THE EFFECT OF A PARENT - TRAINING PROGRAM ON THE INTELLECTUAL AND INTERPERSONAL BEHAVIOR OF PRE - SCHOOL CHILDREN

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ABSTRACT

THE EFFECT OF A PARENT-TRAINING PROGRAM
ON THE INTELLECTUAL AND INTERPERSONAL BEHAVIOR
OF PRE-SCHOOL CHILDREN

By

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Child development research indicates that early childhood is the time during which the child is most flexible and receptive to measures for promoting his intellectual and social growth. A major responsibility for taking these measures must be with parents. In today's complex society many concerned parents find it difficult to know how to apply themselves in meeting this responsibility. Concerned professionals have recently attempted to aid a larger number of parents in their efforts to maximize their children's intellectual and social growth. One of the techniques for doing so has been the training of parents to implement specific parent-child interaction programs in the home. This method has been infrequently employed and little is known about its outcomes from adequate experimentation. The present study was designed to evaluate a program for training parents for home use of Parent-Child Interaction Exercises (PIE) a specific parent-child interaction program designed by the study for promoting the cognitive and interpersonal growth of children.

The results of the present study show that parent participation in the study's workshop training program and subsequent parent-child interaction has no measurable effect on the cognitive and social growth of their child. This study also indicated that cognitive and social growth are not related but that cognitive growth seems to be related to demographic factors. Time was shown to have an effect on the social behavior of the participants. Although the study's workshop training program did not bring about any measurable changes in the cognitive and social growth of the participants when contrasted with a control group it did promote positive parent-child interaction and relationships.

Findings from the present study indicate the need for future research on parent training. Recommendations for the areas of parent training that future research should focus on are discussed in the present study.

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By

Garret Earl Payne

A DISSERTATION

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To

Debbie, Terry and Kenya

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CHAPTER 1

INTRODUCTION

In recent years an increasing amount of research has been done regarding the influence of the parent on the child's development during its early years. This research has given added support to the notion that an individual's cognitive make-up, social behavior and personality is to a great extent determined by early parent-child relationships. These studies fall into three general categories: Parent-child interaction and its influence on cognitive development in children; Parent-child interaction and its influence on social and personality development in children; and child service programs related to Parent-child interaction.

Parent-Child Interaction and Its Influence on Cognitive Development in Children

Until recently childhood intelligence and cognitive development was viewed in terms of their relationship to demographic variables such as family socio-economic status, mental abilities of parents, parent education, family income, race, etc. The value of such measures has come under considerable criticism. Questions regarding this matter received some of their impetus from studies indicating that the cognitive development of adopted children has no significant

correlation with the demographic characteristics of their adopting parents (Bishop, 1959; Burkes, 1928; Leahy, 1935). Similar studies have shown that in certain cases the intelligence scores of adopted children are higher than those of their natural parents (Skodak & Skeels, 1949; Honzik, 1967). Although these studies reach no definite conclusions as to the reason for these differences, several authors suggest that the features of the adopting homes which produced this are "...maximum security, an environment rich in intellectual stimulation, a well balanced emotional relationship, intellectual agility on the part of the foster parents...."

More recent studies also indicate that neither the socioeconomic class of a child or the education of its parents is related to the child's cognitive and intellectual development (Dave, 1963; Wolf, 1964). Gruen, et. al. (1970) report that they could not find any main effects of social class on the learning performance of low and middle class children. These findings were reported as being similar to those of earlier studies (Gruen & Zigler, 1968; Odom, 1967). Beckwith (1971) in a study involving infants, states that no difference in the intellectual development could be attributed to socioeconomic class. However, intellectual performance by the children was found to decrease where experiences were diminished by a combination of restricted exploration in the home and few parental contacts. Palmer's (1970) investigation of differences in intellective performance among Black pre-

school boys found the influence of socio-economic class to be negligible. The comparatively recent emergence of studies demonstrating that careful psychological assessments of parent stimulation of the child serves as a better predictor of the I.Q. scores than social class indexes such as parental income, education, and occupation, supports these findings (Walberg & Marjoribanks, 1973). This more recent position regarding children's cognitive development is further supported by findings showing substantial variability of children's cognitive development within racial and socio-economic groups (Davidson & Greenberg, 1967; Deutsch & Brown, 1964; Dreger & Miller, 1960).

As a result of the questioning of a cause and effect relationship between demographic variables and cognitive development, research in this area of cognitive development has resulted in more emphasis being placed on the influence that parental practices have on children's cognitive and intellectual development. Many professionals have come to believe that parent-child interactions are important in determining cognitive development and personality (Bloom, 1964). Bayley and Schaefer (1969) report that by four years of age boys having equalitarian, positively evaluating mothers, tend to make higher intelligence scores than boys with anxious, irritable, threatening, punitive, and ignoring mothers. Girls with loving and accepting mothers were said to make higher scores than girls with hostile and rejecting mothers.

In a study involving 128, eight year old English children, Kent and Davis (1957) found that children from homes where parents show little concern for them, score lower on the Stanford-Binet and W.I.S.C. tests than do children from homes where parents show concern. In this study unconcerned parents were regarded as those who had few ambitions for their children, gave them little guidance or encouragement, and were not concerned about their children's success or failure. Reports by Wolf (1964) and Dave (1963) indicate that children coming from homes where parents' interest in their intellectual development is expressed through pressures to succeed and assist them in doing so, demonstrate superior intellectual ability. This is especially evident where the development of verbal skills is concerned.

With regard to the development of differential cognitive abilities, certain child rearing practices might tend to favor the development of one type of cognitive ability over another. Several studies suggest that the essential conditions for the development of verbal skills is probably the close relationship with an adult and high degree of mother-child interaction (Witken, 1959; Levy, 1943; Levinson, 1958; Kent, 1957; Bing 1963). Bing (1963) states that number ability, spatial ability, and the development of cognitive skills requiring concentration and the ability to carry the task through are promoted through interaction with the physical environment.

Studies having to do with the cognitive skill of flexible thinking or the ability to consider and assess alternative ways to reach a goal, indicate that this skill is limited by certain child rearing practices (Barclay & Cusumano, 1967; Dawson, 1963; Seder, 1957; Witkin, Dyk, Faterson, Goodenough, & Karp, 1962). The above authors report findings which suggest that flexible thinking is limited by such parental practices as (1) over-protectiveness, (2) over-controlling behavior by mothers, (3) severe punishment, (4) weak and/or ambivalent paternal behavior, (5) maternal domination and/or paternal absence, (6) suppression of controversy and emotional expression in the home. In his investigation of child rearing antecedents to flexible thinking, Busse (1969) did find a negative linear relationship between commanding maternal behavior and flexible thinking in children, and a negative linear relationship between father attitudes expressing rigid and absolute standards, and flexible thinking. Busse also states that his findings indicate that the relationship between parental control and flexible thinking might be curvilinear. This suggests that moderate parental control would be most effective where this variable is concerned.

Creativity which is an important facet of cognitive development has been shown to be related to curiosity (Maw & Maw, 1970). Curiosity in turn has been shown to be influenced by the parent-child relationship. Results from the Saxe and Stollack (1971) study suggest that mothers of curious,

high socially active boys, displayed more positive feelings, fewer restrictions, and less non-attention than mothers of boys who did not exhibit these characteristics. The study also indicates, as have other studies, that parental concern and flexibility does have a positive influence on cognitive development.

One of the most important cognitive skills is reading. Milner (1951) investigated patterns of parent-child interactions as they related to reading readiness in children. She, too, found factors other than social class variables which were associated with verbal skills. Milner indicated that cognitive development in children as it relates to the development of verbal skills was promoted by such things as: (1) being read to by important adults, (2) availability of books, (3) positive emotional interactions with parents, (4) being read to by parents in a manner they could enjoy, (5) going places with parents and being able to experience it in a context of appreciation, (6) being made aware of being able to verbally focus on experiences involving feelings of happiness. In the above study, Milner also states that high scorers seem to be subjected to controlling, preventing, disciplinary techniques while low scorers seemed to be subjected to liberal direct physical punishment from both parents. Mothers of high scorers also were reported as having more adult-like verbal interaction with their children and more verbal interaction during mealtime. These parents also

seemed to be more overtly affectionate and to give more clear assurances of their love for their child.

In viewing the cognitive development of children, academic and scholastic performance should not be ignored as an indicator of cognitive development and performance. Research in this area has also found academic achievement to be related to patterns of child rearing and parent-child interaction.

In the area of academic achievement Grunebaum, et al. (1962) found that certain parent attitudes led to difficulties in the acquisition of academic skills in their children. Solomon, et al. (1971) also found that child rearing behavior, parent-child interaction along with the personality of the child were related to differences in children's academic strivings and achievement related motives and values. Findings from the above study suggested that children will perform better on an academic task if they have experienced positive behavior from parents helping them on a similar achievement oriented task(s). DiBartelo et al. (1969), finds that the performance of pre-school children on a complex task is more efficient under nurturant conditions than under conditions where nurturance is deprived.

In brief, it seems that parent-child interaction serves as the primary force in promoting or limiting cognitive development. Evidence indicates that cognitive development is promoted by parents exhibiting the following behavior in

their parent-child interactions: (1) Nurturance, (2) Concern, (3) Verbal interaction, (4) Moderate firmness and assistance, (5) Relative freedom. It also seems that cognitive development is promoted when a high degree of interaction takes place between parent and child, and where the parent exhibits the above behavior. In addition to promoting cognitive development the above type of parent-child interaction also seems to promote better academic performance in children.

In looking at the influence of parent-child interaction in cognitive development it is important to emphasize here that racial, class, and socio-economic differences have not been found to be related to the development of these skills.

Parent-Child Interaction and Its Influence on Social and Personality Development in Children

Parent-child interaction has long been considered as the primary determiner of childrens' personality and social behavior, and although research in this area has preceded most of that in the area of cognitive development, most of it is recent when compared to the first theoretical notions related to this topic. Now an increasing focus is being placed on the relationship between certain parent life styles and attitudes and the development of those personality and social traits exhibited in or affecting a child's social behavior. Findings from research involving both "normal" and "disturbed" children and their parents have given increased empirical support to the premise that the parents' life styles reflected

in parent-child interaction plays a major role in the development of their children.

