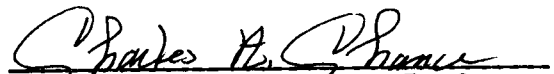
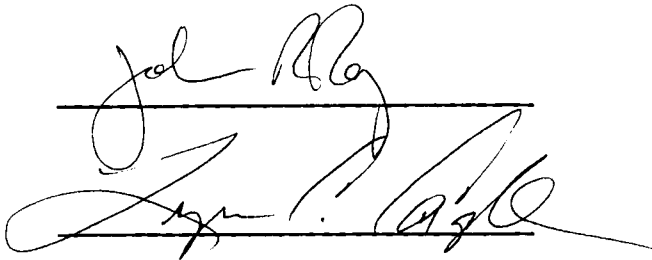


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KINDERGARTEN CHILD-CHILD INTERACTION
DURING
ATTENTION DEMANDING CLASSTIME:
AN ETHNOGRAPHIC INQUIRY

A Thesis
Presented for the
Master of Science
Degree
The University of Tennessee, Knoxville

Judith Collins Hiscock

December 1986

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I hereby acknowledge with thanks the many hours that William Hiscock devoted to proofreading this manuscript.

ABSTRACT

Inattentiveness exhibited by child-child interaction during attention demanding classtime can be a hindrance in the learning process. Teachers use many methods to control this inattentiveness, which is affected by certain environmental and subject related factors. This phenomenon was investigated at the University of Tennessee, Knoxville, during a ten week period from March to June, 1986. Data were collected with ethnographic methodologies in three schools and nine classrooms by observation, interview, survey, and sociogram, and were examined for patterns in interaction correlating with patterns in environmental and subject related factors.

The results revealed that patterns did exist, and there were correlations in the discovered patterns among interaction, environmental, and subject related factors, which could be altered in order to minimize interaction. Interpretation concluded that the teacher, school administration, and school system administration must work together in order to achieve change in the patterns and reduce the frequency of interaction.

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CHAPTER I

INTRODUCTION AND METHODOLOGY

1. INTRODUCTION

Visiting any kindergarten classroom for a short period of time an observer would see the teacher attempt to get and keep the children's attention several times. Teachers use a variety of methods to keep young children paying attention to the carefully planned learning experiences of the school day. Scanning the class constantly, the teacher searches for clues indicating that a child has become interested in something other than the planned learning activity. When a distracted child is observed, a decision must be made on how to return the child's attention to the desirable learning experience. Questions arise concerning what the teacher has observed, what actions will be taken, and what conditions existed during these occurrences that may have contributed to their happening.

2. PROBLEM STATEMENT

In kindergarten classrooms teachers attempt to keep children attending to carefully planned learning experiences. In order to enable educators to plan learning activities in such a way that attentiveness is maximized, leading to more learning, the conditions surrounding inattentiveness need to be identified. One specific type of inattentiveness is child-child interaction. When children interact with each other, they cannot remain attentive to presentation or

individual completion of learning materials (Packard, 1970). The problem was the identification of patterns of child-child interaction correlated with patterns of environmental and subject related factors.

3. PURPOSE OF THE STUDY

The present study was conducted in order to identify the patterns of child-child interaction inattentiveness in kindergarten classrooms related to the conditions surrounding the interactions. The identified patterns in child-child interaction and teacher intervention were examined for a relationship with corresponding environmental and subject related factors during the classtimes when presentation or individual completion of learning materials was planned.

Interactions and interventions were examined by age of child, gender of child, age/gender of child, and class, and by three types: gesture, verbal, and physical. Environmental factors included: activity type and length, stimuli type and frequency, classroom environment, and classroom interruptions. Subject related factors were teacher, teacher's condition, child, and child's condition.

4. ASSUMPTIONS

Three assumptions were made during this study:

1. Child-child interaction patterns were related to the environmental and subject related factors surrounding inattentiveness in kindergarten classrooms and could be identified.

2. Teacher intervention patterns of child-child interactions were dependent on child-child interaction patterns.

3. When these patterns were recognized, any classroom inattentiveness could be analyzed by searching for the patterns, and if any of the identified patterns are discovered, conditions could be altered in such a way that interactions are reduced.

5. DEFINITIONS

Terminology employed in this study included:

1. Learning activity - any teacher planned group or individual contact with learning materials.

2. Inattentiveness - when any child was not participating in planned learning activities.

3. Interaction - when any child attempted communication or successfully communicated with any other child.

4. Intervention - any attempt to stop or successful halt of a child-child interaction by the teacher.

5. Characteristics of interaction/intervention participants:

a. Age - 5.5-5.9 or 6.0+ years.

b. Gender - Boy or Girl.

c. Age/Gender - 5.5-5.9 Boys, 5.5-5.9 Girls, 6.0+ Boys, or 6.0+ Girls.

d. Class - when more than two isolated interactions involving more than three children were occurring simultaneously, or when the teacher intervened with the entire class.

6. Types of interaction/intervention:

- a. Gesture - any time one person made a face at or demonstrated with their hands or body to another person.
- b. Verbal - any instance where one person spoke to another.
- c. Physical - any time one person touched another with any part of their body or an object.

7. Categories of time spent in schools:

- a. Total time - all time measured in minutes spent in the schools.
- b. Observing time - time spent in the classrooms.
- c. Interview time - the difference between total time and observing time, spent interviewing adult subjects.
- d. Activity time - classroom time when learning activities demanded the children's attention.
- e. Free time - the difference between observing time and activity time, when the children were allowed to interact, and when all sociograms, child interviews, and some teacher interviews were conducted.

8. Environmental factors - any classroom factors affecting the classroom and learning activities. These included:

- a. Activity type - three divisions of children with different placement in the classroom for presentation or completion of learning activities during activity time. The types included: large group (all of the children in a central location for presentation), small group (part of the children in a central location for

presentation), and seatwork (all of the children working individually at desks or tables).

b. Activity length - time measured in minutes that a learning activity lasted.

c. Stimuli type - which of the five senses, visual, auditory, tactile/kinesthetic, olfactory, gustatory, or combinations, that a learning activity stimulated.

d. Stimuli frequency - the count of stimuli types.

e. Classroom environment - facilities and equipment in the classroom, and weather.

f. Classroom interruptions - any learning activity interruption originating from outside the classroom.

9. Subject related factors - any personal characteristics affecting the subject's (teacher's or child's) behavior. Divisions within subject factors:

a. Teacher - personal characteristics of the teacher and all of the classroom environmental factors that the teacher controlled, such as activity type, planned stimuli, and intervention type and frequency.

b. Teacher's condition - changeable physical, mental, and emotional states of the individual teacher subjects.

c. Child - age and gender of the child.

d. Child's condition - changeable physical, mental, and emotional states of the individual child subjects.

6. METHODS AND INSTRUMENTS

The research design of this study was ethnographic in nature. It consisted of observations, interviews, surveys, and a sociogram. The observations were recorded on a standard observation form eight and one-half inches wide by eleven inches long with two lines running the length of the paper one and one-half inches from each edge. In the left-hand section the date, time, and patterns discovered were recorded. In the middle section the direct observations were recorded. Any researcher comments about the observations were written in the right-hand section. A sample is included in Appendix A. This conventional form has been used in previous studies by the researcher and Alanson Van Fleet, Ph.D.

The interviews were also recorded on the observation form. They were either recorded as they happened, or were taped and transcribed from the tapes at a later time. Just before or after the interviews, the researcher recorded any observations about the subject, environment, or interview itself, such as descriptions of the subjects including age, gender, appearance, and mannerisms, descriptions of the environment including furnishings and activity, and any other observations that appeared related to the research such as distracting stimuli. Writing during the interviews was avoided when possible. Any impressions that the researcher had during the interview were recorded and investigated in a later meeting when time permitted.

Two surveys were conducted during the study, which may be found in Appendix B. The first was completed by the principals, collecting

socioeconomic data about the student subjects in the individual schools. The second survey was developed from interview data, previously collected, concerning environmental and subject related factors. The four items on the survey were discussed with each teacher as the surveys were distributed so that terminology was clear. This was to insure that each teacher had the same opportunity to contribute information, since interview time and scheduling was not consistent among the three schools.

The sociogram was conducted according to the How to Construct a Sociogram (Columbia University, 1947) model. The data were collected orally on tape, and later transferred to paper. Data were then examined for patterns in preference of playmates by age and gender to determine the children's playmate preference and popularity. These data were compared with interaction data and teacher interpretations of child attentiveness factors for pattern relationships.

7. PROCEDURES

The present study lasted for ten weeks covering three days per week and one to three hours per day depending on class activities. One day each week was spent in varying classrooms in each school, except in School Two, where the same class was observed each time. The first through fourth weeks consisted of observations and interviews, with the principal surveys given out in the third week. During the fifth and sixth weeks the sociogram was completed, and observation and interviews were conducted whenever possible. The

seventh through tenth weeks completed the observations and interviews, and the teacher surveys were distributed in the eighth week.

The observations covered all of the occurrences during activity times when learning activities demanded the children's attention. The activity type and length, stimuli type and frequency, and interaction/intervention total frequency, type frequency, and child subject descriptions were recorded. Subject age was usually obtained from the teacher at a later time.

Interviews were conducted informally as though they were conversation. This method was chosen to keep the subjects at ease. The child subjects remained in the classroom during the interviews, which were conducted during class free times when there was movement and talking allowed. The teacher subjects were interviewed as soon after the observation as possible, usually in the classroom during class free time, or during lunch or special class times when the children were not present, and in a few instances, the teachers called the researcher by telephone after school hours. The principal and other school staff were interviewed at the schools when the researcher was not observing. The researcher occasionally became a participant observer in order to form relationships with the subjects. "The term suggests that you are directly involved in community life, observing and talking with people as you learn from them their view of reality." (Agar, p. 114). She prepared materials, read books to the children, and substituted for ill teachers during the study. Strong bonds were formed with several of the subjects.

The principal survey was distributed the third week of the study, and the teacher survey was given out in the eighth week of the study. The surveys were given to each subject with a self-addressed, stamped envelope. The respondent filled in the information, and mailed the surveys to the researcher. The surveys were not opened until after the last observation and interview were conducted.

Recordings for the sociogram took place in a corner of the room. The children were told that they would be able to hear themselves on a tape recording. They were called one at a time to the corner and asked to sit down. The recorder was then turned on and the child was asked twelve questions pertaining to classroom playmates. The tape was then played for that child, and the next child was called. A list was kept of the order, age, and gender of each child allowing the researcher to keep track of the child's interviewed position.

8. SETTING

This study was designed to use three kindergarten classrooms in low, middle and high socioeconomic areas of a local school system. Many problems were encountered in finding schools willing to participate in research studies. The researcher was forced to call the schools without knowing the total student enrollment, total average student family income, or racial proportions of any schools. The schools were all visited the week before spring break for the first time, and once each week for nine more weeks, ending the visits on the last week of school for the children.

The three schools that eventually consented to participate were very similar in enrollment and racial proportions, however, they were very different in socioeconomic level, class structure, and grade levels contained in the buildings. Each school placed different constraints on the way that the study was conducted, forcing many limitations on the research.

9. LIMITATIONS

One major limitation of the study was the observation recording form. Even though the researcher was familiar with this form, and had used it previously, no reference for it could be found.

The observations were limited by having only one observer, observing for only ten weeks, and limitations placed on the researcher by the school administration and individual class scheduling. The observer was experienced, however, having only one observer limited the viewpoint, and the ability to see everything in all areas of the classrooms. To compensate for this the researcher tried to pick a point where the total group could be seen, and discuss the observations with the teacher in each classroom. Many interactions were not observed, and statistical counts should not be considered complete, but the observer was consistent in focusing on activity time, and obvious interactions between children when the instructions were to attend to planned stimuli. Discussing interactions with the teacher gave a second viewpoint.

The ten week observation period was determined by the school year. Permission to enter the schools could not be obtained earlier from the system, and the school year ended the same week as this study. This could not be compensated for in any way. Results may have been different if the study had been conducted at another period during the school year, or for a longer period of time.

The administration of each school placed different constraints on the way that the research was conducted. School One allowed the researcher to come on any day at any time, but requested that the researcher move from room to room so that every classroom was observed. School Two allowed the researcher to come on any day at any time and to stay in one room. School Three allowed the researcher to come only on Wednesday mornings, and instructed her to move through many classrooms. Also, types of activities observed were limited by individual school and class plans.

The interviews were limited by time. The teachers had to answer questions during breaks in the classtime, lunch time, or after school, however, all of the teacher subjects were extremely cooperative and willing to give much of their own time.

The surveys were developed from the necessary, lacking information, and from previous teacher interviews. They were not pretested, but since they followed verbal discussions on the same topics with terminology clarification, no pretest was considered necessary.

Moving from room to room did not allow the sociogram to be conducted at School One or School Three. School Two was the only group where the children remained in the same class for the whole day. Therefore, the sociogram data could not be compared among schools, but correlations could be made for School Two.

The subject population was not controlled by the researcher. Since the school administration did not choose the schools, and the researcher was not familiar with the schools before the study, schools were chosen because of their willingness to participate, not for their socioeconomic placement within the system, however, the three schools were revealed to be quite different in socioeconomic levels, but very similar in racial proportions.

The children's ages were obtained from the teachers, usually from memory. Since the teachers did not always appear to be sure of birthdates, the age data should not be considered totally reliable.

CHAPTER II

RELATED LITERATURE

Educators need to have some defined behaviors for use in classroom observation. Attention as defined by Packard (1970, p. 15) is:

- (1) bodily position appropriate to stimuli, as indicated by the teacher's rules for the class . . .
- (2) appropriate silence . . . and
- (3) responding appropriately to instructions as given by the teacher to the students during the class period

This definition can be easily applied to any observational setting, allowing the observer to quickly decide if the child is paying attention to the desired stimuli. Packard (1970, p. 13) also defined "classroom attention" as "a complex and fluctuating set of stimulus-response relationships involving curriculum materials, instructions from the teacher, and some prerequisite student behaviors. . . ." Studies of children's attention and "classroom attention" could provide valuable information to educators on maintaining children's attention to the planned stimuli.

