mark work or use stars (36).

Type 10.

The teaching mode favoured by this group is teacher talk to whole class within separate subjects. Pupils work in groups determined by the teacher on tasks set by her. Most teachers in this cluster curb movement and talk, and over two-thirds of them smack for disruptive behaviour. There is regular testing and most of them give stars for good work (31).

Type 11.

All members of this group stress separate subject teaching by way of class teaching and individual work. Pupil choice of work is minimal, although most teachers allow choice of seating. Movement and talk are curbed, with smacking used as punishment (39).

Type 12.

This is an extreme group in a number of respects. None favours an integrated approach. Subjects are taught separately by class teaching and individual work. None of the teachers allows pupils choice of seating and every teacher curbs movement and talk. These teachers are above average on the use of all assessment procedures and extrinsic motivation predominates (36).

Another statistical research study on teaching style was conducted by Heikkinen (1977). He designed a Q sorting questionnaire to identify the four families of teaching established by Joyce and Weil (1972). (See Appendix A)

Heikkinen (1977) surveyed 541 teachers and reported that the mean scores for the Personal Sources style of teaching were the highest (30.7), followed by Social Interaction (28.2), Behavior Modification (27.4) and the Information Processing style possessing the lowest mean (25.7). However, Heikkinen did not report on the frequency of each style's occurrence.

The limited number of educational studies on the statistical representation of the various styles, regardless of how style is defined, is unfortunate. Teaching style preferences need to be known to assist students, textbook selection, mainstreaming, research, and most important, teacher education (Heikkinen, 1977).

IV. PROXEMICS

Teaching style is but one major variable occurring in the classroom situation. The environment is also important. The area of classroom environment of central concern to this research is spatial in nature. The study of spatial relations is known as proxemics.

The theoretical basis for studies and research in proxemics is usually developed from one or a combination of three primary philosophical bases. These bases are the anthropological developed by Hall (1959, 1966), the psychological developed by Lewin (1951), Barker (1960, 1965, 1978), and Barker and Gump (1964), and the architectural developed by Sommer (1959). It should be noted that these positions are very closely interrelated and are often grouped together as environmental psychology or ecological psychology.

Sommer (1967) uses the term group-ecology to describe spatial relations in organized groups and relates that Hall's (1963) term proxemics is used to cover the entire field of human spatial usage. Lewin (1936) restricts the term proxemic to spation relationships but stresses that one must take into account both the person and the environment.

Barker (1978) defines the behavior setting as a mix of physical and human components:

It is the interdependence of the parts, rather than their similarity, that makes a behavior setting a unitary entity. The standard pattern of a behavior setting may involve very diverse occurrences, but stable, programmed forces within the setting enforce conformity by each of its human and nonhuman components to some phase of its diverse pattern. It is this conformity within a diversified, established pattern rather than uniformity of parts that makes a behavior setting a unit. (p. 195)

An important part of each behavioral setting is the concept of proxemics. Barker (1969) uses proxemics to refer to the relationship of objects to each other in the social and physical environment.

Proximity has been considered a major factor by environmental psychologists studying the effects of sex and race upon personal space (Leiberman, 1970; Pempus, 1975; Center, et al., 1975), and by geographers studying the effects of perception upon geography (Beck, 1967). The effects of color upon visiting time in museums (Srivastava and Peel, 1968) and social interaction in mental institutions (Almond and Esser, 1965) have also been studied.

The discussion of proxemics in education has been limited. Getzels (1974) attempted to relate physical settings to the philosophical orientations of the school system. He logically suggests that the traditional classroom was a reflection of a stimulus-response orientation whereas the open classroom without desks suggests a problem solving situation.

Richardson (1967) presented an excellent discussion of the relationship that physical classroom settings have upon interaction but gives no statistical distribution data to support her positions. She noted that interaction between leader and participants in a discussion is greatly improved through the use of a semicircular or horseshoe formation rather than the traditional classroom arrangement of neat rows and files.

Bany and Johnson (1964) state:

Since both group instruction and individual instruction are required for the maximum development of individuals, it is desirable that seating arrangements be variable to permit adjustment to the nature of the tasks and activities (p. 109).

A similar philosophy of seating arrangements is stressed by Volkinor, Langstaff and Higgins (1974).

You may have to take into account the kinds of furniture you have available. Do you have only single desks or are there various types of desks and tables? If your classroom furniture is of limited variety...never fear. One can always push single desks together to make small group work areas. If you only have tables, you can devise cardboard dividers for the table tops to partition off some individual study areas. Whatever you have, let it function in the way that it serves you and the class best for the type of activity going on (p. 23).

The philosophy of changing seating patterns to fit the activity of the class is also supported by Stanford and Roark (1974):

The seating arrangement in the classroom can seriously affect the effectiveness of group discussions. It is axiomatic that discussion groups should sit in such a way that all members can see all other members and that all members can hear one another without the need to shout. A tight circle fills this requirement best. If the total class is meeting together, their desks should be arranged in a circle, with empty desks removed and wide spaces between desks eliminated. The teacher should sit at a student's desk as part of the circle, to dispel the impression that he is the focal point of the discussion. In small classrooms in which a circle is simply not possible, a double semicircle or horseshoe is an alternative. If a semicircle is used, the teacher should avoid the temptation to sit or stand in the open side, but instead join the group as participant rather than authority figure. When the class divides into small groups, each group should pull their desks into a small circle. They should be encouraged to sit as close to one another as possible, so that they do not have to talk loudly and thus disturb other groups. Small groups should be spaced in the classroom in such a way as to maximize the distance between them (p. 93).

In a recent study, Carew and Lightfoot (1979) state:

Like reading groups, classroom seating patterns often reflect the teacher's basic attitudes toward children. Two aspects of seating arrangements struck us as important: the frequency with which desks are rearranged and the use of isolation as a technique for controlling disruptive or distractible children (p. 95).

The stating of the philosophical needs and advantages to proxemic seating changes in classrooms has been discussed. What educational

research evidence is available to support these various positions?

The differences in interaction of persons in classrooms was tested by Sommer (1967) and reported in an article entitled "Classroom Ecology." One hundred forty-four university students were divided into two sets of discussion groups. One set met in a seminar-type room and the other in a laboratory with a straight row arrangement. Sommer found that those students who chose to sit opposite the instructor significantly contributed more than those sitting at side tables. The only variable that appeared to influence this interaction was when latecomers were required to sit in the front.

A Cornell University study conducted by Chase (1975) found that when students were teaching each other a skill, the hierarchical lecture pattern gave way to an array of group interactions. Bales and Hare (1963) found that group members talked more to persons who sat next to them. These studies illustrate the importance that proxemic relations have for educators.

Adams and Biddle (1970) also present convincing evidence that spatial position is important. In their video tape study of 32 math and social studies lessons of 16 classrooms in grades one, six, and 11 they found: "Participation seems to be determined by location" (p. 49). In 1176 interactions emitted by pupils, virtually all interaction occurred in the front and center rows of the room. This room-action-zone was recorded in all classrooms.

Meisels and Guardo (1969) studied 431 students and found that children used less space for classroom interaction as they grew older

and that females used more space than males. They also supported the conclusions of Hall (1964) who stated that proper cultural social distance is learned and established by about grades six or seven.

Schwebel and Cherlin (1972) in a study of 14 classrooms found that the interaction zones of Hall (1964) were also effective in predicting classroom interaction but that teachers were unaware of them.

In assigning children to seats the teachers made two decisions: to what part of the room to assign them and next to whom they should sit. Questioning revealed that the teachers were selecting children's neighbors in a way which would aid them in maintaining behavioral standards in the classroom (p. 545).

After measuring the classroom behavior and teacher's perception of the students, Schwebel and Cherlin (1972) moved the students into a different classroom seating pattern. Positive significant differences regarding the teachers' view of the student as more attentive and more likeable occurred. Positive nonsignificant changes also occurred in students' behavior. Schwebel and Cherlin (1972) also found that 57 percent of 177 students preferred front row seats and that students who sat in the front thought of themselves as smarter and better liked by their teacher.

In a different approach to the use of space in teacher-pupil interaction, Freeman (1977) studied the number of times teachers interacted with successful and unsuccessful pupils in Hall's (1964) four zones of interaction.

Teachers used Zone 1 (touching to 18 inches) more often with the unsuccessful pupils. A trend in the teacher's use of distance zones may be observed for the successful group. As the distance

between the teacher and the successful child increases, the number of interactions increases (from 62 interactions in Zone 1 to 288 interactions in Zone 4). This trend is not present for the unsuccessful group. Teachers interacted with unsuccessful pupils most often from a distance of at least four and one-half feet and beyond. It should be noted that over half of all interactions with both groups of pupils occurred from distances of four feet or more. Also, more than a third of all interaction (with both groups) were conducted from a distance of more than twelve feet. Hall (1959) described this interaction distance as "cold" (p. 62).