Lidz (1971) reports that investigators conducting a study of families with a schizophrenic child, conclude that the disease results from an extreme deficiency in the nurturing supplied by parents, plus a deficiency in the transmission from parents to child of the basic techniques, particularly those dealing with language, that he needs for adapting himself to the world when he leaves the family. Although recognizing that some aspects of schizophrenia may be organic in nature, others support the notion that many schizophrenic behaviors may be non-organic in nature and related to parental behavior and parent-child interaction (Goldfarb, 1971). In a review of studies having to do with disturbed children, Frank (1965) concludes that schizophrenic children typically seem to have "...mothers who are dominant, fathers who are passive...The mother is over-protective, over-possessive, and over-controlling, yet basically albeit unconsciously, rejecting." In this same review he also concludes that the above parental characteristics can also be found in parents of "normal" and "neurotic" children although not in the same frequency. He also says, "Moreover in many respects, it would be hard, on blind analysis, to distinguish the family which produced an emotionally disturbed child from that which produced the so-called normal well-adjusted child" (pp. 197-8).

On Frank's (1965) report and the assumption that emotional disturbance can be attributed to certain parenting patterns, one would suspect that varying degrees of emotional disturbance exists among the "normal" or "adjusted" child population. Aston et al. (1972) reports findings supporting this reasoning. In their study some children in a population of "normal" children were found to exhibit identifiable degrees of disturbance in their social behavior. When rated in terms of their parent-child interaction, mothers of these children were seen as being over-dominant, and over-attentive when compared to parents of children who were not identified as showing signs of disturbance in their social behavior. Fathers of the disturbed children were described as being comparatively withdrawn. Peterson et al. (1959) stated that personality problems in a group of clinic children seemed to be related to autocratic attitudes and lack of paternal concern, while conduct problems were associated with evident permissiveness and disciplinary ineffectiveness on the part of fathers. When compared to the parents of normal children, clinic parents were judged to be less sociable and less democratic.

Sears, et al. (1957) carried out what is recognized as one of the important forerunners in the study of childrearing and parent-child interaction. From their findings, these authors concluded that the maternal qualities that did the most to influence the child's personality were (1) Maternal

warmth: the authors hypothesized from their findings that the children of warm mothers matured earlier in their social behavior than children of cold mothers. (2) Punishment: punishment was not found to be effective when used by mothers. (3) Permissiveness: permissiveness for aggression was found to promote continued aggressive behavior, while permissiveness for dependency did not have the same effect.

Baumrind (1967) recently conducted an important investigation to study child care practices that antecede behavior patterns in pre-school children. Baumrind states, "With varying degrees of consciousness and conscientiousness, parents create their children psychologically as well as physically." From a pre-school population of 110 children, three groups of children were identified according to the behavior patterns they exhibited. Parents of children who were self-controlled, affiliative, self-reliant, explorative, self-assertive and content were found to be consistent, loving, conscientious, and secure in handling their children. These parents were also reported as being more supportive and clear in their communication with their children than parents of the other children. Parents of children who were discontent, apprehensive, less affiliative toward peers, and distrustful were found to be comparatively less nuturant and involved with their children. Little supportive or affectionate interaction was carried on by these parents. Parents of children who had little self-control, little self-reliance,

and were shy to new experiences were much less controlling, ambivalent, lax, and only moderately loving.

Bishop (1951) suggests that much of the behavior exhibited by parents is reflected in the behavior of children. In a study involving children between the ages of three years four months and five years seven months, she reported children of very directing interfering, and critical mothers to be non-cooperative and inhibited. A positive correlation was also found between mothers non-acceptance and the child's tendency toward refusal. Those behaviors exhibited by the children in this study were also found to be transferred to their interactions with other adults, as children became more familiar with them. Brody (1969) reported that pre-school children of high disciplinarian mothers used more directing behavior in their parent-child interactions than children of low disciplinarian mothers. Children of high rejecting mothers were not as attentive in looking at their mothers, carried out more independent play, had a lower rate of compliance with mother's request. These same children also sought more attention, approval, and praise from their mothers. Nakamura's (1959) findings show that children of parents exercising positive types of discipline have a more favorable attitude toward their parents than children of parents who discipline their children in a negative way. This is important in that children's perception of parents coming from parent-child interactions has been stated to be

as important an influence on the child's development as the interaction itself (Serot & Teevan, 1961).

As with cognitive development, parent-child interaction seems to be the primary force in determining the personality and social behavior of children. Research indicates that many parental qualities which seem to promote positive personality and social development are those found to promote good cognitive development. Those qualities which seem to stand out are: (1) Nurturance, (2) Moderate firmness, (3) Expression of love, (4) Consistency, and (5) Conscientiousness. With regard to negative personality development (1) over-dominance, (2) lack of concern, and (3) over-attentiveness appear to be major parental forces. Evidence also indicates that the manner in which children relate to parents in their interactions is carried over to their interaction with others. Again, with regard to the influence of racial, class, and socio-economic differences the general conclusion from these findings suggest it to be insignificant.

Child Service Programs Related to Parent-Child Interaction

Because of the growing awareness of the impact of the parent-child relationship on the cognitive and personality development of the child as reviewed in the last two sections, many pre- and early school programs have taken action to educate and consult parents in ways to improve their parent-child interaction. Reports from the Demonstration and

Research Center for Early Education (DARCEE) at George Peabody College for Teachers, in Nashville suggest that training mothers in ways to improve their children's learning performance is effective (Gray, 1967, 1968, 1970). The reports state that not only did effective mother-training improve achievement scores of the children involved but also their younger siblings. Similar results were reported from the Verbal Interaction Project, Mother-Child Home Program at Freeport, New York where home visits were made to stimulate mothers to use more verbal interaction in their play with children (Levenstein, 1968, 1969, 1972a, 1972b).

In assessing the longitudinal effects of a cognitively oriented program which included weekly home visits to promote parent involvement, the Perry pre-school Project at Ypsilanti, Michigan (1969) reported that significant gains were made by experimental children on achievement and performance tests when contrasted with control children whose parents did not receive home visits.

Parent training workshops have been shown to promote cognitive development in children, as demonstrated by Boger et al. (1969). This study reports results supporting the notion that parents participating in programs stressing increased parent-child interaction helps to improve their childrens' cognitive development. They also report results suggesting that children of parents participating in specific training programs perform better than children whose parents

participate in a general workshop or have no training at all. As indicated above many programs have found that training parents in ways to interact with their children can successfully promote learning in children.

Educating and consulting parents and other adults in ways to interact with children has also become a part of some programs offering psychological services (Caplan, 1970; Guerney, 1964; Stollack, 1973; Yahraes, 1971; Wittenberg, 1971). Guerney (1964) proposes filial therapy which would involve the training of parents of young children to conduct play sessions with their own children in a very specific way. Support for this technique has been found in the prior action of others who have either promoted or initiated the notion of parents conducting "play therapy" in the home with fairly normal children (Moustakas, 1959; Fuchs, 1957).

Certain learning programs and various child psych-service programs have also adopted the homes of parents as the primary service arena (Lane, 1971; Jason, Clarfield, & Cowan, 1973). These authors report improvement both behaviorally and intellectually in those children involved in such home activities.

Results from programs where training of parents to promote cognitive development has been initiated, show that parents can effectively be trained and indeed often are interested in such training. Reports from programs where training of parents to promote emotional development suggest that parents can effectively be trained in this area also.

Again it is important to recognize that racial, class, and socio-economic differences seem to be irrelevant.

The Problem

In exploring the influence of parent-child relationships on childhood development, researchers have reported significant findings which demonstrate and support the notion that these relationships are a major force in determining early childhood development. These findings have prompted a slow movement by child service programs to make the promotion of better parent-child relations a fundamental goal of their overall plan to promote cognitive, emotional, and social growth in the children of the communities served. One of the recent techniques for this purpose has used specific parent-child interaction programs that can be easily understood and implemented by parents in their home. This technique has the potential for releasing child service programs from the limitations of paid staff, facility space, time, and the use of other such resources. Thus, by employing this technique, programs can be given more latitude and more parents and children can have the advantage of their service. However, this method has been infrequently employed and little is known about it from adequate experimentation. It is therefore important that experimentally sound empirical data be collected regarding the effectiveness of prepared parent-child interaction programs in promoting the cognitive and social behavioral skills of children.

This study is therefore designed to evaluate a program which can easily be employed by parents to train large numbers of children in cognitive and interpersonal growth by stimulating and educating parents to make better use of parent-child interaction activities. This study will train parents to use written materials to improve parent-child relationships. The program will be specifically structured to improve the child's cognitive and interpersonal growth.

Hypothesis

A workshop program to train parents in the use of written information to promote cognitive and interpersonal growth will be contrasted with written information and a control situation. The specific hypothesis for comparing the experimental conditions is as follows:

Cognitive skills, interpersonal behavior and parent-child involvement will be greatest when parents are trained in a workshop setting, contrasted with parents given written instructions or when no instructions are given.

CHAPTER II

METHOD

Design

Three experimental conditions were created to test the study's hypothesis.

(1) Workshop training in the use of information materials: Parents of children were scheduled to attend six action workshops designed to educate them in the effective implementation of the program's book of parent-child interaction activities (Appendix A). This book consisted of:

(a) A series of parent-child interaction activities to be used at specified intervals by parents as a means to promote their child's intellectual and emotional development.

(b) Statements and guidelines for parents to use when implementing the parent-child activities.

The workshops were designed to take place over a six week period, after which parents received the program's book.

(2) Written information: At the same time as parents received the book in the workshop condition, parents in the information control condition also received the program's book of parent-child interaction activities.

(3) Control: During the study these parents received neither the study's action workshop or book of parent-child interaction activities.

The above three experimental conditions were established at three day care centers in Lansing, Michigan. One of the day care centers was public while the second and third were privately owned by the same source. The public center serviced primarily children of single parents who were unemployed, or unskilled employees, and/or attending classes at the local community college. In addition to the above population the private centers serviced children of parents who worked at occupations classified as professional, semi-professional, clerical and semi-skilled. Several parents of children attending the private centers had completed their education at the college level or in other training beyond secondary school. Thus there were occupational differences as well as income differences between the public center and the two private centers. In addition, the public center also serviced more Black and Chicano children. Henceforth the above day care centers will be referred to as public center, private center 1, and private center 2 respectively.