Researchers have determined that keeping the children's attention on the planned stimuli is important to their academic performance (Gilmore, 1968; Packard, 1970; Sprague and Toppe, 1965). This research accounts for the constant concern educators express for ways of keeping children attending to these stimuli (Bloom, 1974; Miley, 1974; Turnure, 1970; Turnure, 1971). The first step in controlling attending behavior is to be able to measure the behavior, consequently

inventories have been developed for this purpose (Schaefer and Edgerton, 1978). These measurement processes are usually dependent on observation and behavior counts by trained staff in order to determine the extent of distraction.

One type of inattentiveness is child-child interaction. Interactions usually take the form of verbal exchanges (Factor and Frankie, 1985), but occasionally are nonverbal, also. Nonverbal includes any communication other than verbal (Andersen, Andersen, Murphy, and Wendt-Wasco, 1985). When interactions occur at inappropriate times teachers may attempt to return the participants to the planned learning stimuli. These actions are referred to as interventions, and are usually in verbal form, however:

"At times students and teachers may make inferences about one another's feelings or attitudes simply by observing particular nonverbal behaviors, such as posture of facial expression, without being engaged in an interaction with each other. . . . At other times the teacher and the students are involved in clear behavioral exchanges . . ." (Woolfolk and Galloway, 1985, p. 78).

Each teacher has his/her own tolerance level and way of intervening (Wolfgang and Brudenell, 1983). Two distinct types of interventions have been identified. Direct intervention refers to interaction between the teacher and the interacting children attempting to halt the interaction. Indirect intervention refers to the teacher giving positive reinforcement to children who are not interacting in order to halt interaction between other children, or altering the conditions surrounding the interaction. This could include introducing his/her presence to the area of interaction

without direct intervention, or changing the environmental factors (Elliott, Witt, Galvin, and Peterson, 1984).

When two teachers are present in the classroom, as in a team teaching situation, one of the pair will assume a leadership role (Ables and Conway, 1973). This teacher will take the lead in most classroom activities including intervention.

Children are grouped in different ways for different activities. Children may be grouped either as a whole with all children participating, or divided into two or more smaller groups. While grouped either way, they may be involved in teacher or peer presentation of learning stimuli, work individually on assigned learning activities, or be allowed to freely choose activities and interact with each other (Hallinan and Sorensen, 1985; McAfee, 1985).

An important factor in maintaining attention is the length of the activity (Tyler, Foy, and Hutt, 1979). The duration of time that the children are in direct contact with the learning stimuli is related to the retention of desirable information but short, repetitive exposures are preferable to long, infrequent ones (Bloom, 1974).

Another important factor in attending behavior is the type of stimuli presented, i.e., kind of activity, media, book, etc. (Packard, 1970; Rusnock and Brandler, 1979). The stimulus selected should be age appropriate, aesthetically appealing, and involve the children as much as possible. The greater the children's physical involvement and the greater number of the children's five senses that

are involved with the stimuli, the greater the likelihood of maintaining their attention.

There are many classroom factors affecting the children's ability to pay attention, however the most important control seems to be the teacher. Tyler, Foy, and Hutt (1979, p. 197) noted that:

The effect of the adult however, in harnessing and focusing the child's attention is dramatic . . . the most important factor appeared to be the involvement of the adult in focusing the child's attention.

The organization and control that a teacher exhibits over the classroom through planned activities and managing children's behavior directly influences the amount of time children remain attentive (Samuels and Turnure, 1974). The teacher must plan activities well and use many methods of reinforcement in order to maintain behavior control and assure order to the classroom allowing all children to focus on the planned learning stimuli.

The teacher's physical and emotional state can affect the way that he/she conducts her classroom and his/her interaction with the children (Blase, 1985; Wasserman, 1985). Job related factors can affect the teacher's condition, as well as personal factors. Three of the most prevalent job related factors are feelings of nonsupport from the administration, teacher evaluation, and parental attitudes (Wassermann, 1985; Kauchak, Peterson, and Driscoll, 1985).

Parents are as stressful about school, as teachers are about parental attitudes. They can suffer from "Parent Burnout" resulting from the demands of work and family, low educational level, mistrust and anxiety when dealing with school staff, loss of "perfect child"

fantasy, and lack of coordination and information from the school (DuFrene, 1985). Among low-income parents the concept of schooling is to give their children an education like wealthier or "respectable" children, but they seem to suspect the school of neglecting poorer children (Brantlinger, 1985).

The age (Turnure, 1970) and the sex, or gender, (Samuels and Turnure, 1974) of the children can be factors in attention loss. Studies have shown that some younger children and more young boys seem to have trouble with being distracted than older children and girls of the same age. These factors do not affect all children, but they are important to the attending behaviors of many children.

The child's physical and emotional state can affect behavior as well as the teacher's. Physical discomfort as well as emotional stress can cause the child to become inattentive, and interact, or misbehave in the classroom, adding to classroom interruptions (Wassermann, 1985).

Using children to teach or tutor has been proven to be an effective means of maintaining attention. Not only do children hold other children's attention better than adults, but achievement test scores rise when children teach for both student and tutor (Greenwood, Dinwiddie, Terry, Wade, Stanley, Thibadeau, and Delquadri, 1984; Harris, Rosenthal, and Snodgrass, 1986).

Environment within the classroom can influence the amount of time the children remain attentive (Rusnock and Brandler, 1979; Samuels and Turnure, 1974; Tyler, Foy, and Hutt, 1979). The physical surroundings

can encourage distraction, the noise level can impede listening, overcrowding can encourage unwanted peer interactions, unexpected interruptions can disrupt classroom attention. Class size has been shown to be an especially big influence of which teachers are very aware (Whittington, Bain, and Achilles, 1985; ERS Staff Report: Teachers and Class Size: Their Problems and Views; 1985). Any environmental factor can influence children's behavior thereby interfering with their ability to pay attention to the desirable stimuli.

The attending behaviors of children to planned stimuli have been shown to affect the children's retention of desirable learning. In order to maximize academic performance educators work toward lengthening the time that children remain attentive to learning stimuli. Several factors that affect the ability of children to pay attention have been identified by research. Valuable information on extending the attending behavior of children can be learned from studying these factors.

CHAPTER III

SPECIFIC PROCEDURES

The present study consisted of observation, interview, survey, and sociogram data collected during ten weeks at three schools in nine kindergarten classrooms. The specific research procedures are outlined below.

1. DATA COLLECTION

Collection of all observation and sociogram data, and most interview data were completed during time spent in the schools. The remainder of the interview data and the surveys were collected during non-school hours.

Observations comprised all of activity time. Each activity was carefully recorded, attempting to keep track of the type and length in minutes, the type and frequency of stimuli, and the total occurrence frequency, subject frequency, and type frequency, including subject characteristics of interactions/interventions. The gender of the interaction/intervention child subjects was recorded, but the age was usually obtained from the teacher in a later interview from subject descriptions, and is not totally reliable.

Interviews were conducted with all teachers, some children, and several other people in each school, including two principals, several teachers not observed, and all school office personnel. One key informant emerged in each school: School One, Teacher B; School Two,

Teacher Z; and School Three, Teacher H. The informant that provided the most information was Teacher Z. Full descriptions of the schools and teacher subjects follow in the section on setting and subjects in this chapter.

Interview data, confirmed by related research, found fifteen factors suggested as affecting classroom interaction inattentiveness. All data were gathered from adult subjects, as child subjects provided negligible interview data.

The two surveys conducted during this study were returned either by hand or mail. Both were discussed with the respondents as they were distributed, and instructions and terminology were explained. Neither survey was examined until after the last observation and interview were conducted.

The first survey was to gather socioeconomic data from principals, and had 100.0% response, which is reported in the setting and subjects section of this chapter. The second survey was developed from interview and observation data, and was completed by the observed teachers. The teachers had 88.9% response, with only Teacher A not returning the form. This survey provided confirmation of interview data, and was determined necessary because interview time with the nine teachers was limited in some cases, therefore all teacher subjects could not contribute equally to the information.

The sociogram could be conducted in School Two only, as a result of the way children were grouped for learning in School One and School Three. The children were called one at a time to a corner of the

classroom, asked to sit down, and asked these questions after the recording began:

1. What is your name?
2. Do you know when your birthday is? Tell me.
3. Who do you like to play with at school?
4. Do you play with (child named) at home?
5. Did you know (child named) before you came to school?
6. Who else do you like to play with at school?
7. Do you live near (second child named)?
8. Did you know (second child named) before you came to kindergarten?
9. Name one more person that you like to play with at school.
10. Do you live near (him/her)?
11. Did you know (third child named) before you came to school?
12. Would you like to hear yourself now?

The tape was then played for that child and the next child was called from a list keeping track of the children's order on the tape.

2. SETTING AND SUBJECTS

The three schools used in this study were similar in enrollment and racial proportions, but very different otherwise. The following is a brief description of each school and the subjects.

School One

School One was a suburban elementary school with total enrollment of 455. The average student family income was between \$15,000 and \$25,000 per year, and the racial proportions for this school were 0.7% non-white. The school housed kindergarten through fifth grades and the principal was a late middle aged, white male who had been there for more than ten years.

There were three kindergarten homeroom classes of twenty-seven children in each class who were regrouped at certain times of day with the three teachers for different subjects, depending on the students level of achievement. Teacher A had taught for more than ten years, but had been in kindergarten for only two years. Teacher B had taught in kindergarten for all of her six years as a teacher, and Teacher C was a first year teacher. The rooms were extremely small, divided by curtain dividers that were permanently closed, and there was little storage space and no water supply. The rooms were located in an isolated section of the building near the office and across the hall from the gymnasium and the restrooms. The cafeteria separated these rooms from the other classrooms. The entrance and exit for the school was in the cafeteria area near the kindergartens.

The researcher was instructed by the principal to move among the kindergarten classrooms. The reason given was that the teachers requested that they not be observed every week, due to constant observations by evaluators.

School Two

A rural school located on the outlying edges of the school district, this school contained a kindergarten through fifth grade population in a new building. This was a large building with a total student population of 527, and total student average family income of \$13,000 to \$18,000 per year. The racial population of this school was 2.0% non-white. The principal was an early middle aged, white female

who had been at this school since construction, but a principal for less than five years. There were four kindergartens, which were all self-contained with no movement between rooms except in specially planned instances. The researcher was assigned to one room with twenty-two children and one teacher, who had been teaching kindergarten for more than ten years. The kindergarten rooms were located at the opposite end of the building from the main entrance in a hall by themselves. They were large and colorful with exits to the outside play areas. The rooms were constructed on multi-levels with adjoining locker/storage room, water supply, and restrooms.

School Three

Having only classes in kindergarten, transition, and first grade made this school unique. The school had a population of 462 students. The average student family income was \$45,000 to \$50,000 per year, and the racial proportions were 6.0% non-white. The entrance to the building was through the cafeteria, across a hall, and into the office. The classrooms surrounded the office area, which was in the center of the building, and most had outside entrances, little storage area, and no water supply. Restrooms were located centrally in the hall. Each of the classes observed was an open classroom situation containing two groups in each room. The teachers worked both as a team with the total group, and separately with their own twenty-five children.

The researcher was instructed to come only on Wednesday, which was Visitor's Day at the school, and to move around among the kindergartens so that the children would not interact with her, and the teachers would feel more comfortable. Only five rooms were observed for this study, however. The principal was a late middle aged, white female, who had been a principal for more than ten years. Teacher teams D/E, and F/G were all in their thirties and had been teaching kindergarten for more than five years. Teacher H was middle aged and had taught kindergarten for more than ten years. The team teacher for Teacher H and her group were never observed due to constant class movement in and out of the classroom during visits.

3. INTERACTIONS AND INTERVENTIONS

Interactions and interventions must be discussed together, since one is dependent on the other. Interactions were counted as one occurrence each time one child communicated with another child. Interventions were counted as one occurrence each time the teacher attempted to stop an interaction. This count includes only one tally for each attempted interaction, whether successful or not, and one tally for each intervention, even though several children may have been involved in the occurrence. The ratio of total interventions for the total interactions is a percentage found by dividing interventions by interactions and multiplying by 100. Hereafter, this percentage is referred to as "ratio".

A separate count of interaction and intervention data and ratios was also kept. This tally was of involved subjects by their characteristics of age, gender, age/gender, and class. The divisions included:

1. Age - 1.) 5.5-5.9 years, and 2.) 6.0+ years.
2. Gender - 1.) Boys, and 2.) Girls.
3. Age/Gender - 1.) 5.5-5.9 Boys, 2.) 5.5-5.9 Girls, 3.) 6.0+ Boys, 4.) 6.0+ Girls.
4. Class - when more than two isolated interactions were occurring simultaneously, involving more than three child subjects, or when the teacher intervened with the entire group.

The interaction and intervention types observed fell into three categories: gesture, verbal, or physical. Any time one person made a face at or demonstrated with their hands or body to another person, it was counted as a gesture. Verbal consisted of anytime one person spoke to another, and physical included any time one person touched another with any part of their body or an object. No ratios were calculated for the types, but tallies by subject characteristics listed above were kept.

4. ENVIRONMENTAL FACTORS

Several environmental factors were examined from data collection. Activity time was the time when all activity type and length, stimuli type and count, and interaction/intervention occurrence count, type count, and subject count occurred. Activity time consisted of three

activity types. Large group was when all of the children were brought to a central location for presentation of learning stimuli. Seatwork was any time when the children were expected to work with learning stimuli as individuals, usually at desks or tables, and small group was when the teacher was presenting learning stimuli to only a portion of the children, usually during seatwork for the rest of the class. When two types of activities were simultaneous, the researcher could observe only one, therefore data could not be recorded for the other. Activity length was recorded in minutes from the time the learning activity began until the teacher dismissed the class or changed the activity.

Stimuli types were based on which of the five senses the activity stimulated. Only six types were observed in the five categories and possible combinations. Olfactory and gustatory were not observed alone or in combination with any others. Visual, V, was not observed alone, but was observed in combination. Auditory, A, and tactile/kinesthetic, T/K, were observed both alone and in combination. The combinations observed were visual-tactile/kinesthetic, V-T/K, auditory-visual-tactile/kinesthetic, A-V-T/K, auditory-visual, A-V, and auditory-tactile/kinesthetic, A-T/K.