Freeman (1977) and Schwebel and Cherlin (1972) have demonstrated that teachers use proxemics either knowingly or unknowingly in their interactions with students. Also noted was that spatial relations play an important part in the individual classroom. The total environment of the student also seems to change student behavior.

The idea that the total school environmental orientation and established proxemic relationships may be related was studied by Bothewell (1975). Bothewell found that students from an open space school had different social seating patterns in a choice of cafeteria seats than did those from a closed space school. The open space school children significantly preferred the seat that allowed them better interaction.

V. SUMMARY

The review of the literature on the uses of proxemics in classrooms illustrated that seating position does influence teacher-student interaction. It also was found that when seating patterns change, so do the types of interactions that occur. The literature

reviewed on teaching style found limited information on the quantity of the styles in actual classroom use but much discussion of the philosophical differences between styles. The literature on middle schools discussed their rationale, mission, newness, and increasing numerical occurrence.

None of the reviewed studies on middle schools, teaching style, or proxemics addressed the issue of teaching style and classroom seating arrangements in middle schools. The question of whether or not there may be a relationship between teaching style and classroom seating arrangements remains to be answered.

CHAPTER III

RESEARCH DESIGN AND PROCEDURE

I. INTRODUCTION AND RESEARCH DESIGN

The purpose of this chapter is to state the research design and procedures used in this study, to discuss the selection of the sample, the collection of the data, the development of the instrument, and to present the statistical methods used to analyze the data.

This investigation examined the existence or nonexistence of the relationships between teaching style and classroom seating arrangements. In addition, the factors of roll taking and frequency of changes in classroom seating arrangements were explored.

All of the teachers involved were East Tennessee middle school instructors teaching during the months of November and December and February and March of the 1979-80 school year. A total of 30 schools were used in the study. A maximum number of 300 teachers could have participated in the study. From these 300, 189 usable responses were obtained. The responses to the test instrument were examined and treated by statistical analysis to establish the existence or nonexistence of relationships between teaching style and classroom seating arrangements.

II. PROCEDURES

Selection of Subjects

A list of all the schools that met the research's definition of a middle school was obtained from the 1978-1979 Directory of Public Schools (State Department of Education, 1978). Fifty-two middle schools in the state met the previously listed requirements. An examination of the middle schools' locations within the state revealed that 33 (63 percent) were located in the Eastern section of the state. Because of this concentration, it was decided that a thorough survey of this one area would be more beneficial than a random sample of the total state population. Thirty schools were selected from the population by randomly removing three schools.

From a list of random numbers, three numbers were selected from one to 33. The fourth column of the list of random numbers was arbitrarily selected as a starting point. The three numbers were selected by reading the first two digits down the column that were between the numbers one and 33. These three numbers were matched with the order of the middle schools listed and were removed from the research sample. The sampling process removed only three cases from the exact universe of 33. This random removal of only three cases makes the sample extremely strong in its representation of East Tennessee middle schools.

Collection of Data

After the schools were selected, the number of teachers in each school was obtained from the 1978-1979 Directory of Public Schools. One school did not list its number of teachers. The number of teachers in the 30 schools that were listed ranged from 11 to 37. The average number of teachers was 18.5. The sampling of ten teachers from each school allowed more than one half of the average number of teachers to respond and still gave a sample that was not skewed toward either large or small schools. This sampling process provided an adequate number of cases for statistical analysis. Sixty-three percent of the possible sample of 300 returned their survey forms.

Development of the Instrument

The instrument used in this research was composed of two parts. The first section was developed by Heikkinen (1977) to measure the models of teaching developed by Joyce and Weil (1972).

The original teaching style questionnaire was to be scored using a process known as "Q Sorting" (Heikkinen, 1977). (see Appendix A.) This researcher wanted to differentiate the responses on each individual item as well as the extreme choices but wished to use Dr. Heikkinen's previously tested instrument. The researcher contacted Dr. Heikkinen by telephone on July 26, 1979. Dr. Heikkinen granted his permission to change the teaching style items to a Likert

scale. This change should not alter either validity or reliability of the teaching style questionnaire. Application of a Likert scale would allow each item to be weighed individually. Also, each item in the seating arrangement section of the test instrument has five possible responses. By using two scoring systems that are compatible, statistical sorting and analysis was more efficient. Heikkinen developed his inventory after a number of pilot studies and tested the instrument for both validity and reliability (Heikkinen, 1977).

Validity data were gathered from seven small groups of students who had used Models of Teaching (Joyce and Weil, 1972) as a text and who matched 90 percent of the survey statements with the correct family, a group of students who were trained in the Behavior Modification family and who exhibited significantly (.01) higher scores in this family than the others, and an application of Rao's canonical factoring to a sample of 541 respondents (Heikkinen, 1977).

Additional validity was suggested by the use of the TSQS as a pre-test post-test for a series of seven workshops designed to promote a more personal style of teaching. The post-test scores for the Personal Sources family were significantly higher, $p \leq 0.03$ to 0.001 in all seven workshops (Heikkinen, 1977, p. 9).

Reliability data for both internal consistency and test-retest were established as follows:

Pearson product moment correlations were used to calculate item-total correlations which indicated internal consistency. Each statement was correlated with the total score of the family which it represents. All correlations were significant at the 0.01 level and ranged from 0.31 to 0.56.

Kendall's tau correlation coefficients were used to correlate the test-retest scores. The rank order of the four families from the TSQS from the first administration were correlated with those of the second administration. The correlation coefficients ranged from 0.44 for the Information Processing family to 0.65 for the Behavior Modification family. All correlation coefficients were significant at the 0.01 level or lower (Heikkinen, 1977, p. 9).

Because Heikkinen's instrument exhibited the highest validity and reliability of any measurement of teaching style available at the time the research was conducted, it was used to measure the teaching styles of the sample.

The classroom seating arrangement section of the questionnaire is based on the most commonly accepted seating patterns that are available to the classroom teacher (Richardson, 1967). The questions were developed in consultation with a panel of Professors of Education at The University of Tennessee. A list of possible classroom seating arrangements was presented to this panel. After the panel had reached agreement on the format and questions, it was administered to one graduate class of education students at The University of Tennessee and a sample of 15 elementary school teachers not part of the sample as part of the pretesting procedure. (see Appendix B.) Additional support for the validity and descriptiveness of the instrument was gained in that only six respondents reported that they used some other type of seating arrangement other than those stated in the instrument.

In order to meet the research regulations involving human subjects as required by The University of Tennessee and the Code of Federal Regulations, the following statement was included in the cover letter of the instrument:

Your completion of this questionnaire will constitute your informed consent to participate in this study as required by the Code of Federal Regulations 45 CFR 46, 103c, March 13, 1975.

Feedback and comments as to the appropriateness and validity of the cover letter, instructions, and questions were obtained from both the instructors and the students of these pretest classes. A few pretest adjustments were made in the instructions before the instrument was mailed.

Treatment of Raw Data

The questionnaire response sheet was a general purpose answer sheet. Respondents were to fill in the requested information with a lead pencil. Only one respondent used an ink pen which required lead pencil overmarking. The returned responses were computer tape coded at the Tennessee State Testing and Evaluation Center.

The respondents were divided into teaching style groups for statistical testing of hypotheses relating to teaching style. Other data analyses were made using the total responding population.

Statistical Methods

Statistical analysis commenced by the separation of the respondents into one of the four styles established by Joyce and Weil (1972) and codified by Heikkinen (1977).

The items that relate to the Information Processing (IP) style are:

- (2). Concepts are the basis of knowledge.
- (10). The task of the school is to identify clear, stable, and organized bodies of knowledge within the disciplines.
- (14). Good lectures and demonstrations can lead to meaningful learning.
- (15). The role of the teacher is to retain control of the intellectual structure of the classroom.

The items that relate to the Personal Sources (PS) style are:

- (1). A student should have control over the selection of activities so that he/she selects his/her own instructional outcomes.
- (3). Instruction should emphasize the maximization of unique personal development.
- (5). The teacher should recognize that the individual is capable of handling his/her own learning in constructive ways.
- (12). The student must take responsibility for initiating and maintaining learning activities.

The items that relate to the Social Interaction (SI) style are:

- (4). The social involvement of group investigation is a route to academic inquiry.
- (7). The school has to be an active participant in the continuing development of culture.
- (9). In a complex, interdependent world, the individual's well being is closely related to the larger social structure.
- (13). Instruction should emphasize the relationships of the person to society.

The items that relate to the Behavior Modification (BM) style are:

- (6). The sequence of learning should be broken down into small units to assure success at each step.
- (8). Positive and negative reinforcement both can increase response probability.
- (11). Teachers are able to define all goals and objectives in terms of observable behavior.
- (16). Behavior modification can be used to extenguish objectionable behavior as well as to establish behavior responses in subject matter areas.

The responses to the teaching style questionnaire were positively weighed. Each strongly agree score was given five points, agree four

points, undecided responses three points, disagree items two points, and strongly disagree items one point for each respondent's answers on each style.