The conditions and experimental design for this study are shown below in Table 1. One experimental design consists of a stratified three-by-three analysis of covariance with pre- and post-test measures to determine improvement in cognitive skills. Another experimental design also consisted of repeated measures to determine changes over time in the social behavior of participants, the use of the program's book by parents, and the participant's awareness of the program's use by parents.

Table 1

Experimental Design of Study

Conditions	Workshop Training N	Written Information N	Control N	Total N
Public Center	9	11	10	30
Private Center I	7	8	6	21
Private Center II	8	7	6	21
Total N	24	26	22	72

Sampling Procedure

Seventy-two, three to four year-nine month old children attending three day care programs in Lansing, Michigan acted as participants in the present study. All participants were children of parents who requested the opportunity to participate in the study's workshop training program.

In the present study day care centers in the Lansing and East Lansing areas were approached to serve as sponsors of the study's program. Sponsorship of the program entailed working with the experimenter in a cooperative effort to support the study's experiemental design, to inform parents of the study's workshop training program and to involve them as potential program participants. Sponsorship of the program also entailed agreeing to provide necessary facilities to carry out the study's workshop training program, given that a sufficient number of parents from a sponsoring center requested an opportunity to participate. For purposes of maintaining an adequate sample this number was set at twelve.

A copy of these agreements can be found in the Appendix. Of some 20 day care centers approached, nine centers in the Lansing, East Lansing area agreed to sponsor the study's program. Of those nine centers three in the Lansing area had 20 or more parents who requested an opportunity to participate in the study's workshop training program. The parents of children attending these three centers were interviewed to secure the necessary data to make their children participate in the study and to make them eligible for participation in the study's workshop training program. The participants were matched on the basis of mother's age and marital status. The participants once matched were randomly assigned to participate in one of three experimental conditions established at each sponsoring center. Parents of these children were randomly assigned to participate in the study's parent training program, or to receive the study's written information without workshop training or to receive neither the study's workshop training, or written information.

Development of Experimental Conditions

Prior to the experimental phase of the present study certain developmental activities were necessary. Among these were the development of action workshops for the workshop training condition of the experiment, development of a book of parent-child interaction activities for the workshop training and written information conditions of the experiment, development of instruments to measure cognitive skills,

social behavior, program use by parents and participant awareness of program.

Action Workshop

Six action workshops were designed to train parents in the effective use of the study's book of parent-child interaction activities. Workshops were designed to take place on a weekly basis for six consecutive weeks with each workshop lasting two hours. Each workshop was designed to include the parents of at least four children but no more than the parents of ten children. In addition to parents, the program agent (experimenter) and his assistant were scheduled to be present at each workshop for purposes of directing, coordinating and recording workshop activities and discussions.

Action Workshop I: Action workshop I was devoted to (a) self introduction of participants, and (b) description of the program and its emphasis on the importance, value, and use of parent-child interaction activities by the experimenter. A summary stating the program's purpose, goals, techniques, materials, and the parent's and program agent's role in the program was presented in conjunction with a verbal description of the program.

Following participant introduction and program description, parents were given a handout (Appendix B) describing the use a program parent-child interaction activity and instructions for doing it. This activity was representative

of one of the program's game activities (Appendix B). Following this each workshop parent described how she and her child would interact in this particular program activity. When all the parents had made their descriptions, the program agent asked the group to comment on the approaches they observed that would or would not be most effective with their child. After the group discussion a short break was held.

After the break the program agent discussed three elements affecting the success of a parent-child interaction situation. The elements presented during Workshop I were (a) Clear explanation to the child of the interaction activity and related matters (e.g., Introduction, cancelled or changed activity). (b) Maintaining the interaction activity (e.g., handling interruptions). (c) Parent attitude (e.g., attention, conversation, praise). Once this presentation was made the program agent and his assistant role played the program activity discussed above in the workshop, with the agent role playing the parent and the assistant playing the child. This performance was pre-arranged to intentionally promote a positive expression of the elements discussed above.

Once the program agent and his assistant role played an interaction situation, parents were encouraged to make comments and to role play their own "situation." A group discussion of the situation was held following the parent's role playing of the situation.

Action Workshop II: Action workshop II was conducted in the same manner as Workshop I with the following exceptions:

(1) The parent-child interaction activity given by the handout and focused on during the workshop was one representing one of the program's reading activities (Appendix B).

(2) The three elements affecting the success of a parent-child interaction situation that were presented and discussed during role playing by the program agent and his assistant were: (a) Direction of an interaction activity (e.g., Don't give alternatives when not intended, adherence to schedule, sit down or kneel, give minimum help, don't make repeated suggestions). (b) Parent attitude (e.g., Don't use negatives, don't label or make comparisons, respect the child). (c) Parent involvement (e.g., Be flexible, ask for feedback from child).

Action Workshop III: Action workshop III was conducted in the same manner as the previous workshops, with the following exceptions:

(1) The parent-child interaction activity given in the workshop was one representing one of the program's discussion activities (Appendix B).

(2) All elements affecting the success of a parent-child interaction situation and presented in workshops I and II were presented.

Action Workshop IV, V and VI: Action workshops IV, V and VI were conducted in the same manner as workshops I, II and III respectively with the following exceptions.

(1) The parent-child interaction activity given for workshop IV represented a different game than that given on the handout for workshop I (Appendix B).

(2) The program agents and assistant did not engage in role playing.

Parent-Child Interaction Activities: A written pamphlet discussing the program consisting of parent-child interaction activities was developed for the use of parents in the "Workshop training" and "Written information groups." The program was entitled Parent-Child Interaction Exercises (PIE) (Appendix A). This program consisted of structured activities, with each activity being classified as either a game, reading or conversation activity.

Measurement

Measurement Procedure: Employing the research model of Fairweather (1967) the study's "Control," "Written Information" control and "Workshop Training" experimental groups were taken as three social subsystems:

Subsystem 1. Children living at home and attending day care program.

Subsystem 2. Children living at home and attending day care program, with parents receiving study material.

Subsystem 3. Children living at home and attending day care program, with parents receiving study material and parents training in how to use them.

In keeping with Fairweather's model, three attributes of these subsystems were considered (a) the participant characteristics (Table 2), (b) the social situation in which the subsystems operated (Table 3) and (c) the outcome criteria on which the subsystem is evaluated.

Participant characteristics having to do with demographic information was obtained from parent interview forms, which parents were asked to complete prior to the first week of the study (Appendix C). Personality participant characteristics of children were obtained by means of personality assessment, given prior to the first week of the study, during the study and following the 18th week of the study. The personality assessment of the children included the individual measurement of education achievement, and the daily observation of behavior in a social situation which afforded children the opportunity to interact and become involved on individual or group basis with activities and/or objects available in their particular classroom. For purposes of the study this situation was termed "free play." The social situation of the subsystem was obtained by means of the parent interview forms. After parents in the workshop experimental and information control conditions received the program's book they filled out and returned once every three weeks, a progress form consisting of information regarding their use of the book (Appendix D). Three weeks after parents in the workshop experimental and information

Table 2

Participant Variables

Demographic

Parents

- Age
- Sex
- Place of birth
- Place reared
- Racial/Ethnic background
- Marital status
- Work status
- Education
- Parental background
- Membership in organizations
- Activities outside the home

Family

- Source of income
- Income
- Number of children
- Age of children
- Sex of children
- Birthplace of children
- Rearing place of children
- Residence type
- Time at present residence
- Previous place of residence
- Number living at residence
- Activities

Child

- Age
- Sex
- Place of birth
- Place reared
- School attended
- Past school attendance

Personality Characteristics

Child

- Behavior description in school
- Behavior ratings in school

Intelligence

Child

- Test scores

control conditions received the program's book and following the 12th week after they received the book their children were interviewed to obtain information regarding their awareness of parental use of the program (Appendix E).

Table 3

Social Situation Variables

Internal Processes	External Processes
Family	Family
Size	Time of family in neighborhood
Composition	Geographical location of neighborhood

Instruments

The Pre-School Inventory Revised Edition 1970: The Caldwell Revised Inventory (1970) consists of 64 items designed to provide a measure of educational achievement and to demonstrate changes associated with educational intervention. Items are designed for the examination of the young child in the three-to-six year old age range.

The Original Pre-School Inventory consisted of 161 items thought to measure a child's development in the areas of (1) basic information and vocabulary, (2) number concepts and ordination, (3) concepts of size, shape, motion, and color (Concepts I), (4) concepts of time, object, class, and social functions (Concepts II), (5) visual-motor performance, (6) following instructions and (7) independence and self-help.

The initial standardization of the Original Pre-School Inventory was done on 389 children who participated in Head Start Programs during the summer of 1965. The inventory yielded a split-half reliability, corrected by the Spearman-Brown formula, of .97. The percentage of children passing each item in the Inventory was calculated for the following age groups--four, five, and six year olds and biserial correlations of each item with the total score were obtained.

Four factors emerged from a factor analysis and were labeled (1) Concept Activation-Numerical and Sensory, (2) Independent Action, (3) Personal-Social Responsiveness, and (4) Associated Vocabulary.

From items on the Original Inventory a shortened Standardization Edition was developed, consisting of 85 items. Based on data from the original standardization sample correlation between scores earned on the original version and the shortened version was .98 and the split half reliability corrected by the Spearman-Brown formula was .95. In the standardization sample two measures of the reliability of the Pre-School Inventory were computed for each age group: The Kuder-Richardson (20) coefficient and the split-half (odd-even) coefficient, corrected for length by means of the Spearman-Brown formula.

The Revised Edition resulted from dropping 21 items from the Standardized version. These were items that failed to discriminate at the different age levels and were found to be confusing to children of different geographic locations,

or presented serious problems of interpretations to evaluators of childrens' responses.