Other environmental factors examined were: classroom environment, including facilities, equipment, and weather, and class interruptions originating from outside the classroom.

5. SUBJECT RELATED FACTORS

Subject related factors were determined by the subject's position as a child or teacher, and which characteristics of the individual were addressed. Four categories were included in this area.

The category teacher included personal characteristics of the teacher and all of the classroom environmental factors that the teacher controlled, such as activity type, planned stimuli, and intervention type and frequency. Teacher's condition consisted of changeable physical, mental, and emotional states of the individual teacher subjects. The division entitled child encompassed age and gender of the child, and child's condition was changeable physical, mental, and emotional states of the individual child subjects.

6. DATA ANALYSIS

Data analysis for observations took the form of comparison of percentages of the totals in relation to percentage of time spent observing. All data collected during interviews were reported, and the most frequently mentioned data were investigated by the teacher survey, which was analyzed for frequency, position rating percentages, and consistency among the factors listed. The sociogram was examined by frequency of preference and compared to total interaction/intervention observation results and teacher attentiveness ratings on item three of the survey. All totals were analyzed for relationships among the patterns discovered.

All percentage values in this study were rounded to the nearest 0.1 with 0.00 to 0.04 rounding down, and 0.05 to 0.09 rounding up. The margin of error was 0.9%. The percentages were all based on totals.

Also examined for any patterns in all categories of data collection were data for weeks, schools, and teachers. During the observation period, four of the weeks were unique for the total school system. Week one was the week preceeding the system's Spring Vacation, and week two was immediately following Spring Vacation. Also, weeks five, six, and seven should be examined, because week six was the end of the year testing week for the children. Week ten was the last week of school for the year.

Since the three schools varied in the ways they were organized and operated, a comparison of the data seemed necessary. School One had self contained classrooms, but the children were ability grouped for specific subjects, and changed rooms and teachers. School Two was totally self contained classrooms except when individual teachers planned special events, and School Three was a team teaching situation where there were two classes and teachers in each room, who were individual groups part of the time and one large group part of the time.

There were a total of nine teachers observed. Teachers A, B, and C were at School One; Z was at School Two; and D, E, F, G, and H were at School Three. A, B, and C worked in separate rooms, but shared children. D and E were a team, F and G were a team, and H worked

alone, but was in a room with another teacher and class. The conditions revealed during the time spent with each teacher varied widely. When team teachers in School Three were working with the total group, time and interactions were divided equally, sometimes resulting in a total number ending in 0.5.

When comparing by week, school, and teacher the percentages must be compared with the percentage of time spent in each division, since the amount of time was not equal. Percentages of the totals of activity time, interactions/interventions with ratios, and stimuli can be found for weeks in Table C-1, for schools in Table C-2, and for teachers in Table C-3, and will be referred to throughout the discussion.

CHAPTER IV

RESULTS

Observation data revealed total time spent in the schools equaled 3240 minutes, and consisted of observing time totaling 2605 minutes, and interview time constituting 635 minutes. Observing time also consisted of two categories of data: activity time, 2256 minutes, and free time, 349 minutes.

Activity time consisted of three activity types. Large group had a total of 1062 minutes. Seatwork totaled 1049 minutes, and small group consisted of 145 minutes. Table 1 outlines the time values with percentages of the totals.

TABLE 1
TOTAL TIME AND PERCENTAGES

		Time Type					
min	min	%	min	%	min	%	
Activity	Large Group Time		Small Group Time		Seatwork Time		
2256	1062	47.1	145	6.4	1049	46.5	
Observing	Activity Time		Free				
2605	2256	86.6	349	13.4			
Total Time	Observing Time		Interview				
3240	2605	80.4	635	19.6			

min = minutes

Activity time total was 2256 minutes, which was the value used for activity type and length percentages. Interaction/intervention total occurrence frequency was 233/152, respectively, and type frequency was 384/185, respectively. Stimuli total was 126. These totals were used when calculating the percentages for comparisons.

The interviews collected fifteen factors believed by the subjects to contribute to child-child interactions. From these factors the teacher survey was developed.

The teacher survey consisted of four items. The first item asked the teacher to rate her present class as older, average, or younger. Teachers responded that 12.5% were older, 75.0% were average, and 12.5% were younger. This question was used to determine the teachers' perspective when answering the other survey questions.

Item two asked the teacher to list the factors that were most important in maintaining attentiveness. The thirty-nine factors listed were grouped to correlate with the eight factors in item four on the survey. The third item on the survey asked the teachers to rate older girls, older boys, younger girls, and younger boys according to attentiveness. Numerical rating numbers were used with 1 being most attentive and 4 being least attentive. The fourth and last item on the survey was rating eight of the interview data factors in attentiveness. Teachers were asked to rate these factors from 1 (most important) to 8 (least important). The factors were: 1.)

Environmental Factors of type of learning stimuli, classroom environment, weather, and classroom interruptions; and 2.) Subject

Related Factors of teacher, teacher's condition, child, and child's condition.

The sociogram had a total of twenty-two children involved. Eleven, 50.0%, were found in each age group of 5.5-5.9 and 6.0+ years. Percentages by gender were boys, twelve or 54.5%, and girls, 10 or 45.5%. In the 5.5-5.9 age group seven were boys, 31.8%, and four were girls, 18.2%; and in the 6.0+ age group five were boys, 22.7%, and six were girls, 27.3%. The average age for the group was 5.8 years, and the average ages for boys and girls were 5.7 and 5.8 years, respectively. There was a total of sixty-two choices. One 6.0+ girl made only one choice and two 5.5-5.9 boys made only two choices each.

The findings were viewed in the context of the patterns found in interaction/intervention, environmental factors, and subject related factors, and their relationship to each other. Each category was examined from total data, weekly data, school data, and teacher data, searching for patterns in each division.

1. INTERACTION/INTERVENTION PATTERNS

Total

The total frequency of occurrence for interaction was 233, and the total for intervention was 152. This gave an overall ratio of 65.2%.

A separate frequency of interaction/intervention data was also kept for the total. This tally was of involved subjects and their behavior in each occurrence. For the 233 interaction occurrences 384

children were involved, and of 152 intervention occurrences 185 children were involved. This gave an overall ratio of 48.2%. When examining type of interaction or intervention, or the subjects involved in the interaction or intervention these numbers must be used.

The 5.5-5.9 age group had the most interactions with 42.7%, but the Class interactions had more interventions with 39.5% for only 22.1% of the interactions. This gave Class the highest ratio of 85.9%. When comparing by gender, Boys had the highest interaction total, 48.7%, and was equal to Class in interventions, but remained lower than Class in ratio. In the age/gender category, 5.5-5.9 Boys had the highest percentage of interactions with 26.6%, and 6.0+ Boys and Class had 22.1% each. Class was still highest in interventions and ratio, but 5.5-5.9 Boys had a high percentage, 24.3%, of interventions and a ratio of 44.1%. Girls were low in both interactions and interventions both by gender and age/gender, but 5.5-5.9 Girls had a high ratio of 40.3%. Table 2 presents all interaction, intervention, and ratio data for age, gender, age/gender, and class.

Two patterns were discovered. First, younger children and boys interacted more. Also, teachers intervened more with class interactions, giving them the highest ratio.

TABLE 2
INTERACTIONS AND INTERVENTIONS WITH RATIOS
FOR AGE AND GENDER

Age or Gender	Interactions		Interventions		Ratio
	#	%	#	%	%
<u>Age</u>					
5.5 - 5.9	164	42.7	70	37.8	42.7
6.0+	135	35.2	42	22.7	31.0
Class	85	22.1	73	39.5	85.9
Total	384	100.0	185	100.0	48.2
<u>Gender</u>					
Boys	187	48.7	73	39.5	39.0
Girls	112	29.2	39	21.1	34.8
Class	85	22.1	73	39.5	85.9
Total	384	100.0	185	100.1	48.2
<u>Age/Gender</u>					
5.5-5.9 Boys	102	26.6	45	24.3	44.1
6.0+ Boys	85	22.1	28	15.1	32.9
5.5-5.9 Girls	62	16.1	25	13.5	40.3
6.0+ Girls	50	13.0	14	7.6	28.0
Class	85	22.1	73	39.5	85.9
Total	384	99.9	185	100.0	48.2

The interaction and intervention types observed fell into three categories: gesture, verbal, or physical. The most observed type was verbal, which had 81.0% of the interactions and 89.2% of the interventions. The interaction total for physical was 14.3%, and interventions totaled 9.7%. There were 4.7% gesture interactions, and 1.1% interventions. The ratio for the total was 48.2%. No ratios

were calculated for the types. All interaction and intervention type data can be found in Table 3.

TABLE 3
INTERACTION AND INTERVENTION TYPES AND PERCENTAGES WITH RATIOS

Interaction/ Intervention Type	Interactions		Interventions		Ratio %
	#	%	#	%	
Gesture	18	4.7	2	1.1	
Verbal	311	81.0	165	89.2	
Physical	55	14.3	18	9.7	
Total	384	100.0	185	100.0	48.2

note: Ratios were not calculated for interaction types, only totals.

The same categories of age, gender, age/gender, and class were used when examining the types of interactions/interventions. Gesture data was negligible and no patterns could be discerned. Verbal data revealed a pattern of consistency with total interaction; more interactions for 5.5-5.9 (33.3%), Boys (37.2%), and 5.5-5.9 Boys (19.8%). Table C-4 contains all type data for these categories.

Weekly

Interaction and intervention percentages showed no obvious pattern changes when compared with time percentages for weeks.

However, the ratios for interaction/intervention rose in each unique week. Week one had a ratio of 63.6%, which dropped to 54.1% in week two, and remained near that percentage until week six. In week six the ratio rose to 72.7%, and continued to rise until week nine where it was 100.0%, falling in week ten to 75.0%. This pattern can be seen in Table 4.

TABLE 4
PERCENTAGES OF INTERACTIONS AND INTERVENTIONS WITH RATIOS FOR WEEKS

Week #	Interactions		Interventions		Ratio %
	#	%	#	%	
1	11	4.7	7	4.6	63.6
2	37	15.9	20	13.2	54.1
3	34	14.6	17	11.2	50.0
4	36	15.5	21	13.8	58.3
5	30	12.9	16	10.5	53.3
6	18	7.7	13	8.6	72.2
7	20	8.6	17	11.2	85.0
8	18	7.7	15	9.9	83.3
9	17	7.3	17	11.2	100.0
10	12	5.2	9	5.9	75.0
Total	233	100.1	152	100.1	65.2

Schools

School One had 26.6% interactions and 28.9% interventions for a ratio of 71.0%. With 29.5% of the time, School One appeared to have a

consistent pattern. School Two, with 29.6% interactions and 24.3% interventions for a ratio of 53.6%, but 38.5% of the time, had a pattern of fewer interactions and interventions than the other two schools. School Three had 43.8% interactions and 46.7% interventions for a ratio of 69.9%, but only 32.9% of the time. Interaction and intervention data for schools can be found in Table 5.

TABLE 5
PERCENTAGES OF INTERACTIONS AND INTERVENTIONS WITH RATIOS FOR SCHOOLS

School #	Interactions		Interventions		Ratio %
	#	%	#	%	
1	62	26.6	44	28.9	71.0
2	69	29.6	37	24.3	53.6
3	102	43.8	71	46.7	69.6
Total	233	100.1	152	100.1	65.2

One implication was that the number of children in the room seemed to affect the interactions and interventions. This was apparent from comparisons of schools. The least percentage of time, 32.2%, was spent in School Three, which had two groups per classroom, however, School Three had the highest percentage of interactions, 43.8%, and the highest percentage of interventions, 46.7% (See Table C-2).

Teachers

Interaction percentages appeared to be consistent with the amount of time spent with each teacher. However, two distinct patterns emerged in interaction/intervention percentages and ratios for teachers in School Three. Teacher H, who worked primarily alone, had an extremely high ratio of 91.7%, and the teams of D/E and F/G each had one very low ratio and one higher ratio. D had a ratio of 70.0%, while E had a ratio of 40.0%. If the two are averaged they become 55.0%. Accordingly, F had a ratio of 56.6% and G had a ratio of 79.2%. When averaged the two become 67.9%. Table 6 contains all

TABLE 6

PERCENTAGES OF INTERACTIONS AND INTERVENTIONS WITH RATIOS FOR TEACHERS

Teacher	Interactions		Interventions		Ratio
	#	%	#	%	
A	11	4.7	8	5.3	72.7
B	28	12.0	22	14.5	78.6
C	23	9.9	14	9.2	60.9
Z	69	29.6	37	24.3	53.6
D	10	4.3	7	4.6	70.0
E	15	6.4	6	3.9	40.0
F	26.5	11.4	15	9.9	56.6
G	26.5	11.4	21	13.8	79.2
H	24	10.3	22	14.5	91.7
Total	233	100.0	152	100.0	65.2

data. The pattern exhibited was that when two teachers worked together as a team, one took a dominant role in intervention of interactions.

Interventions had two distinct types: direct and indirect. When directly intervening, the teacher gestured to, spoke, or touched one or more children interacting or attempting to interact. Indirect intervention was when the teacher regained attentiveness by speaking to a child not interacting, or to the class, or by physical presence without direct contact, such as walking over to a table during seatwork where interaction was taking place, and without direct contact with the interacting children the interaction stopped. The implication was that intervention can be either direct or indirect, depending on whether contact is made with the interacting children during the intervention.

Teachers were aware that younger children and boys were involved in more interactions. These data were collected from interviews, and examined further on the survey.

The third item on the survey asked the teachers to rate older girls, older boys, younger girls, and younger boys according to attentiveness. Numerical rating numbers were used with 1 being most attentive and 4 being least attentive. Older girls received 87.5% of the 1's, and 12.5% of the 2's. Teachers seemed to agree that older girls are the most attentive. Older boys were rated at 12.5% for 1, 75.0% for 2, and 12.5% for 3; indicating that teachers considered older boys rated at 2. Younger girls received 12.5% of 2 and 87.5% of

3, which rated them at 3, and younger boys got 100.0% of 4. Table 7 contains data from this item.