The range of scores in each style can vary from four to 20. The respondent's largest score determined the style by which the teacher was identified. If an individual's scores were equal in two, three or four styles that portion of the individual's test was declared invalid and removed from the pool of responses used to test significant differences. Forty-seven individuals could not be placed in just one style.

Using the data obtained from the computer scan forms mailed by the teachers, statistical manipulation was conducted. The 1979 revision of Statistical Analysis System was used by the Computer Center of The University of Tennessee to analyze the data. The following items of information were obtained from the statistical analysis: The answers of all the respondents, the frequencies and percentages of answers to each item, the frequency of each style and number of responses not codeable, a daily-to-weekly and monthly-to-never time span collapsing of each item, a daily-to-monthly and yearly-to-never time span collapsing of each item, and chi-square tests of each hypothesis.

The quantity issues and situations of this study were presented by numerical frequency charts. Differences between the types of teaching styles and their uses of different types of seating patterns were charted. This material was subjected to chi-square analysis to determine if significant differences were present.

Totals of all the responses are listed in the Appendices to facilitate further research and ex post facto studies.

III. SUMMARY

The randomly selected sample for the study includes 30 schools and a possible number of 300 selectively sampled teachers. One hundred and eighty-nine of the teachers surveyed anonymously responded to both the Teaching Style Questionnaire and classroom seating section of the instrument. The responses were computer scored. Simple numerical frequencies and chi-square were used to determine statistical relationships between teaching style and classroom seating arrangements.

CHAPTER IV

ANALYSIS OF DATA

I. INTRODUCTION

The purpose of this chapter is to present an analysis of the data collected from the questionnaires returned by the middle school teachers. As was stated in Chapter I, this was a survey study concerned with answering questions concerning the distribution of teaching styles as measured by Heikkinen's (1977) Teaching Style Questionnaire and Tennessee middle school teachers' use of various seating arrangements. The sample consisted of 189 questionnaires returned from a total sample of 300 teachers located in 30 East Tennessee middle schools.

II. RESULTS OF ISSUES

Distribution of Teaching Styles

Table 1 presents the results of the analysis of the teaching styles of the respondents. Forty-seven teachers (25 percent of the total group) could not be classified as one type or another. As stated in the methodology section, individuals who had tied scores in the teaching style section of the instrument would not be included in both sections but would be removed from the analysis of this section.

TABLE 1. NUMBER OF EAST TENNESSEE MIDDLE
SCHOOL TEACHERS REPORTED IN EACH
TEACHING STYLE

STYLE	NUMBER	PERCENT OF TOTAL
Information Processing	67	35
Social Interaction	54	29
Behavior Modification	19	10
Personal Sources	2	1
Not Identifiable	47	25

There is a difference of eleven between those teachers whose teaching style was sorted as Information Processing and Social Interaction. The small number of teachers in both the Personal Sources and Behavior Modification reduces their significance and importance. The sample appears to be mainly composed of teachers who are concerned with improving students' information processing abilities (Information Processing) and those who are interested in developing better social relations (Social Interaction).

These data were as expected except for the low number of Personal Source teachers. Bennett and Jordan (1976) had found a 12 group cluster distribution in their study of teachers in England. Keikinen's studies did not show any major orientation toward any particular style. The data in Table 1 may support the study of Gracey (1972) who found

that Personal Sources style teachers may leave teaching because of their frustrations with the system. The low number of Behavior Modification teachers was not unexpected. It was expected that their number be at least 10 percent. It was expected that Information Processing teachers would be the largest group.

The Changing of Seating Patterns

As is shown in Table 2, 75 percent of the sample changed seating patterns at least monthly.

Only 34 teachers changed seating patterns on a daily or weekly basis. This is not surprising considering the two major styles of teaching that were identified. The extremely large number of monthly changes was not anticipated. One would expect the monthly use to be large but not 54 percent. The use of audio visuals and other group

TABLE 2. CHANGES IN SEATING PATTERNS AS REPORTED
BY THE EAST TENNESSEE MIDDLE SCHOOL
TEACHERS SURVEYED

ITEM	DURATION					TOTAL
	DAILY	WEEKLY	MONTHLY	YEARLY	NEVER	
How Often Seating Pattern Is Changed	16 (9)	18 (10)	99 (54)	30 (16)	22 (12)	185

(Percentages in parentheses)

activities could be the factor demanding monthly seating changes. That 22 teachers never changed their seating patterns may illustrate a rigid format or the possibility that they do not view seating patterns as important.

The Use of Seating Charts for Taking Roll

A major division in the sample can be seen in Table 3. It appears that when teachers use a seating chart, they do so daily or not at all. Twenty-five percent use seating charts daily and 69 percent rarely use this method.

TABLE 3. EAST TENNESSEE MIDDLE SCHOOL TEACHERS
REPORTING THE USE OF SEATING CHARTS
TO TAKE ROLL

ITEM	DURATION					TOTAL
	DAILY	WEEKLY	MONTHLY	YEARLY	NEVER	
Use of Seating Charts	46 (25)	5 (3)	6 (4)	10 (5)	121 (64)	188

(Percentages in parentheses)

Students' Choice of Their Own Seating Positions

The responses on this issue (Table 4) were as anticipated. Teachers allowed students to sit where they wanted on a daily basis in one-third of the cases. The large number of Information Processing teachers may account for some of the 22 percent who never allow students a seat choice. The rest of the responses are well distributed across the time periods.

TABLE 4. EAST TENNESSEE MIDDLE SCHOOL TEACHERS
REPORTING STUDENTS WERE ALLOWED
TO CHOOSE THEIR SEATS

ITEM	DURATION					TOTAL
	DAILY	WEEKLY	MONTHLY	YEARLY	NEVER	
Allow Students To Sit Where They Want	61 (33)	24 (13)	40 (21)	21 (11)	41 (22)	187

(Percentages in parentheses)

Teachers' Assignment of Seats
To Students

As is seen in Table 5, a majority (51 percent) of the teachers assigned seats at least monthly. Only 5 percent reported that they never assigned seats.

TABLE 5. EAST TENNESSEE MIDDLE SCHOOL TEACHERS
REPORTING THE ASSIGNMENT OF SEATS

ITEM	DURATION					TOTAL
	DAILY	WEEKLY	MONTHLY	YEARLY	NEVER	
Seats Assigned	37 (20)	22 (12)	55 (29)	46 (25)	28 (15)	188

(Percentages in parentheses)

The daily frequency in Table 5 is only 5 percent different from that of the daily use of seating charts. However, the comparisons of

the two issues are not compatible in any of the other time periods. It appears that teachers assign seats for reasons other than roll taking. This position is supported by the material on the rationale for seat assignments in Table 6.

The Rationale for Seat Assignment

Table 6 presents the data concerning the reasons why students were assigned to particular seats. When these data are grouped into frequent (daily to monthly) and rare (yearly to never) usage, the majority of the respondents placed students for personal needs or disciplinary reasons.

TABLE 6. EAST TENNESSEE MIDDLE SCHOOL TEACHERS
REPORTING RATIONALE FOR SEAT ASSIGNMENT

TYPE	DURATION					TOTAL
	DAILY	WEEKLY	MONTHLY	YEARLY	NEVER	
Personal Needs	96 (51)	36 (19)	32 (17)	12 (6)	12 (6)	188
Disciplinary	59 (31)	49 (26)	44 (23)	17 (9)	19 (10)	188
Academic Ability	20 (11)	14 (8)	21 (11)	12 (6)	121 (64)	188

(Percentages in parentheses)

Examining the daily versus never usage categories, personal need is the major reason for seat assignment and academic ability the least often reason for seat assignment. The change in disciplinary rationale is not as great in the extremes as personal need and academic ability.

The lack of placement for academic ability was unexpected. This is especially true of the high percentage, 4 percent, who never place their students according to academic ability.

Types of Seating Arrangements

The philosophy of the middle school toward high student-teacher interaction can be questioned by the data in Table 7. Nontraditional seating patterns were not being used as much as was anticipated.

TABLE 7. EAST TENNESSEE MIDDLE SCHOOL TEACHERS
REPORTING USE OF VARIOUS
SEATING PATTERNS

TYPE	DURATION					TOTAL
	DAILY	WEEKLY	MONTHLY	YEARLY	NEVER	
Rows and Files	86(46)	15(8)	27 (14)	22(12)	38(20)	188
Circle	6(3)	12(6)	31 (16)	35(19)	105(56)	189
Horseshoe	14(8)	9(5)	27 (14)	26(14)	112(60)	188
Small Groups	24(13)	27(14)	63 (36)	27(14)	47(25)	188

(Percentages in parentheses)

The rows and files are used most frequently (daily to monthly) by the respondents (68 percent). The circle is the least used pattern. Seventy-five percent rarely used this pattern. Small groups frequently (63 percent) were used. When the extremes are examined, the extensive use of rows and files and the lack of the use of the other patterns is very apparent. The daily use of rows and files was reported by almost

one-half of the sample and the number reporting that they never used a horseshoe shaped pattern or circle was also over one-half of the respondents. Twenty-five percent of the sample reported never using small groups.