Childrens Interaction Profile (CIP): The Childrens Interaction Profile (CIP) (Appendix F) was designed specifically for the present study. It was designed to allow its users to quickly and easily gather information regarding participants interacting with persons and objects in "free play" settings as provided by those day care centers sponsoring the study. This information was gathered by observing participating children in the "free play" setting and recording behavioral information relevant and pertinent to that setting. Free play occurred in the participating childrens' regular classroom, during which participants could interact and make use of available play materials. These play materials consisted of day care center play items such as building blocks, dolls, miniature furniture and household items, adult clothes, books, crayons, drawing paper, trucks, cars, and various manipulative toys. Teachers were present during "free play" however their involvement was limited to situations such as fighting, injuries and misuse of play items. The information recorded with the CIP during observations was divided into seven scales: Location of the child in the play area at the start and finish of an observation. His/her Posture (lying, sitting, kneeling, standing). His/her Motions (no motions, motion in a non-upright position, walking, running). His/her Active Contact with Objects and/or Persons (no contact, contact with an

object, contact with a person, contact with an object and person). His/her Social Behavior (sleep, unoccupied, solitary play, onlooker behavior, parallel play, associative play, cooperative play). His/her Passive-Aggressive Behavior (passive, immobile not passive or aggressive, mobile not passive or aggressive, stereotyped aggressive, non-stereotyped aggressive). His/her Communication Behavior (not talking with others, talking with others). Each scale two through seven was assigned a number from low to high. During a ten second observation period a child was assigned a number related to each of the above scales. For purposes of scoring location the "free play" areas were divided into four parts with each part being assigned a number from one to four. Based on numbers given to categories within a scale each child was given a score in terms of the highest numbered behavior within each scale observed during an observation period. CIP was used by walking a pre-arranged route and observing children as their names appeared on a pre-arranged sequence. Observations were made on a daily basis during the study with the pre-arranged sequence of names being rotated for each daily observation. Observations were made at three sponsoring day care centers, with each center being randomly assigned to one of three time periods selected to make observations at a center.

The CIP was piloted for reliability. The piloting period covered approximately four weeks and involved the experimenter and a second observer independently rating

participants on a daily basis until an agreement level of 85-90% could be reached on three consecutive days of observation. This reliability test is summarized below in Table 4.

Parent Interview Forms: The Parent Interview Form consisted of a series of questions developed to obtain demographic information regarding participants (Appendix C).

Program Use Record: The Program Use Record consisted of a series of questions designed to assess parental use of the study's book and observations made by parents during their use of the book (Appendix D).

Program Awareness Record: The Program Awareness Record consisted of a scale of seven items designed to assess the participating children's awareness of the program and their parent's use of the program (Appendix E).

Table 4

Percentage of Agreement Between Raters CIP Scoring Categories

Free Play Period	Day Care Center	No. of Chdn. Observed	Initial Location	Final Location	Posture	Motion
1	public	26	100	100	88	96
	private I	13	100	100	100	100
	private II	14	100	100	86	79
		53				
Average % of Agreement			100	100	91.33	91.67
2	public	26	100	96	100	92
	private I	20	95	95	85	95
	private II	16	100	100	94	88
		62				
Average % of Agreement			98.33	97.00	93	91.67
3	public	25	96	96	96	100
	private I	16	100	100	94	88
	private II	13	100	100	92	100
		54				
Average % of Agreement			98.67	98.67	94	96
Total (3)		(169)				
Average % of Agreement			99	98.56	92.78	94.76

(cont'd.)

Table 4 (cont'd)

Free Play Period	Day Care Center	Physical Contact	Social Behavior	Passive Aggressive Behavior	Communication
1	public	92	92	88	96
	private I	100	92	92	77
	private II	86	86	79	86
Average % of Agreement		92.67	90.00	86.33	86.33
2	public	85	88	92	92
	private I	100	95	100	95
	private II	88	88	100	100
Average % of Agreement		91.00	90.33	97.33	97.33
3	public	96	84	92	96
	private I	88	88	88	88
	private II	100	100	92	92
Average % of Agreement		94.67	90.67	88.33	92
Total (3) Average % of Agreement		92.78	90.33	90.66	91.89

CHAPTER III

RESULTS

Attrition

During the course of the study 14 of the study's 72 participants were withdrawn from their respective day care centers. Although behavioral observation could not be continued at the time of withdrawal all participants remained in the study for purposes of post-testing, receiving reports from parents on use of the study's written program and doing a follow-up interview with participants with regard to their awareness of the program. For participants that were withdrawn, post-testing and interviews were carried out at the participants home. Withdrawal of participants occurred primarily at two stages; 1) following Thanksgiving vacation, and (2) following Christmas/New Year break. Of those reasons given for withdrawal most seemed related to participants moving, need for services terminated, and dissatisfaction with services. Table 5 displays the chi square test for attrition. It shows a chi square of 1.97 which with four degrees of freedom does not reach the .05 level of significance.

Comparative Results

Participants were compared on 1) demographic data, 2) educational achievement as measured by pre- and post-test

scores achieved on the Caldwell Pre-School Inventory, 3) participant behavior observed and rated during daily "free play" periods arranged to take place during the study's 18 week period, 4) parent use of the study's written program of parent-child interaction activities, which was distributed to parents assigned to the "Workshop" and "Written Information" experimental conditions, and 5) participant awareness of the use of the study's written program by parents.

Comparisons were made on educational achievement and behavior to test the study's hypothesis.

The effectiveness of the three conditions from workshop to information control to total control is tested in the following sections by computing significance of the difference between treatment conditions. Differences between day care centers will also be tested, and when appropriate, time differences will be compared. In addition interaction effects will be explored.

Table 5

Attrition of Subjects

Participant Continuance	Experimental Condition		
	Workshop Training	Written Information	Control
Attrition	5	3	6
Non-Attrition	19	23	16

Note. $X^2 = 1.97$, 4 df

Demographic Data

Participants attending each of the sponsoring day care centers were matched on mother's age and marital status and randomly assigned to the three experimental conditions; 1) Workshop training in the use of information materials, 2) Written information, and 3) Control. Although participants were randomly assigned, treatment groups and day care centers were examined for possible differences on relevant demographic variables. For purposes of investigating differences between treatment groups and centers on demographic variables, all participants were scored on each related variable and an analysis of variance was used to test for significant differences between treatment groups and centers. The results are displayed on Tables 6 and 7.

The comparisons between conditions as presented in Table 6, indicates that there were five significant differences between treatments. Differences were found on: 1) the age of the fathers, 2) percent of fathers working full time, 3) the number of siblings the father had, 4) percent of fathers reared by both parents to age 18, and 5) the number of group affiliations of the mother. All but one of the above differences pertain to the background of the participant's fathers. Sakoda, Cohen, and Beal (1954, p. 173) present a method of determining the number of significant differences expected when a series of N significance tests were computed. Their table indicates that five significant differences at the .05

Table 6

Comparison of Treatment Groups on Demographic Characteristics

Variable	Workshop Training	Written Info.	Control	F
	Mean or Percentage	Mean or Percentage	Mean or Percentage	
Sex %				.39
Male	42	54	55	
Female	58	46	45	
Race %				.56
White	66	75	55	
Other	34	25	45	
Primary Parents %				.27
Both	29	25	29	
Age in Months	46.67	47.50	46.95	.09
Father %				.69
Natural	96	96	100	
Father's Race %				1.69
White	66	75	55	
Other	34	25	45	
Father's Age, Years	27.04	28.46	30.86	4.00*
Father's Occupation Score[a]	19.25	18.85	16.23	.24
Father Works %				
Full Time	66	96	91	3.64*
Father's Income[b]	3.12	4.51	3.06	.72
Father Education, yrs.	13.00	13.19	12.55	.20
Father Education, Score[a]	18.33	17.85	16.91	.32
Father Siblings	3.08	2.61	4.86	6.12*

Table 6 (cont'd.)

Variable	Workshop Training	Written Info.	Control	F
	Mean or Percentage	Mean or Percentage	Mean or Percentage	
Father Hobbies	1.16	1.19	1.18	.03
Father Groups	.37	.53	.90	1.39
Father Reared % by Parents to 18	66	96	82	4.00*
Mother's Race %				.25
White	66	75	55	
Other	34	25	45	
Mother-Natural %	100	100	100	.00
Mother's Age, yrs.	26.33	25.81	27.00	.71
Mother's Occupation Score[a]	17.79	15.08	15.27	.24
Mother's Work % Full Time	50	38	45	.91
Mother Income[b]	5.73	5.04	5.00	.28
Mother Education, yrs.	13.04	12.08	12.41	1.26
Mother Education Score[a]	18.17	16.31	16.73	1.09
Mother Siblings	4.16	3.34	4.09	1.03
Mother Hobbies	2.29	2.23	1.86	.31
Mother's Groups	.95	.30	.31	4.78*
Mother Reared % by Parents to 18	63	69	55	.50
Social Position Score[a]	39.75	34.42	33.55	.76

Table 6 (cont'd.)

Variable	Workshop Training	Written Info.	Control	F
	Mean or Percentage	Mean or Percentage	Mean or Percentage	
Marital Status % Married	29	23	32	1.28
Child's Siblings	1.08	1.03	1.18	.07
Residence % House	33	30	59	2.12
Months at Residence	16.04	16.38	25.95	2.30

Note. df is the same for all variables (2,63)

[a] Based on Hollingshead rating - inversed for purpose of study

[b] Income given in $1,000/year

* $p < .05$

Table 7

Comparison of Day Care Centers on Demographic Characteristics

Variable	Public	Private I	Private II	F
	Mean or Percentage	Mean or Percentage	Mean or Percentage	
Sex %				.46
Male	56	47	42	
Female	44	53	58	
Race %				3.67*
White	46	76	76	
Other	54	24	24	
Primary Parents %				
Both	10	33	47	4.77*
Age in Months	46.97	46.86	47.38	.03
Father %				
Natural	93	100	90	.18
Father's Race %				4.07*
White	43	76	71	
Other	57	24	29	
Father's Age, yrs.	28.20	30.19	28.00	1.47
Father's Occupation Score[a]	10.73	23.67	23.33	10.29*
Father Works %				
Full Time	90	90	66	3.36*
Father Income[b]	.85	3.71	7.44	8.97*
Father Education, yrs.	11.27	14.57	13.67	8.86*
Father Education, Score[a]	15.20	20.95	18.10	8.64*
Father Siblings	4.10	2.71	3.28	2.42
Father Hobbies	.60	1.42	1.76	4.21*
Father Groups	.33	.61	.52	3.28*

Table 7 (cont'd.)