TABLE 7
SURVEY RESPONSE
ATTENTIVENESS, AGE, AND GENDER

Rating #	Younger Boys		Younger Girls		Older Boys		Older Girls	
	#	%	#	%	#	%	#	%
1	0	0.0	0	0.0	1	12.5	7	87.5
2	0	0.0	1	12.5	6	75.0	1	12.5
3	0	0.0	7	87.5	1	12.5	0	0.0
4	8	100.0	0	0.0	0	0.0	0	0.0

note: Rating: 1 - most attentive, 4 - least attentive

The sociogram reflected child preference of playmates. The data were examined by age, gender, and age/gender. Percentages of choices made and times chosen by age were: 5.5-5.9, 50.0% made and 35.5% chosen and 6.0+, 50.0% made and 64.5% chosen. Percentages of choices made and times chosen by gender were: boys, 54.0% made and 59.7% chosen, and girls, 45.2% and 40.3%, made and chosen, respectively. These percentages reflect a pattern of slight preference by the children to play with older children, since the age groups were equal. The percentages by gender were comparable with the total percentages; no pattern emerged. However, when percentages were compared for

age/gender, 5.5-5.9 boys made 30.6% of the choices and were chosen 22.6%, 5.5-5.9 girls made 19.4% of the choices and were chosen 12.9%, 6.0+ boys made 24.2% of the choices and were chosen 37.1%, and 6.0+ girls made 25.8% of the choices and were chosen 27.4%. The pattern of preference here was older boys, older girls, younger boys, younger girls.

The five most chosen children exhibited a pattern of being older boys, younger boys, and older girls. No younger girls appeared in the five most chosen. Age group 5.5-5.9 was chosen six times or 9.7% and age group 6.0+, twenty-seven or 43.5%. When compared by gender boys were chosen twenty-six times or 41.9% and girls were chosen seven times or 11.3%. The percentages by age/gender were: 5.5-5.9 boys, six times or 9.7%; 5.5-5.9 girls zero or 0.0%; 6.0+ boys, twenty times or 32.3%; and 6.0+ girls, seven times or 11.3%.

Five children or 22.7% of the total number of children were not chosen at all. Three children or 13.6% were aged 5.5-5.9 years, and two or 9.1% were aged 6.0+. When examined by gender, three or 13.6% were boys, and two or 9.1% were girls. The age and gender percentages were: 5.5-5.9 boys, two or 9.1%; and with one or 4.5% each 5.5-5.9 girls, 6.0+ boys, and 6.0+ girls. No pattern could be discerned.

Three girls had a relationship outside of school. Girl One was 6.0+, Girl Two was 5.5-5.9, and Girl Three was 6.0+. Girl One chose Girl Two on her third choice and did not choose Girl Three. Girl Two chose Girl One on her first choice and did not choose Girl Three. Girl Three chose Girl One on her second choice and did not choose Girl

Two. The pattern appeared to be that outside relationships did not affect school relationships for these children. All sociogram data can be found in Tables 8, C-5, and C-6; and in Figures C-1 through C-4.

TABLE 8
SOCIOGRAM PERCENTAGES OF
CHOICES MADE AND TIMES CHOSEN
FOR SCHOOL TWO

Age or Gender	Choices Made		Times Chosen		% In Class
	#	%	#	%	
<u>Age</u>					
5.5-5.9	31	50.0	22	35.5	50.0
6.0+	31	50.0	40	64.5	50.0
Total	62	100.0	62	100.0	100.0
<u>Gender</u>					
Boys	34	54.8	37	59.7	54.5
Girls	28	45.2	25	40.3	45.5
Total	62	100.0	62	100.0	100.0
<u>Age/Gender</u>					
5.5-5.9 Boys	19	30.6	14	22.6	31.8
5.5-5.9 Girls	12	19.4	8	12.9	18.2
6.0+ Boys	15	24.2	23	37.1	22.7
6.0+ Girls	16	25.8	17	27.4	27.3
Total	62	100.0	62	100.0	100.0

When the results of total choices on the sociogram were compared with the total interaction occurrence frequency by age, gender,

age/gender, and class (Table 2, p. 34), no distinct patterns emerged. However, when the sociogram results were compared with Teacher Z's response to item three on the survey, a relationship was discovered. The children chose older boys, older girls, younger boys, younger girls as their pattern of preference, and Teacher Z listed older boys, older girls, younger girls, younger boys as most to least attentive, and observational data for School Two confirmed her view. Older boys and older girls were the first two choices of both teacher and children. This pattern implied that the teacher had an effect on child preference of playmates.

2. ENVIRONMENTAL FACTORS

The environmental factors that were examined were activity type and length, stimuli type and frequency, classroom environment, and classroom interruptions. Each was examined from total, weekly, school, and teacher perspectives.

Activity Type and Length

Total

Total percentages for the three activity types reflected the most time spent in large group, 47.1%. Seatwork comprised 46.5%, and small group only 6.4%. All time percentages can be found in Table 1 (p. 30). The activity length was examined in five and ten minute intervals. No patterns emerged in the five minute interval grouping, so only the ten minute interval grouping was reported here.

The totals revealed the activity length intervals from 11-20, 21-30, and 31-40 minutes most common. Above forty minutes and below eleven minutes the total percentage dropped, but below eleven minutes the occurrence count was about the same as 11-20 minutes, therefore the frequency was similar, though total time different for the two time intervals. The pattern for all activity types had time length intervals of less than forty minutes. Table 9 gives total times and percentages for activity lengths.

TABLE 9

ACTIVITY TYPE AND LENGTH AND PERCENTAGES OF TOTAL ACTIVITY TIME

Length min	Large Group min	%	Small Group min	%	Seatwork min	%	Total min	%
1- 10	101	4.5	3	0.1	83	3.8	187	8.3
11- 20	286	12.7	71	3.1	160	7.1	517	22.9
21- 30	299	13.2	28	1.2	76	3.4	403	17.9
31- 40	132	5.9	0	0.0	145	6.5	277	12.3
41- 50	131	5.8	43	1.9	48	2.1	222	9.8
51- 60	113	5.0	0	0.0	114	5.1	227	10.1
61- 70	0	0.0	0	0.0	0	0.0	0	0.0
71- 80	0	0.0	0	0.0	147	6.5	147	6.5
81- 90	0	0.0	0	0.0	179	7.9	179	7.9
91-100	0	0.0	0	0.0	97	4.3	97	4.3
Total	1062	47.1	145	6.4	1049	46.5	2256	100.0

min = minutes

Large group time was 47.1% of the total activity time. The lengths of 21-30 minutes, 13.2%, and 11-20 minutes, 12.7%, were the most common intervals in this type of activity. No large group activity lasted for more than sixty minutes.

Small group time at 6.4% showed no clear patterns. Possibly not enough small group time was observed. No small group activity lasted for more than forty minutes.

Seatwork, 46.5%, varied widely in activity length. The interval from 11-20 minutes, 7.1%, was most common, even though 81-90 minutes had a higher percentage, 7.9%, there were only two group activities making up the 179 minutes. Total interval percentages can be found in Table 9.

Large group had the most interactions, 66.5%, but only 55.0% of the interventions with a ratio of 54.8%. Small group contained only 3.4% of interactions, and 2.6% of interventions for a ratio of 50.0%. With 30.0% of the interactions, and 41.3% of the interventions, seatwork had a ratio of 90.0%. Table 10 contains the total counts and percentages for activity type, interactions, and interventions.

Interactions and interventions when examined by activity lengths of 21-30 and 11-20 minute intervals totaled more interactions, 27.0% and 21.9%, and more interventions, 22.4% and 19.7%, with ratios of 54.0% and 58.8%, respectively. This was not surprising, since more time was spent there. The 1-10 minute length, however, had an interaction totaling 12.0% and an intervention totaling 14.5% with a ratio of 78.6%. This was interesting since the time was 8.3%. The

TABLE 10

ACTIVITY TYPE AND PERCENTAGES OF
INTERACTIONS AND INTERVENTIONS WITH RATIOS

Activity Type	Interactions		Interventions		Ratio %
	#	%	#	%	
Large Group	155	66.5	85	55.8	54.8
Small Group	8	3.4	4	2.6	50.0
Seatwork	70	30.0	63	41.3	90.0
Total	233	99.9	152	98.7	65.2

min = minutes

other intervals when compared with their time percentages were similar. All activity length totals can be found in Table 11.

Several patterns were recognized from total activity type and length data. First, the most common activity types were large group and seatwork, and small group was not consistently found in kindergartens. Most of these activities lasted from one to forty minutes. The highest percentage of interactions occurred in large group activities, and the highest intervention ratio occurred in seatwork.

Weekly

When examining activity type and time for weeks, no pattern changes were found for three of the unique weeks. Week six, testing week, had no small group time due to testing. (This information came

TABLE 11

ACTIVITY LENGTH AND PERCENTAGES OF
INTERACTIONS AND INTERVENTIONS WITH RATIOS

Length min	Interactions		Interventions		Ratio %
	#	%	#	%	
1- 10	28	12.0	22	14.5	78.6
11- 20	51	21.9	30	19.7	58.8
21- 30	63	27.0	34	22.4	54.0
31- 40	26	11.2	21	13.8	80.0
41- 50	21	9.0	17	11.2	81.0
51- 60	26	11.2	17	11.2	65.4
61- 70	0	0.0	0	0.0	0.0
71- 80	5	2.1	4	2.6	80.0
81- 90	4	1.7	2	1.3	50.0
91-100	9	3.9	5	3.3	55.6
Total	233	100.0	152	100.0	65.2

min = minutes

from the teachers themselves.) Activity time by weeks can be found in Table 12. Activity length by weeks showed no unusual patterns during any of the four weeks, as can be seen in Table C-7.

Two patterns were revealed for weekly activity type and length, which were related to the relationship between teachers and school and/or system administration. One was that activity type was affected by decisions made by administration. The other conclusion was that teachers were more affected by these changes than children. This was revealed from interaction/intervention data, and teacher interviews.

TABLE 12
ACTIVITY TIME AND PERCENTAGES FOR WEEKS

Week #	Large Group		Small Group		Seatwork		Total	
	min	%	min	%	min	%	min	%
1	38	1.7	12	0.5	62	2.7	112	5.0
2	104	4.6	12	0.5	193	8.6	309	13.7
3	111	4.9	0	0.0	95	4.2	206	9.1
4	134	5.9	43	1.9	123	5.5	300	13.3
5	121	5.4	28	1.2	70	3.1	219	9.7
6	96	4.3	0	0.0	117	5.2	213	9.4
7	126	5.6	12	0.5	127	5.6	265	11.7
8	147	6.5	3	0.1	98	4.3	248	11.0
9	86	3.8	0	0.0	117	5.2	203	9.0
10	99	4.4	35	1.6	47	2.1	181	8.0
Total	1062	47.1	145	6.3	1049	46.5	2256	99.9

min = minutes

Schools

Activity time for School One was 29.5%, which was mostly large group, 22.6%. No small group was observed at this school, but seatwork comprised 6.9%. All activities lasted for sixty minutes or less and were fairly equally divided between the ten minute intervals.

School Two had an activity time of 38.5%, which was primarily spent in seatwork, 28.5%, of which 7.9% was spent in large group and 2.1% was spent in small group. All of the activity lengths over sixty minutes were seatwork at School Two, which comprised 423 minutes or 18.8%, and were from 71-100 minutes long.

With 32.2%, School Three had varied activity types. Large group was 16.8%; small group was 6.3%; and seatwork was 11.2%. All activity lengths were less than sixty minutes, with most being from 11-20 minutes, 10.5%, and 21-30 minutes, 8.2%. Table 13 and Table 14 contain activity type and activity length data for schools.

TABLE 13
ACTIVITY TIME AND PERCENTAGES FOR SCHOOLS

School #	Large Group		Small Group		Seatwork		Total	
	min	%	min	%	min	%	min	%
1	507	22.6	0	0.0	156	6.9	663	29.5
2	178	7.9	47	2.1	642	28.5	867	38.5
3	377	16.8	98	4.2	251	11.2	726	32.2
Total	1062	47.1	145	6.3	1049	46.5	2256	99.9

min = minutes

One pattern was recognized from school data. Activity type and length was affected by school organization and room construction.

Teachers

Seven teachers spent most of their time in large group activities: A (6.6%), B (7.6%), C (8.4%), D (1.3%), E (2.6%), F (5.3%), and G (5.3%). For D/E and F/G much of this time was spent

TABLE 14
ACTIVITY LENGTH AND PERCENTAGES FOR SCHOOLS

School #	1-10		11-20		21-30		31-40		41-50		51-60		61-70		71-80		81-90		91-100		Total	
	min	%	min	%	min	%	min	%	min	%	min	%	min	%	min	%	min	%	min	%	min	%
1	109	4.9	143	6.3	198	8.7	67	3.0	86	3.8	60	2.7	0	0.0	0	0.0	0	0.0	0	0.0	663	29.4
2	19	0.9	140	6.2	21	0.9	106	4.8	48	2.1	110	4.8	0	0.0	147	6.5	179	7.9	97	4.3	867	38.4
3	59	2.5	234	10.5	184	8.2	104	4.6	88	3.9	57	2.5	0	0.0	0	0.0	0	0.0	0	0.0	726	32.3
Total	187	8.3	517	23.1	403	17.9	277	12.4	222	9.8	227	10.1	0	0.0	147	6.5	179	7.9	97	4.3	2256	100.3

min = minutes

with the total of the two classes in their room in a team teaching situation. The other two teachers concentrated the majority of their time in seatwork activities: Z (28.5%) and H (6.5%). All of the teachers were observed while in large group and seatwork, but only three were observed in small group: Z (2.1%), D (0.5%), and H (3.7%). Activity type percentages for teachers can be found in Table 15.

TABLE 15
ACTIVITY TIME AND PERCENTAGES FOR TEACHERS

Teacher	Large Group		Small Group		Seatwork		Total	
	min	%	min	%	min	%	min	%
A	146	6.6	0	0.0	38	1.7	184	8.3
B	171	7.6	0	0.0	66	3.0	237	10.6
C	190	8.4	0	0.0	52	2.2	242	10.6
Z	178	7.9	47	2.1	642	28.5	867	38.5
D	30.5	1.3	12	0.5	46	2.0	88.5	3.8
E	58.5	2.6	0	0.0	19	0.8	77.5	3.4
F	118.5	5.3	0	0.0	15	0.7	133.5	6.0
G	117.5	5.3	0	0.0	25	1.1	142.5	6.4
H	52	2.3	86	3.7	146	6.5	284	12.5
Total	1062	47.1	145	6.3	1049	46.5	2256	99.9

min = minutes

Only one teacher, Z, had any activities lasting more than sixty minutes. There was no definite pattern to the other time length intervals. Data can be found in Table C-8.