Within Class Isolation Techniques

Table 8 demonstrates the use of seating as a method of isolating students from the class. No value judgements for the rationale behind a teacher's use of these patterns were included in the questionnaire; therefore, none should be read in the data. Over 40 percent of the respondents reported that they never used either isolation technique.

TABLE 8. EAST TENNESSEE MIDDLE SCHOOL TEACHERS
REPORTING OF WITHIN CLASS
ISOLATION TECHNIQUES

TYPE	DURATION					TOTAL
	DAILY	WEEKLY	MONTHLY	YEARLY	NEVER	
One Small Group	21 (11)	10 (5)	23 (12)	25(13)	110(58)	189
Individual	22 (12)	23 (12)	27 (14)	29(16)	86(46)	187

(Percentages in parentheses)

The use of one small group on a daily basis was surprising. When these data are compared to Table 7, one sees little difference between daily usage but much difference in the weekly and monthly intervals. The use of individual isolation was as expected until one reaches the "never" time period. It is difficult to believe that 46 percent of the respondents never use individual isolation as a seating method.

Other Seating Choices

Eight respondents reported seating arrangements that were not covered by the questionnaire. One teacher stated that he/she used straight rows but they were divided into two groups facing each other. Two teachers stated that a zigzag pattern of seating was used. Another teacher stated that the chairs were arranged in rows but facing different directions during the year. One teacher stated, "My students are allowed to work in groups of their choice in the hall or in the room—2 or 3—or 5 or 6—in a group." Another respondent stated that he/she used two semi-circles, two rows back to back, square shapes, "U" shapes, and one large row at least yearly. The floor and individual study carrels were also mentioned by two teachers.

Responses to Teaching Style Questionnaire

All the responses to the teaching style questionnaire are listed in Appendix F. There were three particular items answered by the respondents that were extreme (90 percent) in their orientation by either agreement or disagreement. These items and their responses are listed in Table 9.

The item most strongly approved by the respondents was item 14, "Good lectures and demonstrations can lead to meaningful learning." Ninety-six percent of the respondents were in agreement with this statement. This item received the highest percentage of "strongly agree" responses of all the statements in the questionnaire. Heikkinen uses this item as one identifier of the Information Processing group.

TABLE 9. STRONGLY HELD POSITIONS OF THE EAST
TENNESSEE MIDDLE SCHOOL TEACHERS SURVEYED

NUMBER OF QUESTION AND CORE MEANING	RESPONSES				
	SD	D	U	A	SA
6. Small unit sequential learning.	1(0)	8(4)	9(5)	84(45)	87(46)
7. The school developing culture.	3(2)	4(2)	10(5)	96(51)	76(40)
14. Lectures and demonstrations relationship to meaningful learning.	1(0)	5(3)	2(1)	93(49)	88(47)

NOTE: SD = Strongly disagree
D = Disagree
U = Undecided
A = Agree
SA = Strongly agree

Item number 6, "The sequence of learning should be broken down into small units to assure success at each step," was the second highest in percentage of "strongly agree" responses. This item is a member of the Behavior Modification group identifiers.

Item number 7, "The school has to be an active participant in the continuing development of culture," also received over 90 percent in the positive direction and ranked in percentage of "strongly agree" responses. It is a member of the Social Interaction group of identifiers.

One item each from the three major styles of the total responding sample was strongly supported by the total group.

III. RESULTS OF HYPOTHESES

A series of 13 hypotheses were developed for testing various expectations of the anticipated results. The first five are related to the Information Processing style of teaching, the next three relate to the Social Interaction style, the following three to the Personal Source style, and the final two to the Behavior Modification style of teaching. Because of the small number of teachers in the Personal Sources style (2) statistical manipulation for significant differences was not applicable.

Information Processing Teachers' Use of Seating Charts to take Roll

The hypothesis related to this area was: Information Processing teachers will use a seating chart to take roll more frequently than the other styles.

This statement was not supported by the data when the results were grouped on a daily to weekly basis. Table 10 illustrates that the Information Processing teachers used seating charts in 12 cases whereas the other groups used charts 22 times.

TABLE 10. 2 X 2 CONTINGENCY TABLE FOR INFORMATION PROCESSING TEACHERS AND OTHERS ON SEATING CHART USAGE - DAILY TO WEEKLY AND MONTHLY TO NEVER

STYLE	USAGE		CHI SQUARE
	DAILY TO WEEKLY	MONTHLY TO NEVER	
Information Processing	12	53	
All Others	22	98	
Total	34	151	NS

Level of significance = .98, nonsignificant.

However, when the time interval is increased to daily to monthly rather than daily to weekly, stronger differences do appear. (See Table 11.)

Information Processing Style Teachers' Change of Seating Patterns

The hypothesis relating to this area was: Information Processing style teachers will change the seating pattern of their classes less frequently than the other styles.

TABLE 11. 2 X 2 CONTINGENCY TABLE FOR INFORMATION
PROCESSING TEACHERS AND OTHERS ON SEATING CHART
USAGE - DAILY TO MONTHLY AND YEARLY TO NEVER

STYLE	USAGE		CHI SQUARE
	DAILY TO MONTHLY	YEARLY TO NEVER	
Information Processing	26 (39)	41 (61)	
All Others	31 (26)	90 (74)	
Total	57	131	3.55*

* Significant at the .06 level
(percentages in parentheses)

This hypothesis was not supported by the data gathered. Of the 67 Information Processing teachers identified, 23 changed the seating pattern at least weekly whereas the other styles changed seating patterns 28 times. (see Table 12 below.)

TABLE 12. 2 X 2 CONTINGENCY TABLE FOR INFORMATION PROCESSING TEACHERS AND OTHERS ON CHANGES IN SEATING PATTERNS

STYLE	USAGE		CHI SQUARE
	DAILY TO WEEKLY	MONTHLY TO NEVER	
Information Processing	23	44	
All Others	28	93	
Total	51	137	2.7 NS

Level of significance = 1.3, nonsignificant

Information Processing Teachers' Use of the Seating Pattern of Rows and Files

The hypothesis relating to this area was: Information Processing teachers will use the seating pattern of rows and files more frequently than the other styles.

This hypothesis was not supported by the data. As shown in Table 13, there was no significant difference in Information Processing teachers usage of rows and files as a seating pattern.

TABLE 13. 2 X 2 CONTINGENCY TABLE FOR INFORMATION
PROCESSING TEACHERS AND OTHERS ON
THE USE OF ROWS AND FILES

STYLE	USAGE		CHI SQUARE
	DAILY TO WEEKLY	MONTHLY TO NEVER	
Information Processing	41 (61)	26 (38)	
All Others	60 (50)	61 (50)	
Total	101	87	2.337*

* Nonsignificant at the .05 level; however, significance is .13
(percentages in parentheses)

The percentage of Information Processing teachers using rows and files is 11 points higher than the "Others" group. The probability of Information Processing teachers using rows and files is strong even if not significant.

Information Processing Teachers' Assignment of Students to Seats

It was hypothesized that Information Processing teachers would assign students to seats more than any other style.

This hypothesis was not supported by the data. Only 2 percentage points difference was shown between the groups. The low level of regular seat assignment of the total group was unexpected as well.
(see Table 14.)

TABLE 14. 2 X 2 CONTINGENCY TABLE FOR INFORMATION
PROCESSING TEACHERS AND OTHERS ON
FREQUENCY OF SEAT ASSIGNMENT

STYLE	USAGE		CHI SQUARE
	DAILY TO WEEKLY	MONTHLY TO NEVER	
Information Processing	22 (33)	45 (67)	
All Others	37 (31)	84 (69)	
Total	59	129	.10 NS*

* Level of significance = .75, nonsignificant
(percentages in parentheses)

Information Processing Teachers'
Assignment of Students to Seats
According to Ability

The hypothesis pertaining to this area was: Information Processing teachers will assign students to seats according to ability more often than all styles except Personal Sources.

Since the number of teachers sorted in the Personal Sources style was only two, their statistical impact was minimal and they were included in the "All Others" group for analysis. There was no significant difference between Information Processing teachers' use of seat assignment based on academic ability and the other groups as is shown in Table 15.

Information Processing teachers did exhibit several of the characteristics expected. They were the largest group, they did strongly vary from the other styles in their usage of rows and files,

TABLE 15. 2 X 2 CONTINGENCY TABLE FOR INFORMATION
PROCESSING TEACHERS AND OTHERS ON THEIR USE OF
SEAT ASSIGNMENT BASED ON ACADEMIC ABILITY

STYLE	USAGE		CHI SQUARE
	DAILY TO WEEKLY	MONTHLY TO NEVER	
Information Processing	10	57	
All Others	23	96	
Total	33	153	.57 NS*

* Level of significance = .45, nonsignificant

and they also showed a strong statistical difference in their daily to monthly use of seating charts.

Social Interaction style teachers were the second largest group identified by the questionnaire. There were several hypotheses associated with this style.