Variable	Public	Private I	Private II	F
	Mean or Percentage	Mean or Percentage	Mean or Percentage	
Father Reared % by Parents to 18	80	80	85	.15
Mother's Race %				4.51*
White	46	76	76	
Other	54	24	24	
Mother-Natural %	100	100	100	.00
Mother's Age, yrs.	25.81	27.00	26.38	.62
Mother Occupation Score[a]	8.63	22.33	20.33	11.38*
Mother Works % Full Time	20	61	57	8.80*
Mother Income[b]	4.29	5.83	6.06	2.39
Mother Education, yrs.	11.53	13.05	13.33	6.59*
Mother Education Score[a]	14.93	18.29	18.86	7.18*
Mother Siblings	4.37	3.61	2.81	4.13*
Mother Hobbies	1.86	2.09	2.57	.93
Mother Groups	.23	.52	.95	5.26*
Mother Reared % by Parents to 18	46	71	76	2.81
Social Position Score[a]	24.33	44.81	43.62	16.12*
Marital Status % Married	10	33	47	2.80

Table 7 (cont'd.)

Variable	Public	Private I	Private II	F
	Mean or Percentage	Mean or Percentage	Mean or Percentage	
Child's Siblings	1.63	.66	.76	6.84*
Residence % House	53	33	33	1.55
Months at Residence	18.57	22.10	17.19	.42

Note. df is the same for all variables (2,63)

a Based on Hollingshead rating - inversed for purpose of study

b Income given in $1,000's/yr.

* $p < .05$

level in a series of thirty-three significant tests would occur only five times in one hundred by chance ($p < .05$). This suggests that the treatments differ significantly on background information.

The comparisons between centers, as presented in Table 7 indicates that there were many significant differences at the .05 level--19 of 33 listed demographic variables. Table 7 shows that significant differences between centers were obtained on 1) percent of white participants and parents, 2) percent of parents married, 3) father's and mother's occupation status, 4) percent of mothers and fathers working full time, 5) father's income, 6) father's and mother's education, 7) the number of hobbies of the father, 8) the number of group affiliations of the father and mother, 9) social position of the family, and 10) the number of participant siblings.

Sakoda et al. again indicate that 19 significant differences in a series of 33 significance tests could be expected to occur with a probability of less than once in a thousand times by chance ($p < .001$). Thus day care centers also differ significantly on the samples background.

The above results indicate that the study's process of randomization was not successful in equating workshop training, written information and control groups on the demographic variables. Thus significant differences found later between the above experimental conditions may be due to demographic differences. Differences were also found between day care

centers on significant demographic variables. Therefore any significant differences found later between day care centers might also be due to demographic differences of participants attending these centers.

Outcome Comparisons

Educational Achievement

The hypothesis states that the workshop condition will result in better cognitive skill development of children as contrasted with the written information and total control conditions. To test the above hypothesis participants were given pre- and post-tests using the Caldwell Pre-School Inventory. An analysis of variance was employed to test for differences between treatment groups and centers on pre-test scores made on the Caldwell Pre-School Inventory and its four subtests (Table 8). An analysis of covariance using pre-test scores as covariates was employed to test for differences between treatment groups and centers on post-test scores made on the Caldwell Pre-School Inventory and its four subtests (Table 9): (1) Personal-Social Responsiveness: Knowledge about the child's own personal world and his ability to get along with and respond to communications of another person. (2) Associative-Vocabulary: Ability to demonstrate awareness of the connotation of a word by carrying out some action or by associating to certain intrinsic qualities of the underlying verbal concept. (3) Concept-Activation-Numerical: Ability to label quantities, to make judgements

of more or less, to recognize seriated positions. (4) Concept Activation-Sensory: To be aware of certain sensory attributes (shape, size, motion, color) and to be able to execute certain visual-motor configurations.

Table 8 indicates that there were no significant differences between treatment groups on pre-test scores achieved on the Caldwell subtests or the total test.

Table 8

F-Ratios Comparing Treatments and Centers on Caldwell Pre-Test Scores

Subtests/Total	Treatment df (2,62)	Centers df (2,62)	Treatment X Centers df (4,62)
1. Personal-Social Responsiveness	.06	3.44*	.57
2. Associated Vocabulary	.40	2.24	.42
3. Concept Activation-Numerical	.21	4.92*	.11
4. Concept Activation-Sensory	.49	5.02*	.23
5. Total	.25	4.46*	.96

* $p < .05$

The above results indicate that the study's process of randomization was successful in equating workshop training, written information, and control groups on education achievement variables. Since treatment groups were shown to have

demographic differences, the above results further suggest that these differences did not influence performance on the Caldwell. Table 8 also indicates four significant differences between day care centers. These significant differences were on the 1) Personal-Social Responsiveness subtest (F = 3.44), 2) Concept-Numerical subtest (F = 4.92), 3) Concept-Sensory subtest (F = 5.02), and 4) Total Test (F = 4.46). Table 8 shows no significant interactions between treatment and day care centers. Sakoda et al. (1954) indicates that four significant differences in a series of 15 significance tests could be expected to occur with a probability of approximately .01 at the .05 level of significance, thus it is likely the above significant differences did not occur by chance.

Table 9 shows that there were no significant differences between treatment groups on post-test scores achieved on the above Caldwell subtests or the total test. Table 9 also indicates that the only significant difference between day care centers on post-test scores was on the personal-social responsiveness subtest (F = 3.42). Table 9 shows no significant interaction effects between treatment and day care centers. Sakoda et al. indicate that one significant difference at the .05 level of significance in a series of 15 significance tests could be expected to occur with a probability of approximately .50 thus it is likely that the above significant difference is a chance difference. A table of Mean Squares to supplement Table 9 can be found in Appendix

H as well as a table of mean scores achieved on pre- and post-tests by treatment groups and centers.

Table 9

F-Ratios Comparing Treatments and Centers on Caldwell Post-Test Scores

Subtests/Total	Treatment df (2,62)	Centers df (2,62)	Treatment X Centers df (4,62)
1. Personal-Social Responsiveness	2.59	3.42*	1.17
2. Associative Vocabulary	.26	.87	.59
3. Concept Activation-Numerical	.43	2.09	.20
4. Concept Activation-Sensory	2.15	.07	1.94
5. Total	1.87	1.24	1.20

* $p < .05$

Behavior Rating

The hypothesis states that the workshop condition will result in better interpersonal skill development of parents' children as contrasted with the written material control and total control condition. To test the above hypothesis participants were observed for ten seconds daily over an 18 week period and given a rating for each category on the Child Interaction Profile. Each participant was given 18 weekly averages for each category on the Child Interaction Profile. In cases where a participant was absent for a week the

averages given the weeks prior and following the absence were averaged, with these averages being given for the week of absence. In those cases where a participant was withdrawn from a center those averages given the week prior to withdrawal were given for the following weeks of the study. A trend analysis, using a repeated measures analysis of variance design was employed to test for differences over time between treatment groups, and day care centers on ratings made on the Child Interaction Profile's seven categories. Table 10 presents a summary of F-ratios for the seven observation categories. A table of Mean Squares to supplement Table 10 can be found in Appendix I. Below is a description of the seven observation categories completed during each observation.

1) Number of Room Areas Visited: Ratings were given for the number of room areas visited by a participant. Room areas were determined by dividing the room into quarters.

2) Posture: Posture ratings were given as follows: 1 (lying), 2 (sitting), 3 (not lying, sitting, or standing), and 4 (standing).

3) Motion: Motion ratings were given as follows: 1 (not moving), 2 (moving but not standing), 3 (walking), and 4 (running).

4) Contact: Contact ratings were given as follows: 1 (not actively in contact with another person, or object), 2 (actively holding or touching an object), 3 (actively holding or touching a person), 4 (actively holding or touching an object and a person).

5) Social Behavior: Social behavior ratings were given as follows: 1 (sleeping), 2 (unoccupied), 3 (solitary play), 4 (onlooking), 5 (parallel play--playing along-side but not with others), 6 (associative play--playing with others), and 7 (cooperative play--playing goal oriented games).

6) Aggressive Behavior: Passive/aggressive ratings were given as follows: 1 (passive behavior), 2 (immobile not passive or aggressive), 3 (mobile not passive or aggressive), 4 (stereotyped aggressive--hitting, threatening, etc.), and 5 (non-stereotyped aggressive--intense fighting, breaking, etc.).

7) Communication: Communication ratings were given as follows: 1 (not talking with others), and 2 (talking with others).

Table 10 shows there were no significant differences between treatment groups on weekly averages achieved on the above observation categories. Table 10 also shows that there was only one significant difference between day care centers--a significant difference exists between day care centers with regard to number of room areas visited by participants at each center ($F = 3.68$). Figure 1 demonstrates that over the 18 week observation period participants attending the public center consistently visited more room areas during the times they were observed, than participants of the other two centers. Figure 1 also demonstrates that over the 18 week observation period participants attending private center 2 tended to visit more room areas than participants attending private center 1.