Interview data confirmed that most activity type and length, and joining of classes was dictated by school organization primarily from school administration, with few exceptions. Teachers also expressed concern that administrative in school planned extracurricular activities, such as P.T.A. programs and individual and class pictures, were planned without their input, and affected the children's interaction frequency.

The only pattern that emerged was that teachers made little contact with children in other classes, unless the two classes were contained in the same room, or the school organization imposed class contact.

Stimuli

Total

V-T/K was the most common type of stimuli observed with a 34.1%. A-V-T/K was second in frequency with 32.7%, and A-V was third with 24.0%. A-T/K, T/K, and A totaled less than 10.0% of the total stimuli.

Large group contained 59.2% of stimuli. A-V-T/K comprised 25.6%, and A-V for large group was 24.0%. Small group contained 7.2% made up of A-V-T/K, 4.0%, V-T/K, 2.4%, and A-T/K was negligible. V-T/K accounted for 31.2% of seatwork's 34.4%. A total count for stimuli and activity type can be found in Table 16. Stimuli data was not collected by activity length.

TABLE 16

ACTIVITY TYPE AND STIMULI AND
PERCENTAGES OF TOTAL ACTIVITY TIME

Stimuli Type	Large Group		Small Group		Seatwork		Total	
	#	%	#	%	#	%	#	%
V-T/K	1	0.8	3	2.4	39	31.2	43	34.1
A-V-T/K	32	25.6	5	4.0	4	3.2	41	32.7
A-V	30	24.0	0	0.0	0	0.0	30	24.0
A-T/K	5	4.0	1	0.8	0	0.0	6	4.8
T/K	4	3.2	0	0.0	0	0.0	4	3.2
A	2	1.6	0	0.0	0	0.0	2	1.6
Total	74	59.2	9	7.2	43	34.4	126	100.7

V-T/K = Visual-Tactile/Kinesthetic
A-V-T/K = Auditory-Visual-Tactile/Kinesthetic
A-V = Auditory-Visual
A-T/K = Auditory-Tactile/Kinesthetic
T/K = Tactile/Kinesthetic
A = Auditory

Stimuli interaction/intervention totals for A-V were highest at 52.4% and 42.8%, respectively, with a ratio of 53.3%. V-T/K had an interaction total of 33.5%, but the intervention total was 42.8%, which was the same as the interventions for A-V. That gave V-T/K the highest ratio of 83.8%. All interaction and intervention data for stimuli can be found in Table 17.

One large group activity examined was child-child interaction during film or filmstrip stimuli presentations which were included in the A-V stimuli in the total. Only 91 minutes or 4.3% were observed during this study with an interaction of 19 or 8.2% and an

intervention of 8 or 5.3% for a ratio of 42.1%. The percentage of interactions was nearly twice the percentage of time, and the ratio was lower than any of the other stimuli ratios. (See Table 17 for comparison data.)

TABLE 17
STIMULI AND PERCENTAGES OF
INTERACTIONS AND INTERVENTIONS WITH RATIOS

Stimuli Type	Interactions		Interventions		Ratio %
	#	%	#	%	
V-T/K	78	33.5	65	42.8	83.3
A-V-T/K	25	10.7	14	9.2	56.0
A-V	122	52.4	65	42.8	53.3
A-T/K	2	0.9	2	1.3	100.0
T/K	1	0.4	1	0.7	100.0
A	5	2.1	5	3.3	100.0
Total	233	100.0	152	100.1	65.2

V-T/K = Visual-Tactile/Kinesthetic
A-V-T/K = Auditory-Visual-Tactile/Kinesthetic
A-V = Auditory-Visual
A-T/K = Auditory-Tactile/Kinesthetic
T/K = Tactile/Kinesthetic
A = Auditory

Concluded patterns from total stimuli data included:

1. The most common types of stimuli were visual-tactile/kinesthetic and auditory-visual-tactile/kinesthetic.
2. The most common types of stimuli for large group activity

were auditory-visual-tactile/kinesthetic and auditory-visual.

3. The most common type of stimuli for seatwork was visual-tactile/kinesthetic.

4. The stimuli which contained the highest interaction percentage was auditory-visual.

5. The stimuli that had the highest interaction/intervention ratio was visual-tactile/kinesthetic.

6. The school's organization affected the type of stimuli.

One implication occurred in stimuli data. Auditory-visual film and filmstrip in all activity types appeared to have a higher interaction percentage than any other stimuli type.

Weekly

Stimuli type and frequency data had no patterns when examined by weekly intervals. All data can be found in Table C-9.

Schools

The stimuli total for School One was 35.2%, and varied widely among the six types of stimuli. School Two had varied types of stimuli totaling 20.0%. With a total of 45.6%, School Three also was varied, but A-V-T/K, 16.8%, and V-T/K, 15.2%, were most prevalent. Table 18 contains the data for Stimuli for schools. It was concluded that school organization definitely affected stimuli type and frequency.

TABLE 18
STIMULI AND PERCENTAGES FOR SCHOOLS

School #	V-T/K		A-V-T/K		A-V		A-T/K		T/K		A		Total	
	#	%	#	%	#	%	#	%	#	%	#	%	#	%
1	14	11.2	15	12.0	10	8.0	3	2.4	1	0.8	1	0.8	44	35.2
2	10	8.0	5	4.0	9	7.2	1	0.8	0	0.0	0	0.0	25	20.0
3	19	15.2	21	16.8	11	8.8	2	1.6	3	2.4	1	0.8	57	45.6
Total	43	34.4	41	32.7	30	24.0	6	4.8	4	3.2	2	1.6	126	100.7

V-T/K = Visual-Tactile/Kinesthetic
A-V-T/K = Auditory-Visual-Tactile/Kinesthetic
A-V = Auditory-Visual
A-T/K = Auditory-Tactile/Kinesthetic
T/K = Tactile/Kinesthetic
A = Auditory

Teachers

Stimuli, when examined by teacher, appeared to have no definite patterns. Each teacher employed varied stimuli, and when stimuli and time percentages were compared, they were very close. Only Teacher H had a large percentage in any one stimuli, V-T/K, 7.2%, which was half of her total of 14.4%. Results can be found in Table C-10.

Stimuli was mentioned several times in interviews and was included on the teacher survey. In item two stimuli received 7.7% of the listings, and in item four had no pattern of agreement, receiving no ratings of 1, 5, or 8, and 25.0% each in 2, 4, and 6 (See Table C-11). When the two items were correlated, no distinct pattern emerged. Teachers were concerned with stimuli, but did not agree on its importance in maintaining attentiveness.

Classroom Environment

The three schools were similar in facilities and equipment. All were air conditioned, contained sufficient furniture in good repair, and contained similar manipulatives and supplies. Room size, storage area, water supply, and restrooms varied among the three schools, however. Teachers remarked that room size affected interaction frequency, smaller rooms encouraged interactions, which is directly related to class size, which was discussed earlier. Many complaints were voiced concerning lack of storage space in School One and School Three. No activities were observed needing a water supply in any of

the schools, and no comments were made regarding water supply or restroom location by any of the teachers.

Teachers credited these problems to school and system administrations. The opinion prevailed that the administrations did not care about the conditions in the classrooms, based on the fact that many purchase requests were denied by school administration, and many requests made to system administration regarding staff needs and needed school programs were ignored or denied. Also, teachers expressed a desire to see principals and supervisors more frequently in the school, and specifically in their individual classrooms. Reasoning was that if they saw the problems, they would understand and help to attempt corrections.

On survey item two classroom environment (including class size and classroom environment) received 7.7%, and on item four classroom environment was not rated for 2, 6, or 8, and received the most (25.0%) in three categories, 1, 5, and 7 (Table C-11). The teachers were obviously confused, but thought classroom environment moderately important.

Weather, from interview data, was examined as a factor. Two types of weather occurred during the study, hot/sunny, and cool/rainy. Neither seemed to have any effect on children's attending behavior, but data was negligible. Weather was not listed in item two of the survey, and there was 100% agreement that it was least important on item four (Table C-11).

Two classroom interruptions factors were related: adults entering and exiting the classroom, and adults verbally interacting with each other. Children's behavior did not appear to be affected by either factor, but attentiveness did seem to be affected by a third related factor, adults interacting with other children. When adults other than the teacher interacted with a child in the room, the children, other than the child being interacted with, appeared to become attentive to the interaction, not the planned stimuli. Also, when children from other classrooms entered, interactions increased.

Children conducting the class were observed a total of sixteen times in five different classes. The occurrences lasted a very short period of time, usually less than five minutes, but the atmosphere of the room seemed totally quiet for the entire time. In all of the sixteen instances only one interaction, and no interventions were observed.

Intercoms were found in all of the classrooms. When the intercom was on, the children appeared to continue attending to the planned stimuli. The only time interruptions appeared was when the stimuli was a verbal presentation by the teacher, and she reacted to the intercom. The children then appeared to increase interactions.

Classroom interruptions on survey item two received 5.1%, and some pattern of agreement was shown for classroom interruptions, with 62.5% of the ratings for 6, while 7 received 25.0% and 4 received 12.5% on item four (Table C-11). Classroom interruptions were

considered moderately important with 5.1% from item two, and a percentage of 62.5% for rating 6 in item four.

Patterns from classroom interruptions were that adult-adult interactions had little affect on child attentiveness, but adult-child interactions increased child inattentiveness, which lead to child-child interactions. Also, teachers considered classroom interruptions moderately important in child attentiveness. Two implications resulted from these conclusions. One was that children held other children's attention better than adults. The other was that classroom interruptions affected teachers' behavior, indirectly resulting in child inattentiveness leading to child-child interaction.

3. SUBJECT RELATED FACTORS

The four subject related factors included teacher, teacher's condition, child, and child's condition. The results for each are related below.

Teachers

Teachers varied widely in their teaching styles including activity type and length, stimuli type and frequency, and intervention type and frequency. Interview data concluded that school staff considered the teacher the most important factor in child attentiveness and interaction frequency. The teacher survey data revealed that teachers considered themselves the most important factor in attentiveness. In item two teacher was listed 58.9%, and in item

four teacher received 50.0% in rating 1, 25.0% in rating 2, and 12.5% each in ratings 4 and 5 (Data contained in Table C-11.) Correlation of the two items revealed that teachers considered themselves very important to attentiveness, especially in reducing child-child interactions.

Teacher's Condition

Physical condition was not deemed important by any of the teachers since "sick days" were available. One teacher was obviously ill on one occasion, but data was negligible otherwise.

Teachers' emotional state was mentioned many times in interviews by all school staff. Personal problems were considered, but no patterns emerged. One set of suggested factors can be grouped as problems with school administration. These were suggested because the informants expressed concern that these problems affected the teachers' condition, therefore affecting the children's behavior. Two subgroups can be formed from the larger group: school wide and system wide. School wide problems included total school organization by school administration, which encompassed room assignments for teachers and children, and day-to-day operation; and staff conflict. System wide administrative problems suggested were: Contract negotiations (occurring during the study), the method of evaluating teachers, the method of testing and tests used for the children (testing occurred during the sixth week of this study), and the system's administrative support of physical needs and programs for individual schools. All of

these factors were mentioned by every teacher, and most other school staff.

The teachers' impression of most parents' attitude was that parents either did not care how their child's classroom was conducted, or parents had unrealistic expectations of what the teacher could accomplish. "Parents who understand how school really works, and who really controls what we do are few and far between.", Teacher A. This seemed to be a major emotional stress for all teachers. Teacher's mental state was never mentioned in any capacity.

On the survey teacher's condition was not listed in item two, and this category received no ratings in 1, 4, and 8, but did receive 37.5% at rating 7 on item four (Table C-11). Correlation reflected confusion among teachers concerning the effects of teachers' condition on classroom attentiveness.

There was much discrepancy between interview data and survey data. In interviews teachers' condition was the most often mentioned subject related factor, yet on the survey it seemed hardly recognized as a factor at all. Teachers appeared confused about the effects of teachers' condition on child attentiveness.

Child

The child's age and gender definitely contributed to interaction frequency. Younger children and boys, especially younger boys, had a higher frequency of interactions. Teachers revealed awareness of this conclusion in many interviews, and on the survey items two, three and

four confirmed this awareness. Child was listed 18.0% in item two, and in item four had highest agreement of 37.5% at rating 2 with no ratings in 6, 7, and 8 (See Table C-11). In item three younger boys received 100.00% of the 4 ratings for least attentive.

Child's Condition

Interview data revealed that teachers considered child's condition extremely important in certain instances, and moderately important in all instances. All teachers in all classrooms referred to certain children as having "emotional problems", and described the children's behavior, and their treatment, including any assistance from professionals, or school psychological personnel. Observation data confirmed this interview data. Also, all teachers referred to "bad days" that all children seemed to have occasionally. These were times that children exhibited unusual behavior patterns.

Physical illness was credited with most of the "bad days", along with home changes like an occasional schedule change such as late nights or minor emergencies. However, teachers attributed many of child's condition factors to home life in general. They expressed concern about socialization skills of parents, especially in lower income families, and how all parents viewed their classrooms, extending that attitude to their children. Mental illness was again not mentioned.

Survey data confirmed the moderately important view. In item two child's condition was listed 2.6%. In item four it received 50.0% in

rating 3, and 25.0% in each of two other ratings, 4 and 5. Data for item four can be found in Table C-11.