Social Interaction Style Teachers'
Division of the Total Class into
Small Groups

The hypothesis related to this area was: Social Interaction style teachers will divide the total class into small groups more than any other style.

This hypothesis was not supported by the data. Only 11 Social Interaction teachers reported that they divided the whole class into small groups on a daily to weekly basis. (see Table 16.)

TABLE 16. 2 X 2 CONTINGENCY TABLE FOR SOCIAL
INTERACTION TEACHERS AND OTHERS ON FREQUENCY
OF CLASS DIVISION INTO SMALL GROUPS

STYLE	USAGE		CHI SQUARE
	DAILY TO WEEKLY	MONTHLY TO NEVER	
Social Interaction	11	43	
All Others	40	94	
Total	51	137	1.8 NS*

* Significant at the .19 level, nonsignificant

Social Interaction Style Teachers' Use
of One Small Group of Students
Separated from the Class

As was the case in the comparison of Information Processing teachers with the Personal Sources group, this analysis included Personal Sources with "All Others" because of their size. It was hypothesized that Social Interaction style teachers would use one small group of students separated from the class more often than the other styles except Personal Sources.

There is a strong difference between the two groups but it is negative in direction. The other styles used one small group separated from the class more than did the Social Interaction group. The statistics shown in Table 17 give statistical support for rejection of the hypothesis.

TABLE 17. 2 X 2 CONTINGENCY TABLE FOR SOCIAL
INTERACTION TEACHERS AND OTHERS ON
USE OF ONE SMALL GROUP

STYLE	USAGE		CHI SQUARE
	DAILY TO MONTHLY	YEARLY TO NEVER	
Social Interaction	5 (9)	49 (91)	
All Others	26 (20)	107 (80)	
Total	31	156	2.9 NS*

* Significant at the .09 level, nonsignificant and negative in direction.

(Percentages in parentheses)

Social Interaction Style Teachers'
Allowing Students to sit where
they Please

The hypothesis relating to this issue was that Social Interaction teachers would allow students to sit where they pleased more than the other styles.

As is shown in Table 18, this hypothesis may deserve rejection. There is not much difference (only 3 percent) between this style's use of the student's right to choose a seat and all the other styles' usage.

TABLE 18. 2 X 2 CONTINGENCY TABLE FOR SOCIAL
 INTERACTION TEACHERS AND OTHERS ON USE OF
 STUDENT'S FREEDOM TO CHOOSE SEAT

STYLE	USAGE		CHI SQUARE
	DAILY TO WEEKLY	MONTHLY TO NEVER	
Social Interaction	23(43)	30(57)	
All Others	62(46)	72(54)	
Total	85	102	.13 NS*

* Significant at the .7 level, nonsignificant
 (Percentages in parentheses)

Only 19 teachers were identified as associated with the Behavior Modification style of teaching. This small number was not unexpected. There were two hypotheses projected for this style.

Behavior Modification Style Teachers'
Separation of one or two Students
from the Class

It was hypothesized that this style of teacher would use an individual modification seating technique more than the other groups. As is shown in Table 19, there is only 2 percentage points separating the two groups. The cell numbers reduce the strength of chi square as a test of significance but the percentage difference still gives support to the rejection of the hypothesis.

TABLE 19. 2 X 2 CONTINGENCY TABLE FOR BEHAVIOR
 MODIFICATION TEACHERS AND OTHERS ON THEIR
 USE OF ONE OR TWO STUDENTS SEPARATED
 FROM THE CLASS

STYLE	USAGE		CHI SQUARE
	DAILY TO WEEKLY	MONTHLY TO NEVER	
Behavior Modification	5(26)	14(74)	
All Others	40(24)	128(76)	
Total	45	142	.06 NS*

* Level of significance = .80, nonsignificant
 (Percentages in parentheses)

Behavior Modification Teachers'
Assignment of Seats for
Disciplinary Reasons

The hypothesis related to this area was: Behavior Modification style teachers will assign students to seats for disciplinary reasons more than any other style.

This hypothesis was not supported by the data. Only eight Behavior Modification teachers seated their students for disciplinary reasons, whereas 100 of the other groups used this seating technique for discipline. (see Table 20.)

TABLE 20. 2 X 2 CONTINGENCY TABLE FOR BEHAVIOR
MODIFICATION TEACHERS' USE OF SEATING
FOR DISCIPLINARY REASONS

STYLE	USAGE		CHI SQUARE
	DAILY TO WEEKLY	MONTHLY TO NEVER	
Behavior Modification	8(42)	11(58)	
All Others	100(59)	69(41)	
Total	108	80	2.03 NS*

* Level of significance = .15, nonsignificant
(Percentages in parentheses)

Hypotheses concerning the Personal Sources style cannot be tested with the data available. There were only two teachers who answered the questionnaire who identified themselves as being Personal Sources oriented. This sample is too small for statistical comparison with the other groups. Chi square demands cells of at least five items for valid testing.

IV. SUMMARY

To summarize the results of the study, it was found that:

1. East Tennessee middle school teachers responding appeared to prefer only two of the four teaching styles. They tended to choose either the Information Processing style or the Social Interaction style.

2. The teachers surveyed rarely changed the seating patterns of their classes on a daily or weekly basis but 73 percent did so at least monthly.

3. Twenty-seven percent of the respondents used a seating chart to take roll at least monthly.

4. Rows and files were the most frequently used seating arrangement.

5. A circle was the least used seating arrangement. It was used by only 4 percent of the respondents.

6. Only 17 percent of the respondents used a horseshoe pattern of seating.

7. A small group separated from the class was only used by 42 percent of the group in any time span, whereas 54 percent never separated one or two individuals within the classroom.

8. Of the 13 hypotheses projected, all but three were tested. Small sample size of the Personal Sources style negated this style's statistical analysis.

9. Of the hypotheses subjected to the chi square analysis, none proved to be positively significant at the .05 level. The hypotheses most strongly supported by the data were that Information Processing teachers used seating charts on a daily to monthly basis more than the other groups (.06 level of significance) and that this group tended (.13 level of significance) to use rows and files as a seating pattern.

CHAPTER V

FINDINGS, IMPLICATIONS AND RECOMMENDATIONS

I. PURPOSE OF THE STUDY

The purpose of this study was to identify relationships of teaching style to seating arrangements as given by a representative sample of East Tennessee middle school teachers.

The major areas were:

1. The number of teachers who possessed each of the styles of teaching as identified by Joyce and Weil (1972).
2. The use of various types of seating arrangements.
3. The relationships that may exist between the styles of teaching and the use of various seating patterns.

To investigate the factors of teaching style, the teaching style sorting questionnaire developed by Heikkinen (1977) was used. To measure the types and frequencies of various seating patterns used by East Tennessee middle school teachers, a 14 item questionnaire (Classroom Seating Arrangements Questionnaire) was developed.

II. PROCEDURES

The sample was selected from the total middle school population of the State of Tennessee. It was composed of 30 schools randomly selected from the population. The principals of the 30 schools were instructed to selectively distribute the questionnaires to ten teachers

in their schools. The teachers were instructed to answer the questionnaires anonymously and to mail them directly to the researcher.

Data from the questionnaires were machine scored and computer encoded. The data were analyzed using frequency charts to present the numerical data and chi square to test significant differences where needed.

III. SUMMARY OF RESULTS

A series of nine issues concerning seating patterns and teaching style and 13 hypotheses formed the basis for research. All the issues were discussed and all but three of the hypotheses were testable from the data obtained. Hypotheses concerning the Personal Sources style could not be examined due to low representation in the responding sample.

1. The number of teachers who possess each of the four styles of teaching.

The findings of the study indicate that the largest number of teachers identified with the Information Processing (67), followed by Social Interaction style (54), Behavior Modification (19), and Personal Sources (2).

2. The number of times teachers changed the seating pattern of their classes.

The data revealed that only 34 teachers changed the seating pattern of their classes at least weekly and 151 teachers changed their seating patterns in the monthly to never period.

3. The number of times seating charts are used to take roll.

Fifty-one teachers used a seating chart to take roll at least weekly, whereas 137 respondents reported that they used seating charts to take roll only monthly, yearly or never.

4. The usage of various types of seating patterns.

On a daily basis, the most frequently used seating pattern was straight rows and files (66 percent). The division of the class into small groups was second in frequency of occurrence (19 percent), followed by the use of a horseshoe pattern (17 percent) and the circle (4 percent).

5. The usage of within class isolation techniques.

Most (46 and 58 percent) of the teachers never used either an individual or one small group separated from the class as a seating technique.

6. Hypotheses concerning the Information Processing style of teaching.

Information Processing style teachers did differ from the other groups regarding their use of seating charts to take roll. Information Processing style teachers also did use the seating pattern of straight rows and files more than any of the other groups. This style showed very little (2 percent) difference from the other groups in seat assignment.

7. Hypotheses concerning the Social Interaction style of teaching.

None of the hypotheses concerning this group were supported. They did not divide the total class into small groups or use a single group of students separated from the class any more than did the other groups. Neither did they allow students to sit where they pleased significantly more than the other groups.