Table 10

F-Ratios Comparing Treatments and Centers on Behavioral Observations

Item	Treatment df (2,63)	Center (2,63)	Time (17,1071	Treatment X Center (4,63)	Time X Center (34,1071)	Time X Treatment (34,1071)	Time X Center X Treatment (68,1071)
1. Area Visited	1.03	3.68*	1.22	.85	1.20	.70	1.17
2. Posture	.60	.56	1.19	.96	1.62*	.91	1.35*
3. Motion	.11	2.79	2.04**	.41	1.25	1.57*	1.18
4. Contact	.77	1.59	1.71*	.32	1.07	.89	1.73**
5. Social Behavior	2.51	1.49	1.18	1.15	.94	1.18	1.38*
6. Passive/Aggressive Behavior	.33	.84	2.05**	.43	1.34	1.32	1.30
7. Talk	.32	.19	3.29**	.41	.97	1.29	1.18

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

Table 10 shows that a significant difference exists between time of observation on motion ($F = 2.04$), contact ($F = 1.71$), passive/aggressive behavior ($F = 2.05$) and communication ($F = 3.29$). Figure 2 shows that the average motion scores given participants appears to increase over the 18 weeks of observation. It can be noted in Figure 2 that during the last nine weeks of observation participants averaged motion scores at/or above 1.76 for seven weeks. However during the first nine weeks scores above 1.76 were recorded for only two weeks. Figure 2 also shows the average motion score given for the last week of observation is noticeably more than during the first week of observation. The above results indicate that over time participants progressed in terms of the motion scale used in the study. Figure 3 shows that the average amount of contact that participants had with objects and/or persons during an observation period decreased over the 18 weeks of observation. Figure 3 shows that during the first nine weeks of observations all average contact scores were near or above 1.90 whereas during the last nine weeks averages at or above 1.90 were reported only twice. Figure 3 also shows that the contact during the last week of observation was noticeably less than during the first week of observation. Figure 4 shows that average score given participants for passive/aggressive behavior appears to increase over the 18 weeks of observation. It can be noted in Figure 4 that during the last nine weeks of observation participants

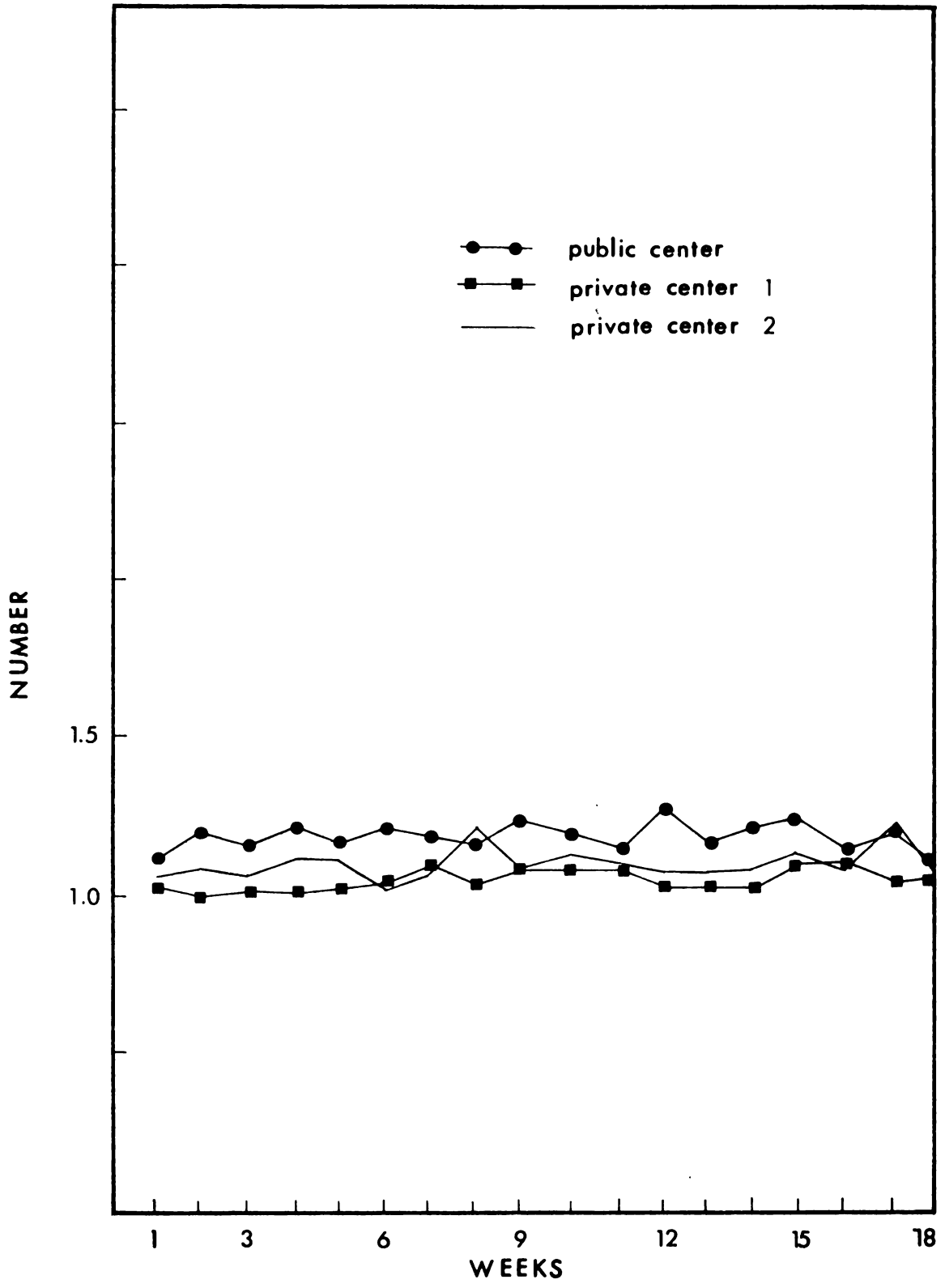

Figure 1. Average number of room areas visited during an observation.

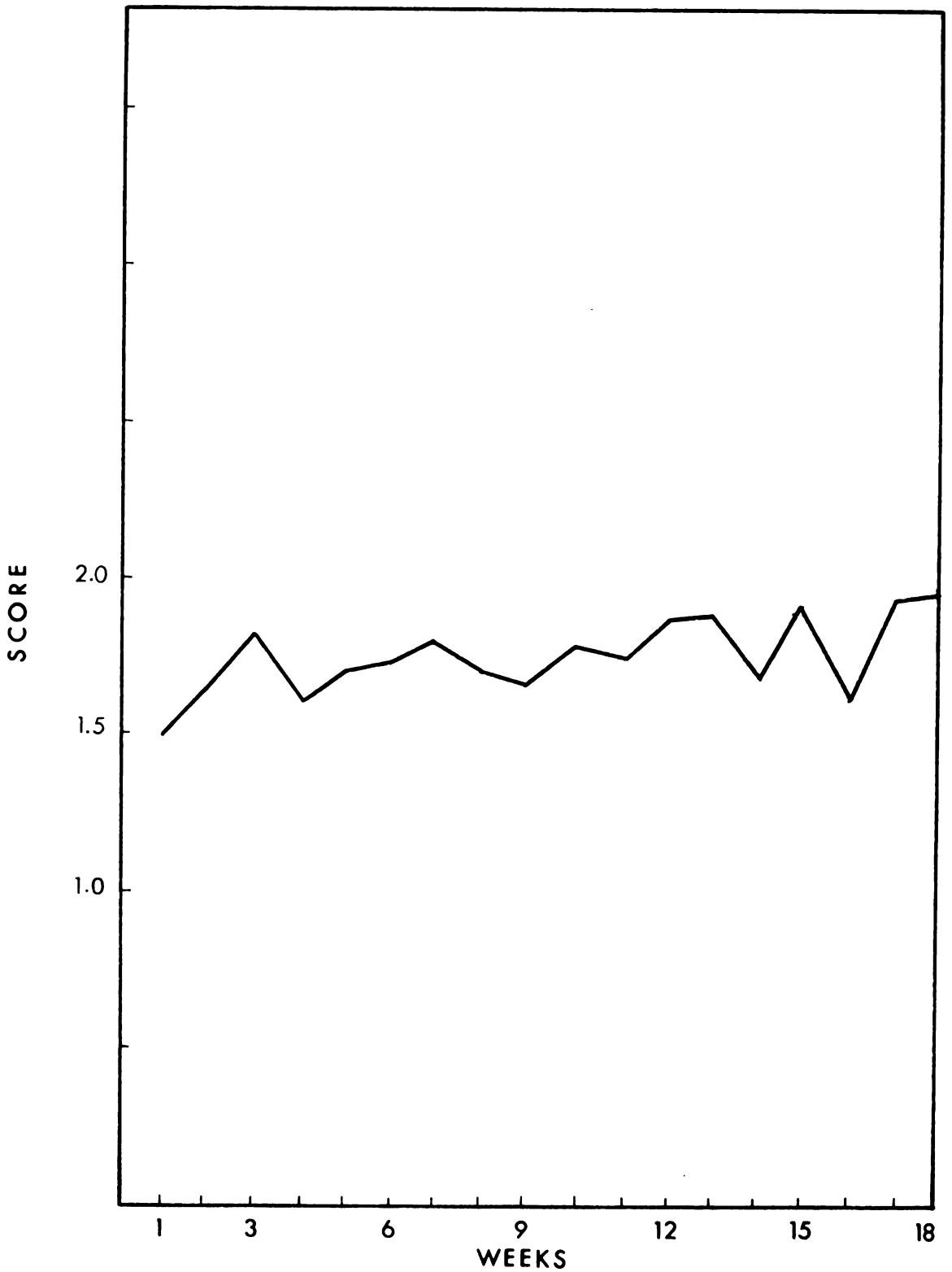

Figure 2. Average motion score given during an observation.