CHAPTER V

SUMMARY, FINDINGS, AND DISCUSSION OF INTERPRETATIONS

1. SUMMARY

This study employed ethnographic techniques in order to investigate child-child interactions at inappropriate times in three schools and nine kindergarten classrooms. The study lasted for ten weeks, covering 3240 total time minutes, 2605 observing time minutes in the classrooms, and 2256 activity time minutes collecting observation data. The 984 minute difference between total time and activity time was spent interviewing subjects and conducting a sociogram. In addition to observation, interview, and sociogram data, two surveys were conducted. One was to collect socioeconomic data from principals, and the other was to afford the teachers equal opportunity to contribute information based on interview collected data, since interview time was not consistent among the nine teachers. Also a sociogram was conducted to investigate the children's relationships and playmate preferences.

Observation data were examined by total, weekly, school and teacher comparisons for patterns in percentages of three activity types (large group, small group, seatwork), ten activity lengths (ten minute intervals from 1-100 minutes), six stimuli types (V-T/K, A-V-T/K, A-V, A-T/K, T/K, A), and interaction/intervention occurrence count and ratio. The total interaction/intervention type count was collected in order to determine the frequencies of two age levels,

5.5-5.9 and 6.0+ years, both genders, Boys and Girls, and the four groups of age/gender. Nine other factors were observed that appeared to have patterns, but were not able to be verified by statistical data. These factors were: less child attentiveness during film or filmstrip A-V stimuli, more attentiveness during child directed activities, two distinct types of interventions (direct and indirect), class size, adults other than the teacher entering and exiting the classroom, adults interacting with other adults, adults interacting with children, intercom interruptions, and the weather.

Interview data were collected in order to understand the subjects perspective and gain any insights that they might have on child attentiveness. All teachers, two principals, and several other school personnel were interviewed and three key informants emerged, one in each of the three schools. Child informants provided negligible information.

The principal's survey had 100.0% response, and covered only socioeconomic data for the schools. The teacher's survey had an 88.9% response, and contained four items. Item one ascertained the teachers' perspective of the age level of their group of students, which was 75.0% average. Item two asked for a listing of attentiveness factors, and elicited thirty-nine responses covering fourteen factors that were finally grouped into the five categories of teacher, child, child's condition, classroom environment, and classroom interruptions. Item three rated children by age and gender according to attentiveness. The order determined from most attentive

to least attentive was: older girls, older boys, younger girls, and younger boys. Item four determined a rating for eight attentiveness factors obtained in interviews: child, child's condition, weather, classroom environment, classroom interruptions, teacher, teacher's condition, and stimuli.

Sociogram data were collected from School Two only due to the class structures in Schools One and Three, and investigated the children's preference of playmates according to age, gender, and age/gender; and the effects of external school relationships on internal school relationships. Patterns of preferred playmates were older boys, older girls, younger boys, and younger girls in a class of 54.5% boys (average age 5.7 years) and 45.5% girls (average age 5.8 years). One external relationship was discovered consisting of three girls.

All data patterns were examined in the areas of interaction/intervention, environmental factors, and subject related factors for relationships among the patterns discovered. Thirty-two consistently found patterns and nine recognized patterns were found.

2. FINDINGS

Thirty-two consistent patterns were recognized from the total data collected, and nine more patterns which were not consistently found were recognized. These patterns were based on three areas of comparison, which were interaction/intervention, environmental factors, and subject related factors.

Interaction/intervention data yielded five findings. Most interactions and interventions were verbal, and younger children and boys, especially younger boys, had a higher frequency of interactions. Teachers were aware of this fact, but class interactions had the highest ratio of intervention. The last conclusion was that in the team teaching situations, one teacher assumed a dominant role in interventions with the total group.

Five interaction/intervention patterns were inconsistently found. First, intervention ratios rose during weeks where extracurricular activities or other school or system unusual events were planned, but interaction frequency had no apparent change. Next, interaction frequency rose as class size increased. Two related patterns found were that children preferred older boys first and then older girls as playmates, and that this preference was influenced by teacher attitude. Fifth, children's external school relationships did not appear to be related to their internal school relationships.

Environmental factors revealed twenty-two consistent patterns. When considering classroom environment the most common activity types were large group and seatwork, and small group was not found consistently. The highest interaction frequency was found in large group activities, and the highest ratio was discovered in seatwork. The most common activity lengths fell between one and forty minutes. Activity type and length were determined by the construction and organization of the specific schools, which allowed teachers little contact with children outside their classroom unless the school

administration scheduled such contact; and activity type patterns were affected by school and system extracurricular activities and child evaluation procedures. The effects of the pattern changes from school and system plans affected the teachers, and indirectly through the teachers, affected child attentiveness.

The most common types of stimuli were visual-tactile/kinesthetic and auditory-visual-tactile/kinesthetic. Large group contained mostly auditory-visual-tactile/kinesthetic and auditory-visual stimuli, and seatwork consisted primarily of visual-tactile/kinesthetic stimuli. The highest interaction frequency occurred in auditory-visual stimuli, and visual-tactile/kinesthetic had the highest ratio of intervention. School organization was shown affecting stimuli type and frequency.

Teachers considered classroom environment only moderately important, and the weather least important of any attentiveness factor. They also expressed concern that school and system administrations did not support needed changes in environmental factors that would lead to more child attentiveness, resulting in fewer child-child interactions.

As classroom interruptions were examined, adult-adult interactions had little direct affect on child attentiveness, but adult-child interactions increased child-child interactions. The final conclusion was that teachers considered classroom interruptions only moderately important.

Three other patterns were exhibited, but not consistently. First, film and filmstrip auditory-visual stimuli revealed the highest

stimuli interaction frequency. Next, children appeared to hold other children's attention much better than adults, and last, classroom interruptions altered teacher behavior resulting indirectly in increased child-child interactions.

Subject related factors resulted in five consistent patterns derived from data concerning teacher, teacher's condition, child, and child's condition. All school staff interviewed including the observed teachers agreed, and other data supported, the conclusion that the teacher was the most important factor in child attentiveness, especially regarding child-child interactions. The second conclusion was that the child, defined by age and gender, definitely had an affect on frequency of interactions, and thirdly, teachers were aware of the effect of the child. The last two conclusions in this category were concerning child's condition. Teachers' considered child's condition moderately important, and credited the individual child's home life as the determining factor in the child's condition.

The last implication concerned subject related factors, specifically teacher's condition. Teachers were confused about how much their physical, mental, and emotional condition contributed to children's interactions.

3. DISCUSSION OF INTERPRETATIONS

The predominant conditions in the classroom were activity types of large group and seatwork, activity length of less than forty minutes, and stimuli types of auditory-visual,

auditory-visual-tactile/kinesthetic, and visual-tactile/kinesthetic. A higher percentage of interactions was found in large group activity and auditory-visual stimuli, especially film and filmstrips, among boys and children aged 5.5-5.9, and were usually verbal. Interventions were mostly verbal, also. The highest intervention ratios were found in seatwork activity type, visual-tactile/kinesthetic stimuli, and with class interactions.

The teachers controlled all of the previously listed conditions within the classroom. They analyzed these environmental factors, child, and child's condition and placed any particular child in a seating arrangement to minimize interaction, and admitted that they were aware of these possible changes and implemented them whenever possible.

The school administration controlled the classroom environment and interruptions and had the responsibility of approving orders for equipment, air conditioning, furniture, manipulatives, etc., and limiting visitors and intercom interruptions which could minimize interaction. Also, when placing teachers and children in rooms, the administration could consider child and child's condition and place children in the class in such a way as to limit interaction. This would mean placing fewer younger children together, and attempting to have equal boys and girls in each room. Teachers in the study expressed awareness of and desire for this support from their administrations, and all of the teachers seemed to feel that their school administrations did many of these things.

Perhaps the most important factor discovered in this study was teacher's condition. Certainly the teachers were most confused and had more data discrepancy about this factor. Personal conditions affecting the category of teacher's condition were completely in the teacher's realm of control, however, job related conditions were not always in the teacher's control. The teacher can attempt to limit classroom effects of stress, but may not always be able to recognize and control all of their altered behaviors, and the teacher was shown to be the most important factor in children's behavior.

The teachers felt that the school administrations could certainly contribute to control of this factor. By minimizing stress due to classroom environment and interruptions, some control would be exhibited. Also, involving teachers in the planning of in school unique situations, such as total school programs and classroom placement could eliminate some stress, and lastly, the principal could attempt to minimize staff conflict by intervening between staff members in conflict, or analyzing his/her own behavior when in conflict, and help to arrive at compromises which are agreeable to all staff members.

The teachers expressed a desire for changes from system administration, also. In supporting the individual school's programs and meeting its needs, such as providing an extra teacher to keep class size down, providing transition teachers to avoid retentions, buying needed equipment, etc., less stress would be placed on teacher's condition. Also, communication with teachers concerning

choice of child tests and testing methods and teacher evaluation procedures and results on a personal level would relieve some teacher stress. Teachers in the study felt like "An ax is hanging over our heads . . .", Teacher Z. They expressed a consensus of not being supported by system administration. The sentiment of "Why should we knock ourselves out when no one cares . . .", Teacher A, appeared in every school, and was directly related to teacher evaluation and contract negotiations. The teachers expressed concern that system wide non-support would deteriorate classroom effectiveness, which would lead to increased child-child interactions. In the teacher's opinions better communication between system administration and teachers could eliminate much of this stress for teachers.

"Ethnography is not simply 'data collection'; it is rich in implicit theories of culture, society, and the individual.", (Agar, p. 23). When examining the public school system, culture and society are the primary determinants of organization and operation. The beliefs and values of the society are reflected in the ways schools are supported by the community and local government. The realization that teachers felt caught in the middle of this debate between a segment of American society that believes public schools are the major transmitters of culture, preserving society, but that schools are not as successful as they could be, and another segment that believes public schools are of little importance, and only waste tax money, was evident from the interview data gathered during this study. Teachers viewed themselves as being blamed for all of the schools problems,

while they worked for too little money and no appreciation. They felt that they were the pawns of a political system that publicized their problems for its own gain, affecting the relationships between the school and the community. Worry about the effects of these elements on the morale of their profession, and public opinion of them as individuals in that profession caused tremendous anxiety, however, the prime concern was still expressed as the affect all of these conditions had on their students. Principals interviewed in the study expressed the same concerns. All of the interviewed staff felt that these conditions affected teachers' condition more than any other job related factor. Since the teacher has been shown to be the most important factor in attentiveness, logic leads us to the conclusion that this is a pattern that will increase interactions between children by decreasing teacher effectiveness, if the teacher's assumptions were correct. Some of this anxiety could be alleviated within the public school system.

In conclusion, patterns did appear, and recognizing and altering the patterns could minimize classroom interactions. This process would have to involve the teacher, school administration, and system administration. By making these changes classroom attentiveness could be increased and classroom interactions could be decreased, possibly resulting in more learning taking place.

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APPENDIXES

APPENDIX A

OBSERVATION RECORDING FORM

<-----Date,
Time,
Patterns

<-----Observations,----->
Interview Transcripts

Comments,----->
Impressions

APPENDIX B

REQUEST FOR SUBJECT INFORMATION

Dear Principal:

The researcher and University appreciate your school's participation in this research project. For the sole purpose of subject identification the research needs certain socioeconomic data about your school. This information will be used when comparing groups of subjects being used in the research, but strict confidentiality will be maintained regarding the name and system of your school.

Please answer the questions below and seal this letter in the envelope provided. The researcher does not wish to bias the observations by having this information before the study is completed, but also does not wish to trouble you in the concluding week of school, since this is a very busy time. Please return the envelope to the researcher before May 30, 1986. The researcher will pick it up in your school office when you have completed it. Your cooperation is greatly valued.

What is your total school enrollment?

What are the racial proportions for your school?

What is the total student family income average for your school?

Thank you so much for your valuable time and cooperation.

School# _____

Comments for the researcher:

Teacher Survey

Would you rate your class as: Older Average Younger

List the factors that you think are most important in keeping the class attentive:

Which types of children are more attentive in your class: (1-most, 4-least)

Older Girls , Older boys , Younger Girls , Younger Boys

Rate these things in order of importance in children's attentiveness: (1-most important, 8-least important)

- ☐ Child (age, personality, etc.)
- ☐ Child's Condition (comfort level, emotional state, etc.)
- ☐ Weather
- ☐ Classroom Environment (temperature, number of students present, type of furniture, noise level, etc.)
- ☐ Classroom Interruptions (visitors, intercom, etc.)
- ☐ Teacher (personality, teaching style, etc.)
- ☐ Teacher's Condition (comfort level, emotional state, etc.)
- ☐ Type of learning stimuli (books, movie, pictures, etc.)