8. Hypotheses concerning the Behavior Modification style of teaching.

The data did not support the projected hypotheses for the Behavior Modification style. This style's teachers responding to the questionnaire only used the seating method of separating one or two students from the class 2 percent more than the other groups and used seating for disciplinary reasons 17 percent less than all the others.

IV. FINDINGS

Within the constraints and limitations of this study, the data seemed to justify the following findings:

1. Middle school teachers within the Eastern section of the State of Tennessee tend to be either the Information Processing or Social Interaction style when measured by the Likert form of Heikkinen's (1977) Teaching Style Sorting Questionnaire. The low representation of Personal Sources teachers is surprising. The educational philosophy of this style is well known as a methodological approach. The fact that more of the teachers were not supportive of the

use of students as sources of information may reveal a lack of knowledge of this philosophical approach or a rejection of it.

2. The respondents did not frequently change the seating patterns of their classes. Studies by Murphy (1965); Kindred, et al., (1976); Eichhorn (1966); Kohut (1976); Mills (1973); and others stress that middle schools were intended to increase the flexibility of the classroom.

Only 16 teachers reported that they changed the seating pattern of their classroom on a daily basis. This low number lends support to the conclusions of Tyrrell, Johns and McNally (1975) who stated that there was a small number of middle school teachers who made classroom changes.

Middle school teachers may be aware of the need for seating changes to meet classroom needs. They seem not to make frequent changes on a daily or weekly basis, but, when the time span of "monthly" was examined, it revealed that 54 percent of the respondents made changes in their seating patterns. Also, only 12 percent stated that they never changed their seating arrangement. These facts may indicate that even though teachers do not change seating patterns on a weekly or daily basis, they may realize the significance of spatial relationships.

3. The use of seating charts to take roll was reported as at least a weekly practice by 27 percent of the sample. This item was included in the questionnaire as a measure of the use of stable proxemic relations within the classroom and to measure a teacher's recognition of at least one purpose of seating arrangements.

Twenty-one percent of the teachers that responded to this survey stated that they never allowed students to choose their seats. Schwebel and Cherlin (1972) found that 57 percent of 177 students preferred front row seats. If that is true, this research would tend to support that many teachers deny students the opportunity to sit where they choose in the classroom and this possibly may limit the students' preferred interaction area.

On the other hand, the teacher's control of seating may be beneficial. Barker (1978) stated that conformity establishes patterns for the "uniformity of parts" that turn behavior parts into a unit. By providing students with a stable, predictable classroom situation, teachers may be meeting security needs of some students.

4. Straight rows and files were the most frequently used seating pattern. Although Richardson (1967), Bany and Johnson (1964), Stanford and Roark (1975) and various others stress the need for changes in seating patterns, the data gathered by this research suggest that few actual changes are made on a daily or weekly basis. If one averages the percentages of the usage of seating patterns other than rows and files by the respondents, that sum is only 16 percent. One might also take the position that if an average of 30 teachers report using some method other than rows and files at least weekly, this action is a sign of positive change. Until studies are made on the quality of education as related to the various styles and classroom environments, the value issue of styles and environments is debatable.

5. The use of a circle as a seating pattern was only reported by 18 percent of the respondents. The teachers of East Tennessee surveyed seem not to agree with Stanford and Roark (1975) who stated that it was axiomatic that members of a discussion group should sit in a circle. It may also be possible that the teachers did not desire student discussion.

6. The teachers surveyed did not frequently separate students within the classroom either by group or individually. This information is surprising. The number of situations in education when these groupings could be used are rather large; i.e., projects, reports, and make-up work. The practices of individual isolation as a classic form of punishment--the dunce--and reward, "Go to the head of the class," may be well known, but were not reported by the group surveyed.

V. IMPLICATIONS

This study has many implications for education and educators.

The dichotomy of styles exhibited. East Tennessee middle school teachers appear to be either Social Interaction or Information Processing in style of teaching. Administrators need to be aware of this division in their interaction with teachers. Conflicts of philosophy need to be recognized so that needed compromises can be made for the benefit of all concerned. Individual teachers need to realize as Joyce and Weil (1972) have stated that each style has its strengths and weaknesses and that there is no one "right" way of

teaching. Teachers of professional education courses can use the information on style gathered by this study to better prepare their students for the realities that appear to exist in East Tennessee middle schools. Beginning and student teachers need to be aware of the biases that appear to exist.

Student teachers and beginning middle school teachers can benefit by having some indication of the types of teachers they will meet. The need to present more information concerning the Personal Sources and Behavior Modification styles also should be clear. These styles have important applications in the middle school. Preadolescents and adolescents often need to be recognized as having definite contributions to the class. An average of 36 percent of the teachers surveyed disagreed with the projected position of the Personal Sources style. If middle schools are intended to give more responsibility to the students, this study's results may indicate that many teachers may not be supportive of the position that students have a major role in decision making within the classroom.

The low usage of the circle and horseshoe shaped seating pattern.

A circle may make participants more equal. A horseshoe shape may make more classroom interaction possible. Both statements may be true. However, the material obtained by this study showed that these two seating patterns were not often used by the respondents.

The usage of one group or an individual student, separated from the class. These proxemic techniques were not used as often as was

anticipated. Surely teachers are aware of these techniques as they are old and established methods of control and reward. Teachers possibly send students out of the room. This may be necessary at times. However, this procedure also denies the student access to classroom information.

VI. RECOMMENDATIONS FOR FURTHER RESEARCH

This research has exposed areas that may need further examination. Research into the rationale for the use of particular seating patterns and teaching styles is needed. Why is it that 22 teachers reported never changing seating patterns? Are academic reasons really used so rarely to seat students or was the terminology of "personal needs" considered as also including academic reasons? Other questionnaires with different wording and organization would possibly answer these questions.

This study placed an emphasis on the confidentiality of the respondents. This emphasis eliminated many demographic items. The factors such as age, sex, place and level of education, and length of time in teaching were not obtained because it was felt the teachers would know they could be identified by this data. Future researchers may want to identify the respondents so that these factors can be analyzed.

This research only attempted to measure the variables of teaching style and seating patterns in East Tennessee middle schools. Research

concerning the teaching styles and seating patterns of other levels of education may assist educators in their understanding of these variables. How would the data gathered in this study compare to that obtained from an elementary, junior high, or high school population?

Related to the issue of different levels of education is the issue of the representativeness of the population chosen for this study. Duplication of this research in other areas of the United States and England would be helpful in verifying the results of this study.

The possibility may exist that the reason for the low number of Personal Sources teachers within the population is that the items within the questionnaire were worded in such a way that they did not adequately measure this style. Research concerning the rationale for the low number of Personal Sources style is needed.

Several teachers wrote comments on their forms stating that the questionnaire should have had a response of "used when necessary." Future researchers might want to consider such a response. This research attempted to force the respondents to state their actual usage rather than their preference; therefore, this research purposefully did not include a "used when necessary" response.

This study was limited to two major variables: teaching style and seating patterns. Further research comparing these variables with other factors of the educational environment may assist educators in their pursuit of knowledge in the complex field of education.

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APPENDICES

APPENDIX A

TEACHING STYLE Q-SORT (TSQS)

1. A student should have control over the selection of activities so that he/she selects his/her own instructional outcomes.
2. Concepts are the basis of knowledge.
3. Instruction should emphasize the maximization of unique personal development.
4. The social involvement of group investigation is a route to academic inquiry.
5. The teacher should recognize that the individual is capable of handling his/her own learning in constructive ways.
6. The sequence of learning should be broken down into small units to assure success at each step.
7. The school has to be an active participant in the continuing development of culture.
8. Positive and negative reinforcement both can increase response probability.
9. In a complex, interdependent world, the individual's well being is closely related to the larger social structure.
10. The task of the school is to identify clear, stable, and organized bodies of knowledge within the disciplines.
11. Teachers are able to define all goals and objectives in terms of observable behavior.
- *12. The "student must take responsibility for initiating and maintaining learning activities."
13. Instruction should emphasize the relationships of the person to society.
14. Good lectures and demonstrations can lead to meaningful learning.
15. The role of the teacher is to retain control of the intellectual structure of the classroom.

16. Behavior modification can be used to extinguish objectionable behavior as well as to establish behavior responses in subject matter areas.

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INSTRUCTIONS

In this activity you will be asked to respond to a series of 16 statements. The intent of this instrument is to assess your teaching style. You have a list of 16 statements and the response sheet with 16 blanks. When you have completed the sorting activity all of the blanks will be full and you will have used each statement once.

The statements pertain to various aspects of the education process--philosophy, methodology, goals, etc. You are to sort those statements from those that are most like your teaching to those that are most unlike your teaching. When you look at the response sheet you will note you are not asked to make 17 separate ranks. Instead you will be ranking the statements using a procedure called Q-sorting. In Q-sorting you are asked to make finer distinctions only at the extremes. Out of the 16 statements you will be asked to sort out those two that are most like your teaching and the two that are most unlike your teaching. At the next rank you will identify the three that are most like your teaching and the three that are most unlike your teaching. The middle column contains the six statements that you have the least feeling about, or are unable to make judgments on.