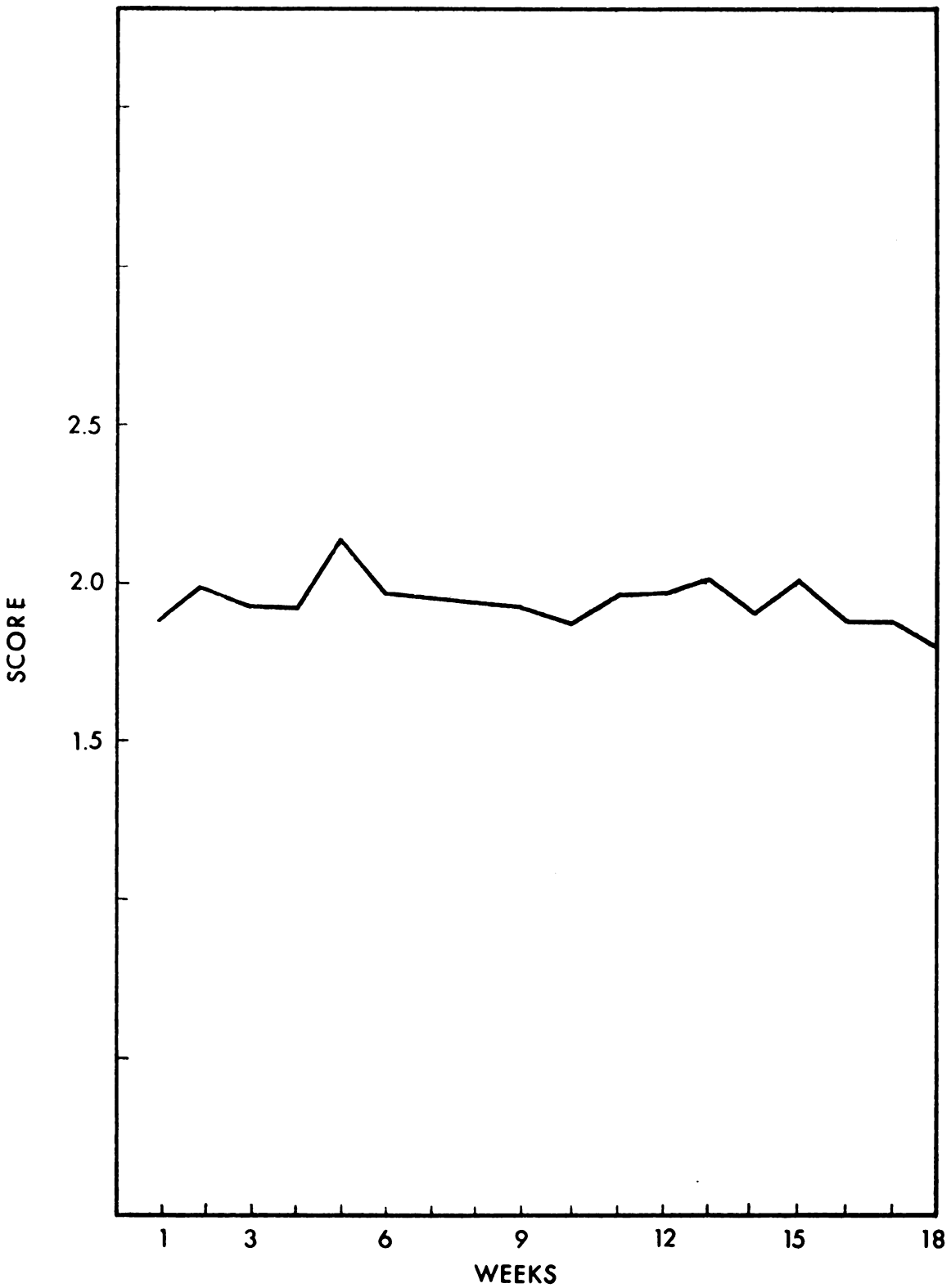

Figure 3. Average contact score given during an observation.

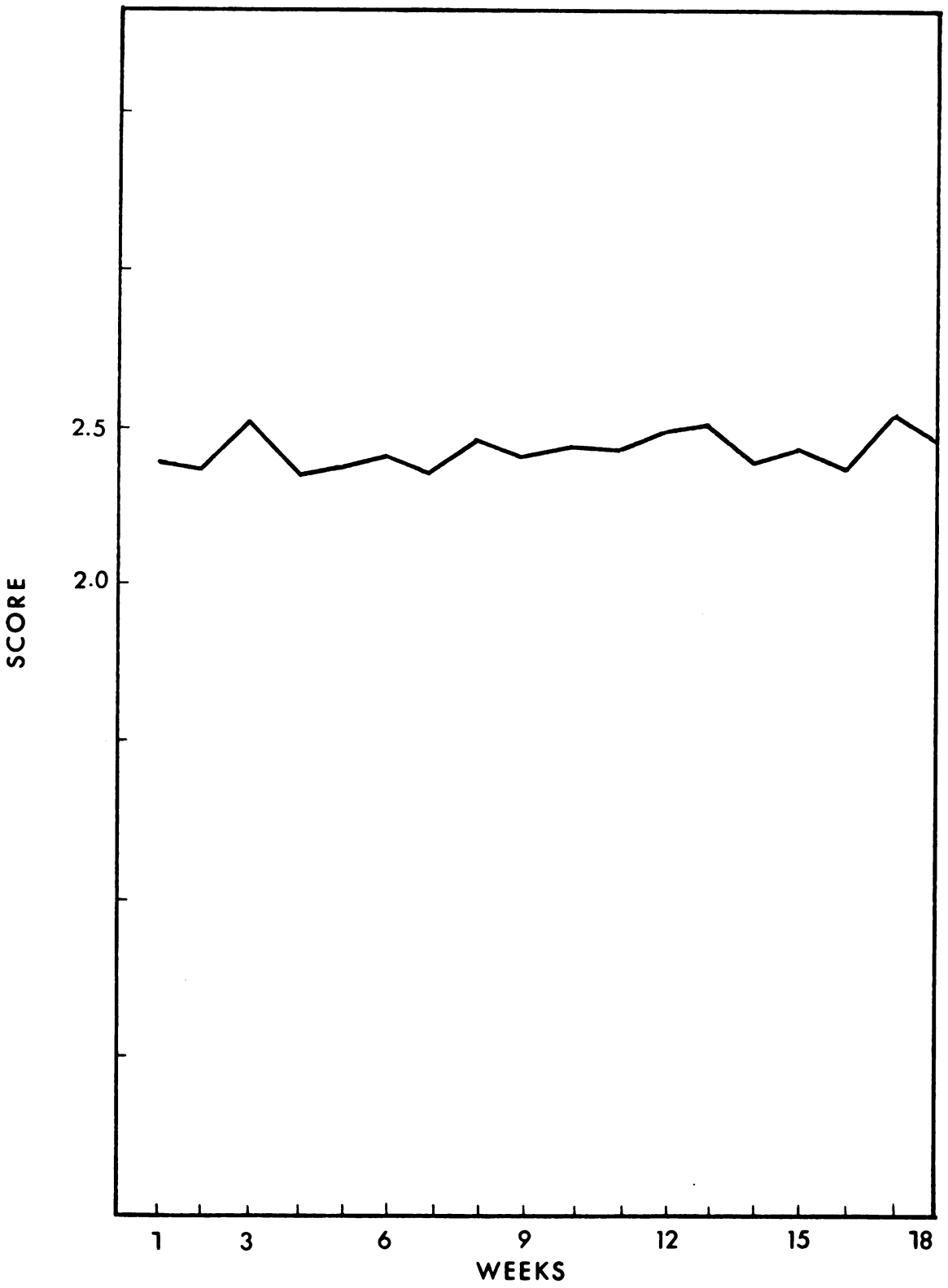

Figure 4. Average passive/aggressive score given during an observation.

averaged passive/aggressive scores at or above 2.40 for seven weeks. However during the first nine weeks scores above 2.40 were recorded for only four weeks. Figure 4 also shows the average passive/aggressive score given for the last week to be noticeably more than during the first week of observation. The above results indicate that over time, participants became more aggressive in their behavior. Figure 5 shows that the average amount of conversation that participants had with others during an observation period increased over the 18 week observation period. Figure 5 shows that during the last nine weeks of observation all average communication scores were above 1.30 with scores below 1.30 being recorded three times during the first nine weeks. Figure 5 also shows communication during the last week of observation to be noticeably greater than during the first week of observation.

Table 10 also indicates that the posture of participants observed during free play was influenced by a significant interaction between day care centers and time ($F = 1.62$). Figure 6 shows that while there was a consistent difference in observed posture of participants at each center, this difference varied significantly over the 18 week observation period. Figure 6 shows that for nine of the 18 observation weeks participants at the public center averaged the highest posture ratings while for eight of the eighteen weeks participants at private center 2 averaged the highest posture ratings. Figure 6 also shows that most of those weeks where participants at the public center received the highest ratings were

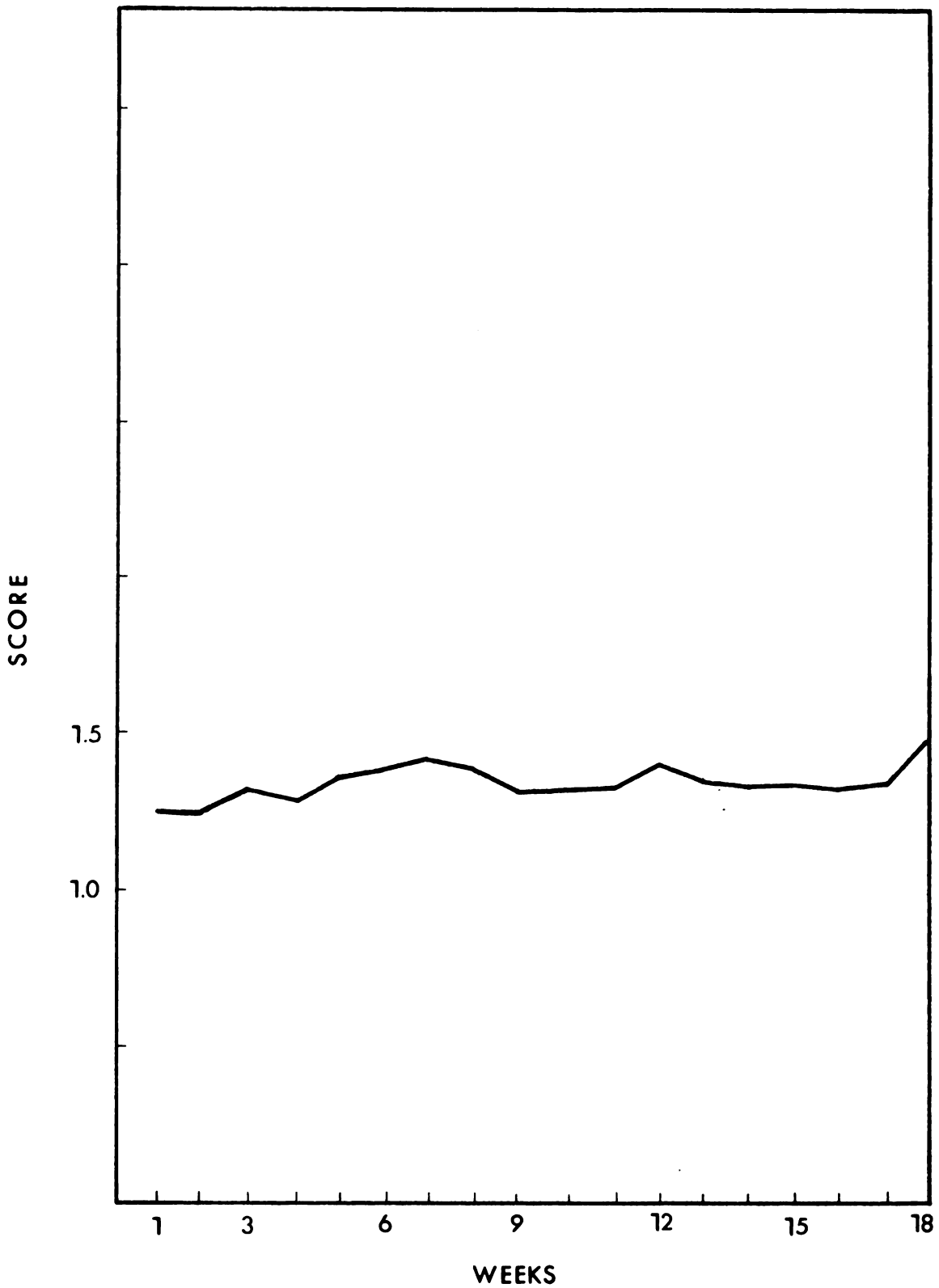

Figure 5. Average communication score given during an observation.