APPENDIX C

TABLE C-1

PERCENTAGES OF TIME, STIMULI, INTERACTIONS, INTERVENTIONS,
AND RATIOS FOR WEEKS

Week #	Time %	Stimuli %	Interactions %	Interventions %	Ratio %
1	5.0	8.0	4.7	4.6	63.6
2	13.7	15.9	15.9	13.2	54.1
3	9.1	10.4	14.6	11.2	50.0
4	13.3	15.2	15.5	13.8	58.3
5	9.7	8.0	12.9	10.5	53.3
6	9.4	8.8	7.7	8.6	72.2
7	11.7	11.2	8.6	11.2	85.0
8	11.0	8.8	7.7	9.9	83.3
9	9.0	6.4	7.3	11.2	100.0
10	8.0	8.0	5.2	5.9	75.0
Total	99.9	100.7	100.1	100.1	65.2

TABLE C-2

PERCENTAGES OF TIME, STIMULI, INTERACTIONS, INTERVENTIONS,
AND RATIOS FOR SCHOOLS

School #	Time %	Stimuli %	Interactions %	Interventions %	Ratio %
1	29.5	35.2	26.6	28.9	71.0
2	38.5	20.0	29.6	24.3	53.6
3	32.9	45.6	43.8	46.7	69.9
Total	99.9	100.7	100.1	100.1	65.2

TABLE C-3

PERCENTAGES OF TIME, STIMULI, INTERACTIONS, INTERVENTIONS,
AND RATIOS FOR TEACHERS

Teacher	Time %	Stimuli %	Interactions %	Interventions %	Ratio %
A	8.3	10.4	4.7	5.3	72.7
B	10.6	12.8	12.0	14.5	78.6
C	10.6	12.0	9.9	9.2	60.9
Z	38.5	20.0	29.6	24.3	53.6
D	3.8	7.6	4.3	4.6	70.0
E	3.4	6.8	6.4	3.9	40.0
F	6.0	8.4	11.4	9.9	56.6
G	6.4	8.4	11.4	13.8	79.2
H	12.5	14.4	10.3	14.5	91.7
Total	99.9	100.7	100.0	100.0	65.2

TABLE C-4

INTERACTION AND INTERVENTION TYPES AND PERCENTAGES
FOR AGE AND GENDER

Interaction/ Intervention Type, Age, Gender	Interactions		Interventions	
	#	%	#	%
<u>Gesture</u>				
5.5-5.9	10	2.6	0	0.0
6.0+	8	2.1	0	0.0
Boys	12	3.1	0	0.0
Girls	6	1.6	0	0.0
5.5-5.9 Boys	6	1.6	0	0.0
6.0+ Boys	6	1.6	0	0.0
5.5-5.9 Girls	4	1.0	0	0.0
6.0+ Girls	2	0.5	0	0.0
Class	0	0.0	2	1.1
Total	18	4.7	2	1.1
<u>Verbal</u>				
5.5-5.9	128	33.3	59	31.9
6.0+	110	28.6	36	19.5
Boys	143	37.2	62	16.1
Girls	95	24.7	33	8.6
5.5-5.9 Boys	76	19.8	37	20.0
6.0+ Boys	67	17.4	25	13.5
5.5-5.9 Girls	52	13.5	22	11.9
6.0+ Girls	43	11.2	11	5.9
Class	73	19.0	70	37.8
Total	311	80.1	165	89.1
<u>Physical</u>				
5.5-5.9	26	6.8	11	5.9
6.0+	17	4.4	6	3.2
Boys	32	8.3	11	5.9
Girls	11	2.9	6	3.2
5.5-5.9 Boys	20	5.2	8	4.3
6.0+ Boys	12	3.1	3	1.6
5.5-5.9 Girls	6	1.6	3	1.6
6.0+ Girls	5	1.3	3	1.6
Class	12	3.1	1	0.5
Total	55	14.3	18	9.6

TABLE C-5
SOCIOGRAM RESULTS FOR SCHOOL TWO

Child	Age	Gender	Choices			Times Chosen			Sum
			1st	2nd	3rd	1st	2nd	3rd	
1	6	B	4	5	3	1	4	3	8
2	6	G	10	11	8	2	3	2	7
3	6	B	5	12	1	2	2	2	6
4	6	B	1	5	9	2	1	3	6
5	5.5	B	3	4	1	3	2	1	6
6	5.5	G	11	9	2	1	0	3	4
7	5.5	B	4	12	5	3	1	0	4
8	6	G	2			1	0	2	3
9	6	G	8	1	6	0	1	2	3
10	6	G	15	2	6	1	2	0	3
11	5.5	G	6	2	9	2	1	0	3
12	6	B	3	1	4	0	2	1	3
13	5.5	B	7	1	4	1	1	0	2
14	6	G	11	10	2	1	0	0	1
15	5.5	G	14	10	8	1	0	0	1
16	5.5	B	7	3	12	1	0	0	1
17	5.5	B	16	13	1	0	1	0	1
18	6	G	2	3	4	0	0	0	0
19	5.5	G	5	2	6	0	0	0	0
20	6	B	7	1	3	0	0	0	0
21	5.5	B	13	17		0	0	0	0
22	5.5	B	5	7		0	0	0	0

TABLE C-6
SOCIOGRAM TALLIES FOR SCHOOL TWO

Choices	Girls Aged					Boys Aged				
	5	5.5	6	6.5	Sum	5	5.5	6	6.5	Sum
1st	0	4	5	0	9	0	8	5	0	13
2nd	0	1	6	0	7	0	5	9	0	12
3rd	0	3	6	0	9	0	1	9	0	10
Sum	0	8	17	0	25	0	14	23	0	37

note: Three children would not make three choices, 62 total.

TABLE C-7
ACTIVITY LENGTH AND PERCENTAGES FOR WEEKS

Week #	1-10		11-20		21-30		31-40		41-50		51-60		61-70		71-80		81-90		91-100		Total	
	min	%	min	%	min	%	min	%	min	%	min	%	min	%	min	%	min	%	min	%	min	%
1	22	1.0	36	1.6	21	0.9	33	1.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	112	5.0
2	44	2.0	94	4.2	74	3.3	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	309	13.8
3	23	1.0	54	2.4	57	2.5	0	0.0	0	0.0	0	0.0	0	0.0	72	3.2	0	0.0	97	4.3	206	9.1
4	18	0.8	24	1.1	68	3.0	33	1.5	43	1.9	114	5.1	0	0.0	0	0.0	0	0.0	0	0.0	300	13.4
5	19	0.4	43	1.9	76	3.4	38	1.7	0	0.0	53	2.3	0	0.0	0	0.0	0	0.0	0	0.0	219	9.7
6	19	0.8	40	1.8	0	0.0	64	2.8	0	0.0	0	0.0	0	0.0	0	0.0	90	4.0	0	0.0	213	9.4
7	27	1.2	77	3.4	51	2.3	35	1.6	0	0.0	0	0.0	0	0.0	75	3.3	0	0.0	0	0.0	265	11.8
8	14	0.6	42	1.9	0	0.0	39	1.7	93	4.1	60	2.7	0	0.0	0	0.0	0	0.0	0	0.0	248	11.0
9	4	0.2	40	1.8	29	1.3	0	0.0	41	1.8	0	0.0	0	0.0	0	0.0	89	3.9	0	0.0	203	9.0
10	7	0.3	67	3.0	27	1.2	35	1.6	45	2.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	181	8.1
Total	187	8.3	517	23.1	403	17.9	277	12.4	222	9.8	227	10.1	0	0.0	147	6.5	179	7.9	97	4.3	2256	100.3

min = minutes

TABLE C-8
ACTIVITY LENGTH AND PERCENTAGES FOR TEACHERS

Teacher	1-10		11-20		21-30		31-40		41-50		51-60		61-70		71-80		81-90		91-100		Total	
	min	%	min	%	min	%	min	%	min	%	min	%	min	%	min	%	min	%	min	%	min	%
A	31	1.3	25	1.1	68	0.3	0	0.0	0	0.0	60	2.7	0	0.0	0	0.0	0	0.0	0	0.0	184	8.2
B	57	2.6	55	2.5	52	2.3	32	1.4	41	1.8	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	237	10.6
C	21	0.9	63	2.7	78	3.4	35	1.6	45	2.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	242	10.6
Z	19	0.9	140	6.2	21	0.9	106	4.8	48	2.1	110	4.8	0	0.0	147	6.5	179	7.9	97	4.3	867	38.4
D	3.5	0.2	32	1.4	53	2.3	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	88.5	3.9
E	3.5	0.2	44	2.0	0	0.0	30	1.3	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	77.5	3.5
F	9.5	0.5	30	1.4	78	3.4	16	0.7	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	133.5	6.0
G	25.5	1.2	56	2.4	0	0.0	16	0.7	45	2.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	142.5	6.3
H	18	0.8	72	3.2	55	2.4	39	1.7	43	1.9	57	2.5	0	0.0	0	0.0	0	0.0	0	0.0	284	12.5
Total	187	8.3	517	23.1	403	17.9	277	12.4	222	9.8	227	10.1	0	0.0	147	6.5	179	7.9	97	4.3	2256	100.3

min = minutes

TABLE C-9
STIMULI AND PERCENTAGES FOR WEEKS

Week #	V-T/K		A-V-T/K		A-V		A-T/K		T/K		A		Total	
	#	%	#	%	#	%	#	%	#	%	#	%	#	%
1	3	2.4	5	4.0	1	0.8	0	0.0	1	0.8	0	0.0	10	8.0
2	7	5.6	8	6.3	5	4.0	0	0.0	0	0.0	0	0.0	20	15.9
3	3	2.4	3	2.4	4	3.2	0	0.0	1	0.8	2	1.6	13	10.4
4	6	4.8	5	4.0	6	4.8	1	0.8	1	0.8	0	0.0	19	15.2
5	5	4.0	4	3.2	0	0.0	1	0.8	0	0.0	0	0.0	10	8.0
6	3	2.4	5	4.0	3	2.4	0	0.0	0	0.0	0	0.0	11	8.8
7	5	4.0	3	2.4	4	3.2	2	1.6	0	0.0	0	0.0	14	11.2
8	6	4.8	3	2.4	1	0.8	1	0.8	0	0.0	0	0.0	11	8.8
9	3	2.4	2	1.6	1	0.8	1	0.8	1	0.8	0	0.0	8	6.4
10	2	1.6	3	2.4	5	4.0	0	0.0	0	0.0	0	0.0	10	8.0
Total	43	34.4	41	32.7	30	24.0	6	4.8	4	3.2	2	1.6	126	100.7

V-T/K = Visual-Tactile/Kinesthetic
A-V-T/K = Auditory-Visual-Tactile/Kinesthetic
A-V = Auditory-Visual
A-T/K = Auditory-Tactile/Kinesthetic
T/K = Tactile/Kinesthetic
A = Auditory

TABLE C-10
STIMULI AND PERCENTAGES FOR TEACHERS

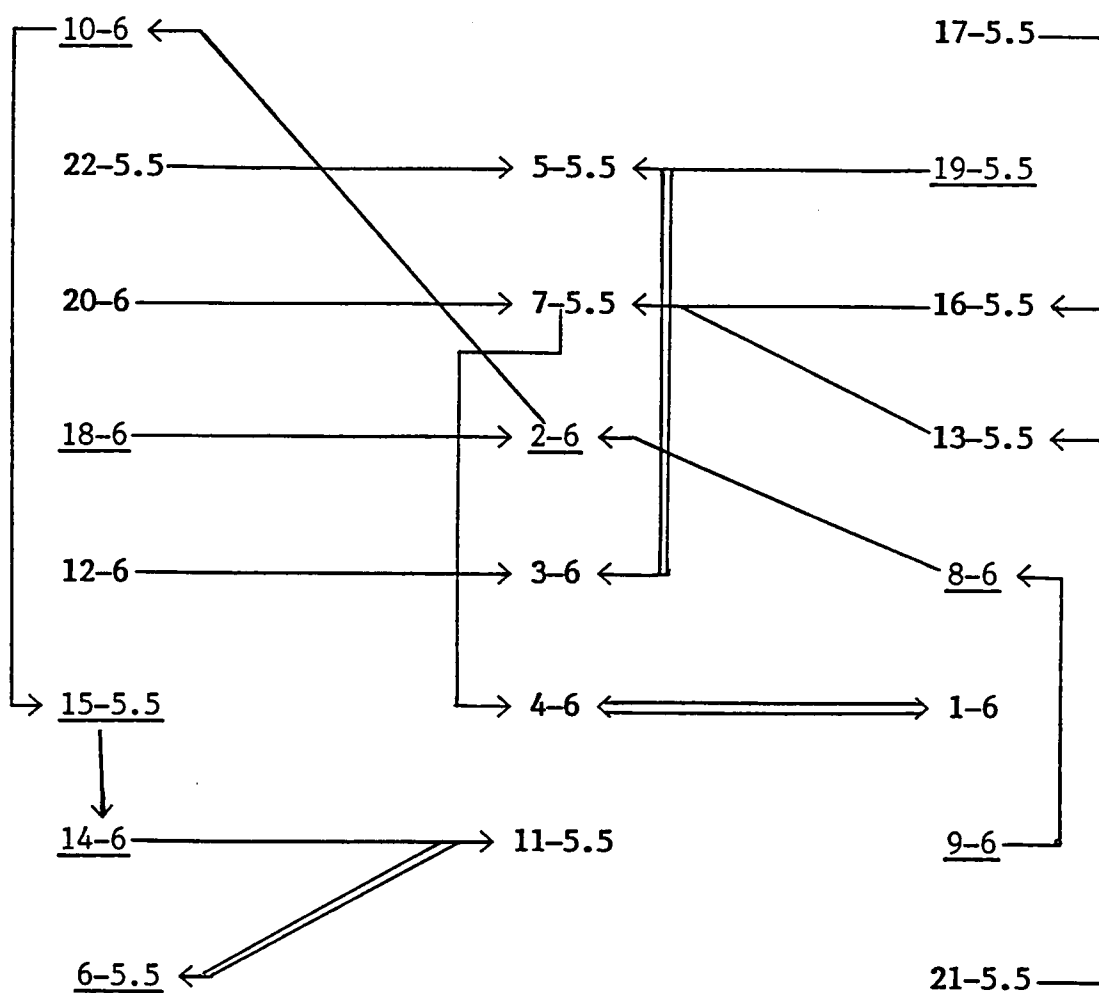
Teacher	V-T/K		A-V-T/K		A-V		A-T/K		T/K		A		Total	
	#	%	#	%	#	%	#	%	#	%	#	%	#	%
A	5	4.0	5	4.0	1	0.8	1	0.8	1	0.8	0	0.0	13	10.4
B	5	4.0	5	4.0	5	4.0	1	0.8	0	0.0	0	0.0	16	12.8
C	4	3.2	5	4.0	4	3.2	1	0.8	0	0.0	1	1.8	15	12.0
Z	10	8.0	5	4.0	9	7.2	1	0.8	0	0.0	0	0.0	25	20.0
D	2	1.6	4	3.2	3.5	2.8	0	0.0	0	0.0	0	0.0	9.5	7.6
E	3	2.4	3	2.4	1.5	1.2	0	0.0	1	0.8	0	0.0	8.5	6.8
F	2	1.6	2	1.6	2.5	2.0	2	1.6	1	0.8	1	0.8	10.5	8.4
G	3	2.4	5	4.0	1.5	1.2	0	0.0	1	0.8	0	0.0	10.5	8.4
H	9	7.2	7	5.6	2	1.6	0	0.0	0	0.0	0	0.0	18	14.4
Total	43	34.4	41	32.7	30	24.0	6	4.8	4	3.2	2	1.6	126	100.7

V-T/K = Visual-Tactile/Kinesthetic
A-V-T/K = Auditory-Visual-Tactile/Kinesthetic
A-V = Auditory-Visual
A-T/K = Auditory-Tactile/Kinesthetic
T/K = Tactile/Kinesthetic
A = Auditory