When you have sorted the statements into the five piles, write the number of the statements in the appropriate blanks on the response sheet.

TSQS RESPONSE SHEET

_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
5	4	3	2	1
Most Like My Teaching				Most Unlike My Teaching

APPENDIX B

EVALUATION OF TEST INSTRUMENT

Teacher:

Thank you for helping me pre-test the attached questionnaire. Please make any comments you wish about the following areas and return this sheet to your instructor. Please say what you wish as this is in no way related to your grade or course requirements.

- I. COVER LETTER: (i.e. How could the letter be improved? Was there anything in the cover letter that offended you?)

- II. DIRECTIONS: (i.e. Were they clear? Did you know what to do?)

- III. QUESTIONS: (i.e. Can you think of any ambiguous words that were used? Are there any classroom seating arrangements that were missed? Did you get confused when you had to move from the teaching style section to the section on seating?)

I greatly appreciate your assistance.

Marvin A. Camfield

APPENDIX C

TEACHING STYLE AND CLASSROOM SEATING ARRANGEMENT QUESTIONNAIRES

I N S T R U C T I O N S

For each item on the attached computer score sheet there are five blocks. Please use a pencil to check your opinion of the statements on the next page according to the following meanings.

- | | | |
|----|-------------------|---|
| 1. | STRONGLY AGREE | Means that you are heartily
in favor of the view expressed
in the statement and that there
are very few exceptions, if any. |
| | 0 0 0 0 0 | |
| 2. | AGREE | Means that you are in favor of
the statement in principle and
as a general rule, but realize
there may be a few exceptions. |
| | 0 0 0 0 0 | |
| 3. | UNDECIDED | Means that you have never thought
about this as a problem before
and, now that it is brought to
your attention, have no views
one way or another. |
| | 0 0 0 0 0 | |
| 4. | DISAGREE | Means that you do not favor the
statement as a general idea but
realize there may be a few
exceptions. |
| | 0 0 0 0 0 | |
| 5. | STRONGLY DISAGREE | Means that you are definitely
opposed to the idea expressed
in the statement and believe
there are few, if any, exceptions. |
| | 0 0 0 0 0 | |

Ignore the letters A & D on the answer sheet as they do not apply.

THANK YOU

PLEASE GO TO THE NEXT PAGE

PART A
TEACHING STYLE QUESTIONNAIRE

On the computer sheet--Please check your opinion of the following items: Block 1 if you strongly agree, 2 if you agree, block 3 if you are undecided, 4 if you disagree and block 5 if you strongly disagree.

1. A student should have control over the selection of activities so that he/she selects his/her own instructional outcomes.
2. Concepts are the basis of knowledge.
3. Instruction should emphasize the maximization of unique personal development.
4. The social involvement of group investigation is a route to academic inquiry.
5. The teacher should recognize that the individual is capable of handling his/her own learning in constructive ways.
6. The sequence of learning should be broken down into small units to assure success at each step.
7. The school has to be an active participant in the continuing development of culture.
8. Positive and negative reinforcement both can increase response probability.
9. In a complex, interdependent world, the individual's well being is closely related to the larger social structure.
10. The task of the school is to identify clear, stable, and organized bodies of knowledge within the disciplines.
11. Teachers are able to define all goals and objectives in terms of observable behavior.
12. The student must take responsibility for initiating and maintaining learning activities.
13. Instruction should emphasize the relationships of the person to society.
14. Good lectures and demonstrations can lead to meaningful learning.

15. The role of the teacher is to retain control of the intellectual structure of the classroom.
16. Behavior modification can be used to extinguish objectionable behavior as well as to establish behavior responses in subject matter areas.

THANK YOU! PLEASE GO TO THE NEXT PAGE
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PART B
CLASSROOM SEATING ARRANGEMENT QUESTIONNAIRE

Questions 17 to 30 refer to your use of different classroom seating arrangements.

Please mark the computer form under 1 if you use the situation daily, mark 2 if you use the situation weekly, 3 if monthly, 4 if yearly, and mark 5 if you never use that situation.

17. How often do you change the seating pattern of your classes?
18. How often do you use a seating chart to take roll?
19. How often do you allow students to sit where they want to?
20. How often do you assign seats to students?
21. How often do you assign seats to students based upon their personal needs?
22. How often do you assign seats for disciplinary reasons?
23. How often do you assign seats to students based on their academic ability?

How often do you use the following seating arrangements?

24. Straight rows and files?
25. A large circle of all the students?
26. A horseshoe shaped arrangement?
27. The total class divided into small groups of 4 to 8 students?
28. One small group of 4 to 8 separated from the class?
29. One or two students separated from the class?
30. Other type (Please write on computer sheet)

THANK YOU

Please mail your completed computer form to the researcher in the attached envelope. Do not sign the form or identify yourself in any way. The questionnaire is yours to keep for reference purposes. Again, thank you very much for your assistance.

APPENDIX D

LETTER REQUESTING PRINCIPALS' ASSISTANCE

November 2, 1979

Principal:

May I request your assistance in a project concerning middle school teachers in Tennessee?

I am attempting to complete my doctorate at The University of Tennessee. As you may know from your own personal experience, educational research is impossible to conduct without extensive cooperation at all levels. Your support will be extremely helpful. My research depends upon your assistance.

I seek to examine the relationships between the teaching styles of middle school teachers and their use of classroom seating arrangements. All I ask is that you selectively distribute the enclosed ten questionnaires to every other teacher on your school roster. Please encourage them to mail the completed computer form.

In return for your assistance, I will send you a copy of the results of my study. You and your staff may keep the questionnaires for future reference.

If you have any questions or require further information, please write or call me. Thank you for your most essential assistance.

Sincerely,

Marvin Camfield
HS-8 Hearthstone
Morristown, TN 37814
(615) 581-2121

APPENDIX E

LETTER REQUESTING TEACHERS' COOPERATION

November 2, 1979

Middle School Classroom Teacher:

Very little research has been completed on middle school teachers. I believe middle school teachers have one of the most difficult age groups to teach. The ways that you teach and the way you arrange your students should be of great interest to the educational community. For these reasons I have chosen to study middle school teachers for my doctoral dissertation.

I need your assistance to meet my goal of attempting to examine the relationships that may exist between teaching style and a teacher's use of seating arrangements. The attached questionnaire has only thirty items, takes only a few minutes to complete, and is anonymous. No references will be made to individual teachers or schools in the research. Your scores will be pooled with those of other middle school teachers from across the state.

Your completion of this questionnaire will constitute your informed consent to participate in this study as required by the Code of Federal Regulations 45 CFR 46, 103C, March 13, 1975. You can withdraw any time and no penalty of any type will be given.

Please help me in my research by taking time from your busy schedule to complete the attached questionnaire and mailing your computer form. You may keep the questionnaire for reference purposes. A copy of the results of the study will be sent to the principal of your school for your review.

Again thank you for your assistance.

Sincerely,

Marvin A. Camfield
HS-8 Hearthstone
Morristown, TN 37814
(615) 581-2121

APPENDIX F

TEACHERS' RESPONSES TO TEACHING STYLE QUESTIONNAIRE

(SD=Strongly Disagree, D=Disagree, N=Neutral, A=Agree, SA=Strongly Agree)

1. A student should have control over the selection of activities so that he/she selects his/her own instructional outcomes.

Strongly Disagree 44, Disagree 102, Neutral 14, Agree 27, Strongly Agree 2
SD 44, D 102, N 14, A 27, SA 2

2. Concepts are the basis of knowledge.
SD 1, D 16, N 23, A 105, SA 44

3. Instruction should emphasize the maximization of unique personal development
SD 0, D 17, N 17, A 106, SA 49

4. The social involvement of group investigation is a route to academic inquiry.
SD 2, D 14, N 29, A 126, SA 17

5. The teacher should recognize that the individual is capable of handling his/her own learning in constructive ways.
SD 20, D 54, N 32, A 67, SA 16

6. The sequence of learning should be broken down into small units to assure success at each step.
SD 1, D 8, N 9, A 84, SA 87

7. The school has to be an active participant in the continuing development of culture.
SD 3, D 4, N 10, A 96, SA 76

8. Positive and negative reinforcement both can increase response probability.
SD 3, D 11, N 21, A 110, SA 44

9. In a complex, interdependent world, the individual's well being is closely related to the larger social structure.
SD 3, D 13, N 30, A 111, SA 32

10. The task of the school is to identify clear, stable, and organized bodies of knowledge within the disciplines.
SD 2, D 13, N 23, A 112, SA 39