TABLE C-11
SURVEY RESPONSE
ATTENTIVENESS FACTORS AND PERCENTAGES

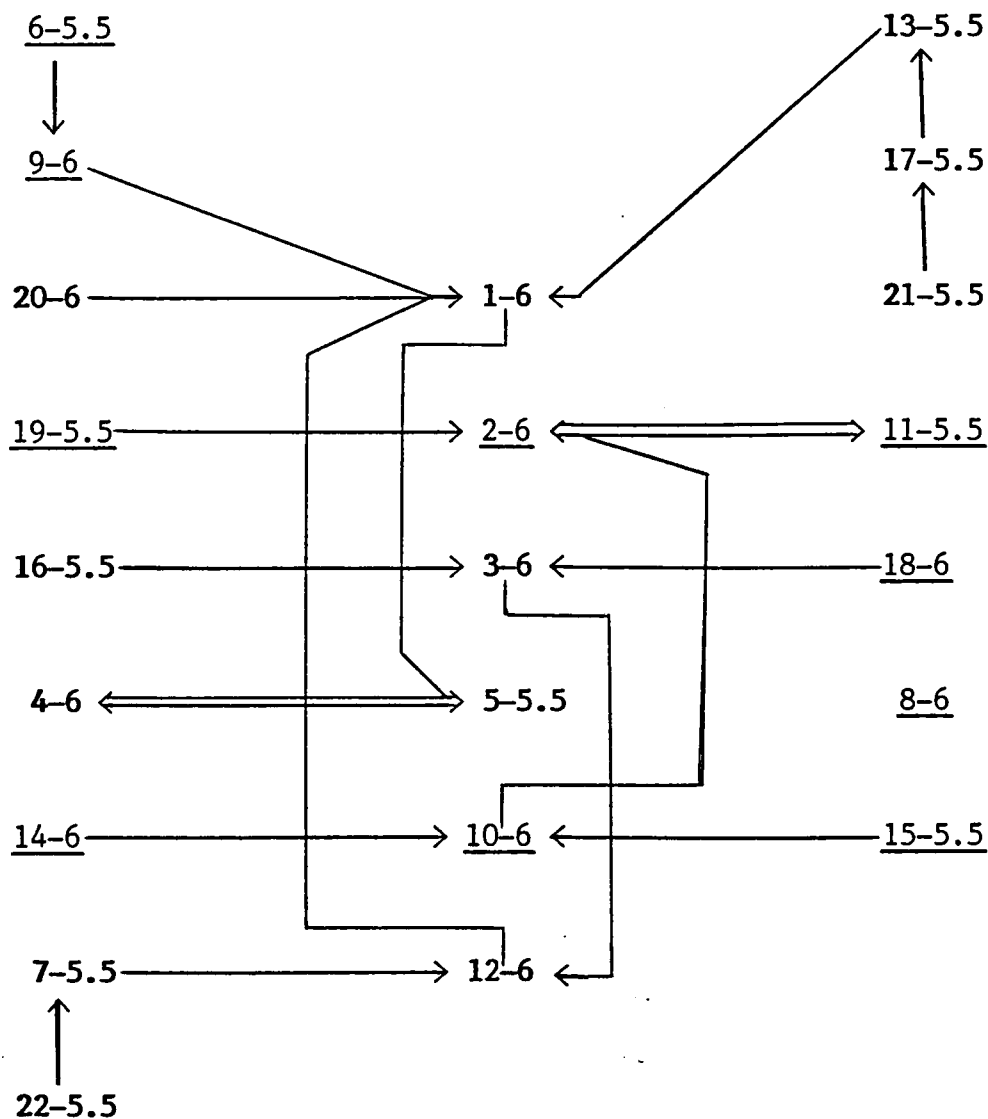
Rating #	Child		Child's Condition		Weather		Classroom Environment		Classroom Interruptions		Teacher		Teacher's Condition		Stimuli	
	#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%
1	2	25.0	0	0.0	0	0.0	2	25.0	0	0.0	4	50.0	0	0.0	0	0.0
2	3	37.5	0	0.0	0	0.0	0	0.0	0	0.0	2	25.0	1	12.5	2	25.0
3	1	12.5	4	50.0	0	0.0	1	12.5	0	0.0	0	0.0	1	12.5	1	12.5
4	1	12.5	2	25.0	0	0.0	1	12.5	1	12.5	1	12.5	0	0.0	2	25.0
5	1	12.5	2	25.0	0	0.0	2	25.0	0	0.0	1	12.5	2	25.0	0	0.0
6	0	0.0	0	0.0	0	0.0	0	0.0	5	62.5	0	0.0	1	12.5	2	25.0
7	0	0.0	0	0.0	0	0.0	2	25.0	2	25.0	0	0.0	3	37.5	1	12.5
8	0	0.0	0	0.0	8	100.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0

note: Rating: 1 - most important, 8 - least important



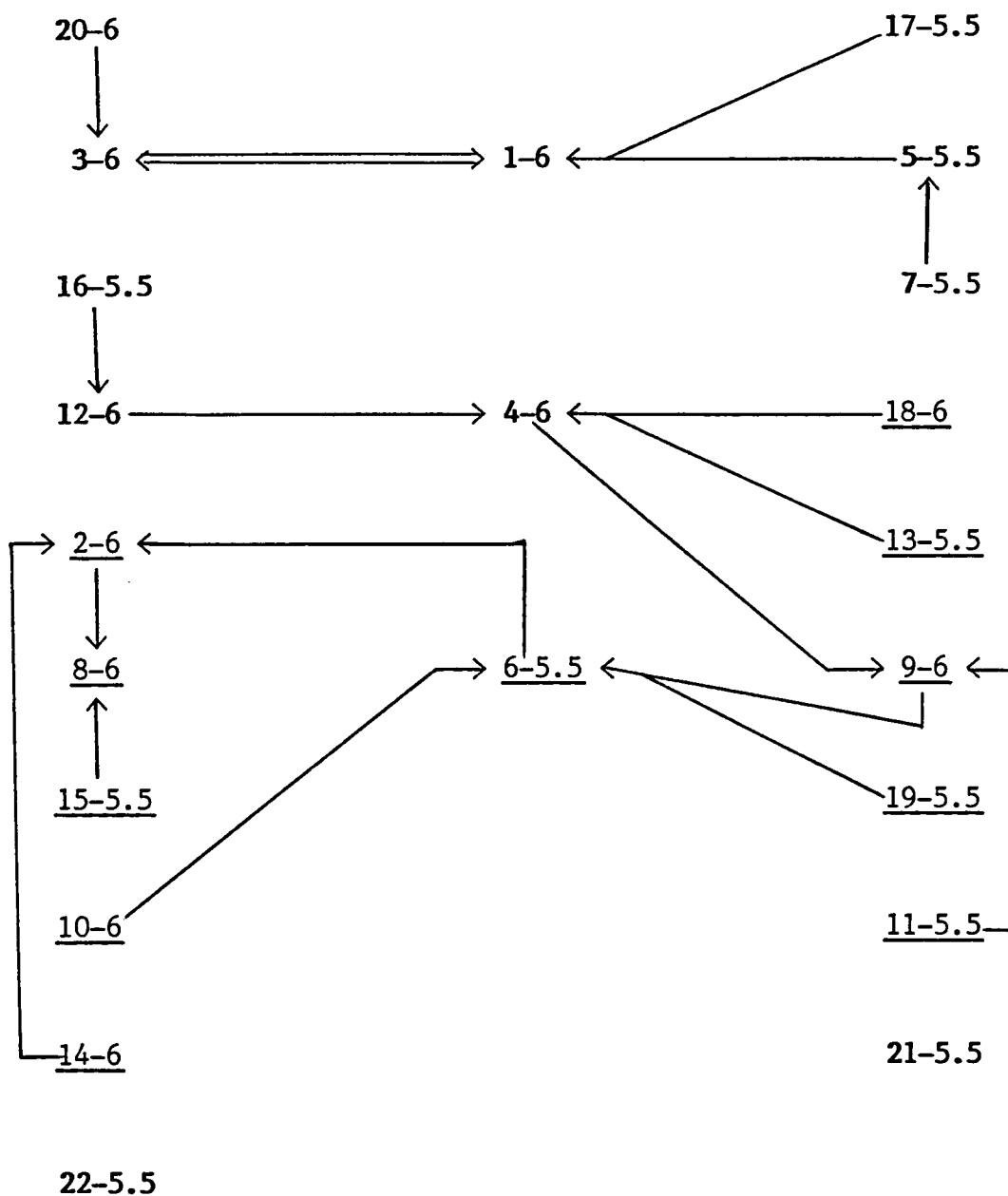
Key:
 Middle: Most Chosen
Underlined: Girls, **Bold Print: Boys**
 Numbers: Identity-Age of Child
 Mutual Choices: <====>, One Way Choices: <----->

FIGURE C-1. SOCIOGRAM FIRST CHOICES FOR SCHOOL TWO



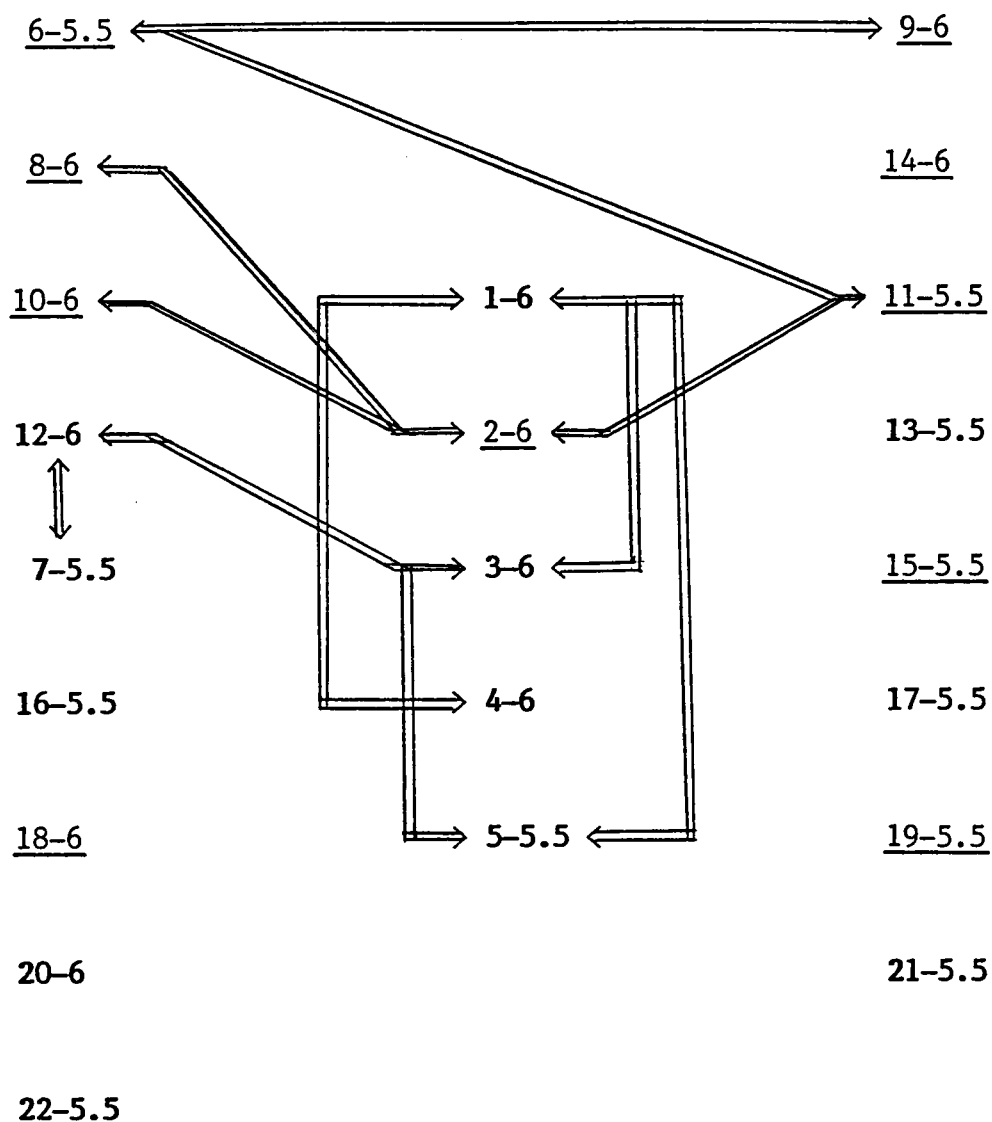
Key:
 Middle: Most Chosen
Underlined: Girls, **Bold Print: Boys**
 Numbers: Identity-Age of Child
 Mutual Choices: <=====>, One Way Choices: <----->

FIGURE C-2. SOCIOGRAM SECOND CHOICES FOR SCHOOL TWO



Key:
 Middle: Most Chosen
Underlined: Girls, **Bold Print: Boys**
 Numbers: Identity-Age of Child
 Mutual Choices: <=====>, One Way Choices: <----->

FIGURE C-3. SOCIOGRAM THIRD CHOICES FOR SCHOOL TWO



Key:
 Middle: Most Chosen
 Underlined: Girls, Bold Print: Boys
 Numbers: Identity-Age of Child
 Mutual Choices: <----->, One Way Choices: <-----

FIGURE C-4. SOCIOGRAM TOTAL MUTUAL CHOICES FOR SCHOOL TWO

VITA

Judith Collins Hiscock was born in Middlesboro, Kentucky on July 17, 1950. She attended elementary and junior high schools in Oak Ridge, Tennessee, and graduated from Clinton High School in Clinton, Tennessee in June 1969. That same month she entered the University of Tennessee, Knoxville, and in June 1973 she received a Bachelor of Science degree in Elementary Education with a minor in Child Development.

In the fall of 1973 she accepted a kindergarten teaching position with a public school system where she taught for three years. After remaining at home with her oldest child for a year, she resumed teaching in 1977 at a church preschool with children aged six months to four years and remained there for three years, until her second child was born. In September 1981 she re-entered the University of Tennessee, Knoxville, to work toward a Master's degree, and became the director of a church preschool program where she worked for two years, leaving in 1984 to teach for one year at a school for emotionally disturbed children. The Master of Science in Curriculum was awarded in December 1986.