11. Teachers are able to define all goals and objectives in terms of observable behavior.
SD 26, D 95, N 24, A 39, SA 5
12. The student must take responsibility for initiating and maintaining learning activities.
SD 23, D 64, N 20, A 62, SA 19
13. Instruction should emphasize the relationships of the person to society.
SD 4, D 7, N 22, A 119, SA 37
14. Good lectures and demonstrations can lead to meaningful learning.
SD 1, D 5, N 2, A 93, SA 88
15. The role of the teacher is to retain control of the intellectual structure of the classroom.
SD 2, D 27, N 27, A 96, SA 36
16. Behavior modification can be used to extinguish objectionable behavior as well as to establish behavior responses in subject matter areas.
SD 2, D 13, N 19, A 120, SA 35
17. Number of teachers in each style of teaching:

Information Processing	67
Social Interaction	54
Personal Sources	2
Behavior Modification	19
Not Classifiable	47

APPENDIX G

TEACHERS' RESPONSES TO CLASSROOM SEATING ARRANGEMENT QUESTIONNAIRE

(D=Daily, W=Weekly, M=Monthly, Y=Yearly, and N=Never)

1. How often do you change the seating pattern of your classes?
D 16, W 18, M 99, Y 30, N 22
2. How often do you use a seating chart to take roll?
D 46, W 5, M 6, Y 10, N 121
3. How often do you allow students to sit where they want to?
D 61, W 24, M 40, Y 21, N 41
4. How often do you assign seats to students?
D 37, W 22, M 55, Y 46, N 28
5. How often do you assign seats to students based upon their personal needs?
D 96, W 36, M 32, Y 12, N 12
6. How often do you assign seats for disciplinary reasons?
D 59, W 49, M 44, Y 17, N 19
7. How often do you assign seats to students based on their academic ability?
D 20, W 14, M 21, Y 12, N 121
8. How often do you use straight rows and files?
D 86, W 15, M 27, Y 22, N 38
9. How often do you use a large circle of all the students?
D 6, W 12, M 31, Y 35, N 105
10. How often do you use a horseshoe shaped arrangement?
D 14, W 9, M 27, Y 26, N 112
11. How often do you divide the total class into small groups?
D 24, W 27, M 63, Y 27, N 47
12. How often do you use one small group separated from the class?
D 21, W 10, M 23, Y 25, N 110
13. How often do you separate one or two students from the class?
D 22, W 23, M 27, Y 29, N 86

APPENDIX H

TEACHERS' RESPONSES BY STYLE

(Style 1=Information Processing, Style 2=Personal Sources,
Style 3=Social Interaction, and Style 4=Behavior Modification)

INFORMATION PROCESSING STYLE TEACHERS

<u>STYLE</u>				<u>STYLE</u>				<u>STYLE</u>				<u>STYLE</u>			
<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>
18	12	15	14	17	14	16	16	17	10	15	14	17	11	15	11
18	9	12	14	17	10	16	15	15	10	14	14	16	14	15	14
20	17	18	17	17	15	16	14	20	13	19	17	18	11	17	16
18	16	17	15	19	9	17	15	18	12	13	15	16	13	15	15
17	10	16	16	18	15	17	15	17	13	16	16	16	11	14	15
16	6	9	10	20	6	16	12	17	15	14	13	19	12	17	16
17	13	15	15	15	13	13	13	18	13	16	16	18	10	16	14
20	10	16	13	19	13	18	16	16	12	14	12	19	12	15	17
17	11	15	12	18	12	12	14	18	14	17	14	20	11	18	15
20	13	18	19	18	15	15	14	17	9	15	15	20	9	15	17
19	18	16	16	15	13	13	9	17	9	14	16	16	14	13	11
19	9	17	16	16	12	13	14	16	12	14	12	18	15	15	17
18	11	13	16	18	14	15	17	15	11	14	11	18	7	17	13
17	8	16	13	19	10	16	14	17	11	14	14	18	5	16	15
19	14	18	16	14	10	12	12	17	12	16	16	18	16	16	14
20	14	18	17	16	15	15	14	17	13	16	14	18	9	17	16
16	14	14	14	16	13	15	13	16	9	12	14				

BEHAVIOR MODIFICATION STYLE TEACHERS

<u>STYLE</u>				<u>STYLE</u>				<u>STYLE</u>				<u>STYLE</u>			
<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>
15	8	16	17	16	15	18	19	10	10	14	16	13	9	7	16
16	14	18	19	16	12	16	18	16	11	17	19	18	13	17	19
14	10	14	17	12	9	13	16	16	13	16	18	14	9	18	19
14	14	15	17	16	17	16	18	16	14	16	17	9	10	9	11
17	12	16	18	16	11	15	17	12	9	14	15				

SOCIAL INTERACTION STYLE TEACHERS

<u>STYLE</u>				<u>STYLE</u>				<u>STYLE</u>				<u>STYLE</u>			
<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>
14	10	16	14	15	9	16	14	12	10	15	14	14	8	20	15
17	13	18	16	14	11	17	11	13	10	14	11	13	14	17	12
11	10	16	11	16	12	19	10	12	15	16	12	15	12	16	10
17	12	18	16	14	10	17	11	14	12	19	13	15	12	16	13
14	8	16	14	14	15	19	14	14	8	16	15	15	12	16	14
15	15	17	15	17	12	18	17	16	14	18	13	19	16	20	18
15	15	16	15	15	13	17	15	15	10	19	17	16	14	17	14
13	14	16	15	13	9	17	13	16	13	19	14	17	17	18	17
8	7	10	9	14	11	16	15	12	11	15	12	15	12	17	15
15	14	16	13	13	13	18	10	15	13	17	13	16	14	17	16
14	11	16	15	15	14	17	14	16	14	18	12	15	10	18	16
16	14	17	14	15	11	16	14	13	10	16	14	14	14	15	14
13	12	17	14	14	8	16	13	14	11	16	12	14	12	18	14
14	11	17	14	15	10	16	12								

PERSONAL SOURCES STYLE TEACHERS

<u>STYLE</u>				<u>STYLE</u>			
<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>
15	16	13	9	15	16	14	13

TEACHERS NOT IDENTIFIABLE

<u>STYLE</u>				<u>STYLE</u>				<u>STYLE</u>				<u>STYLE</u>			
<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>
15	11	15	13	15	13	16	16	16	14	17	17	17	10	17	14
17	10	17	14	17	10	17	14	17	8	17	11	15	12	15	14
17	17	17	17	18	13	18	17	17	9	16	17	11	16	11	16
16	16	16	16	16	14	17	17	17	14	17	17	15	15	15	15
14	12	13	14	17	10	17	14	16	12	15	16	19	13	17	19
12	15	15	14	16	11	16	13	18	18	8	16	19	17	19	18
15	15	13	14	16	14	16	12	14	11	16	16	17	12	17	14
15	10	15	14	17	10	16	17	12	8	15	15	17	9	17	14
18	13	14	18	17	12	16	17	16	13	16	14	14	9	14	13
18	17	15	18	17	13	17	16	16	11	12	16	13	18	18	14
16	12	16	14	14	15	15	15	16	14	16	15	17	16	17	13
16	10	16	15	16	12	16	16	18	18	16	17				

VITA

Marvin A. Camfield was born in Bronson, Michigan, on April 7, 1941. He attended a one-room country school and graduated second in a class of two from the eighth grade as a member of the final class in the school's existence. He graduated from Bronson High School, Bronson, Michigan, in 1959. He attended Adrian College, Adrian, Michigan for two years. He then attended Western Michigan University, Kalamazoo, Michigan where he student taught in an inner city junior high school. He graduated from Western Michigan University in 1964, receiving the Bachelor of Science degree in Secondary Education.

After graduation he briefly taught social studies and English at the Michigan Reformatory for Boys, Ionia, Michigan. In 1964 he entered the Armed Services and served in the Army for three years. While in the Army, he toured the Orient and taught evening courses in social studies and English for the Special Services Office, Okinawa, Japan.

In 1967, he was employed by White Pigeon High School, White Pigeon, Michigan, as a social studies and English teacher. He also coached cross country and track.

In 1969, he entered Ball State University, Muncie, Indiana, as a graduate student in sociology. While at Ball State he was employed by Region IV of the Indiana State Criminal Justice Planning Agency as a research assistant. In 1970, he received his Master of Arts

degree from Ball State. His thesis was entitled, "The Relationship between Police Training and Police Officers' Attitudes toward the Courts."

In 1970, he was employed by the Department of Social Services at East Tennessee State University, Johnson City, Tennessee, as an instructor in the Social Services Department. The following year, he began graduate studies at The University of Tennessee, Knoxville, Tennessee, in the Department of Sociology where he was employed as a teaching assistant. In 1972, he was employed as an Assistant Professor of Sociology at Walters State Community College, Morristown, Tennessee. While at Walters State he coached both men and womens' cross country and track teams.

In 1977, he entered The University of Tennessee's College of Education where he was employed as a teaching assistant in the Department of Social Foundations. He returned to Walters State in 1978. In June, 1980, he received the Doctor of Education degree with a major in Curriculum and Instruction from The University of Tennessee, Knoxville, Tennessee.