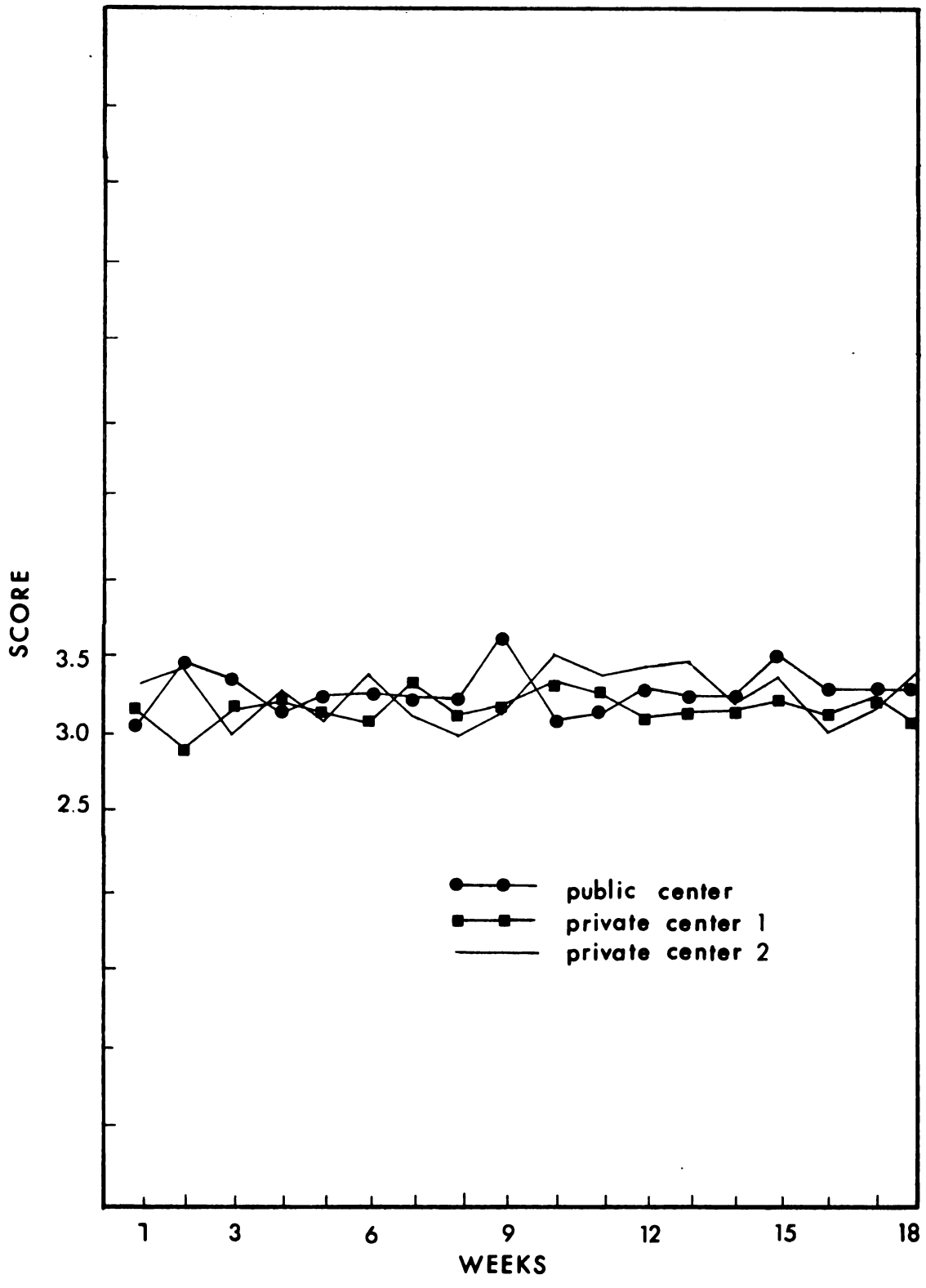

Figure 6. Average posture score given during an observation.

during the first half of the 18 week observation period, with the opposite being the case for participants at private center 2.

Table 10 points out that the movement of participants observed during free play was influenced by a significant interaction between treatment and time (F = 1.57). Figure 7 shows that while there was a consistent difference in observed motion in each treatment group, this difference varied over the 18 week observation period. Figure 7 shows that for seven of the 18 observation weeks participants in the workshop group averaged the highest motion ratings, while participants in the written information and control groups averaged the highest motion ratings for four and six weeks respectively. Figure 7 also shows that all of the weeks where participants in the written information group received the highest ratings were during the first half of the 18 week observation period, with participants in the Workshop and Control groups receiving most of theirs during the last half of the observation period.

Table 10 indicates that the time by center by treatment interaction had a significant influence on posture (F = 1.35) contact (F = 1.73) and social behavior (F = 1.38). This finding is quite difficult to interpret but suggests that when all three major variables interact a significant effect results.

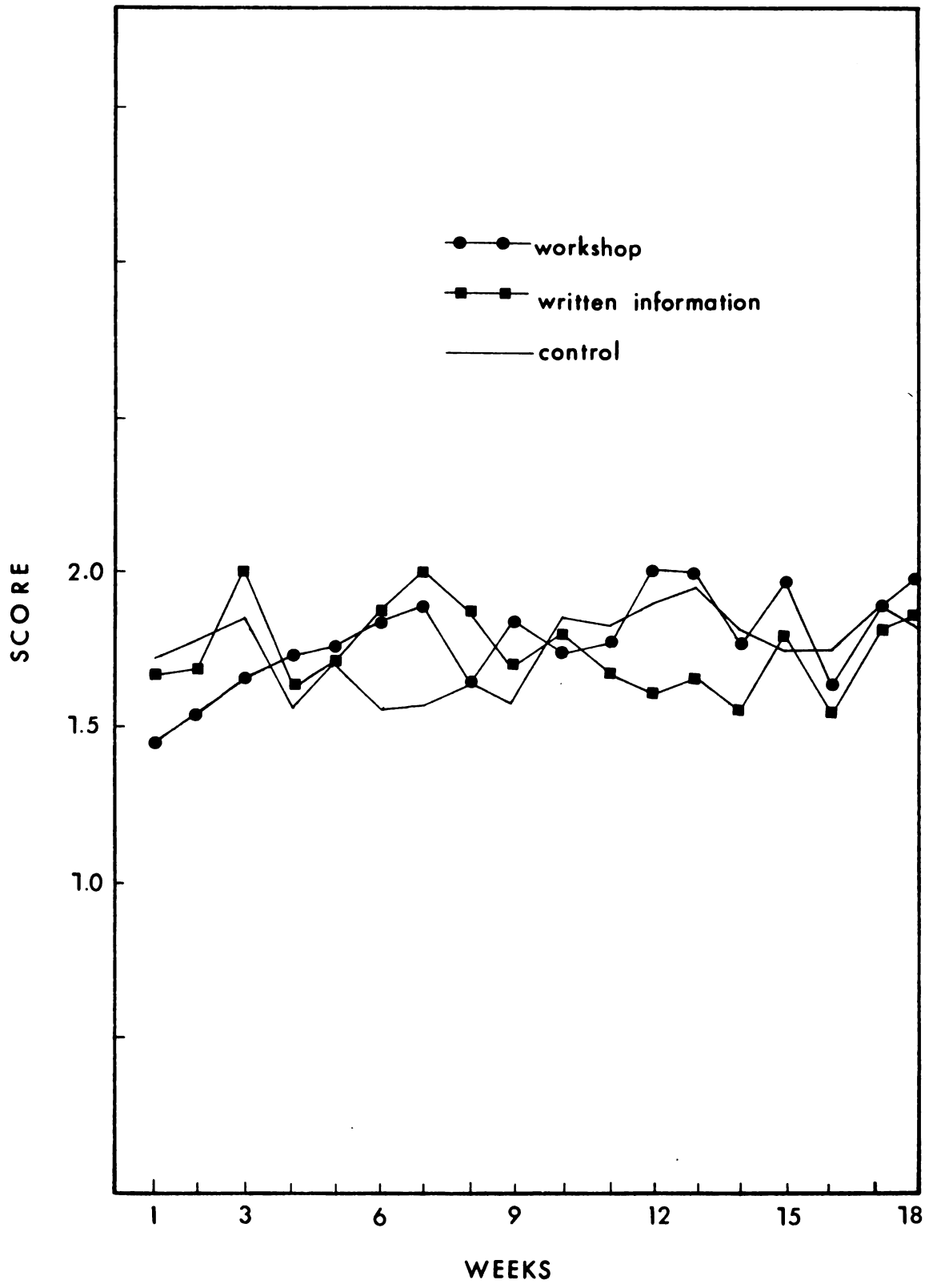

Figure 7. Average motion score given treatment groups during an observation.

Sakoda et al. indicates that 10 significant differences at the .05 level of significance in a series of 49 significance tests is likely to occur with a probability of approximately $p < .001$, thus it is likely that the above significant differences are not chance occurrences.

Findings based on behavioral observations indicate that the study's workshop, written information, and control conditions did not differ in their effect on participant behavior. Day care centers were found to differ only in terms of movement of participants about play areas. The results from the present experiment indicate that time has a more dominant main effect on behavior than treatment effects or day care centers and that time is a factor in those interaction effects found to be significant.

Evaluation of Program Use

Parent Use of Written Information Program

Following the study's six week period of parent-training workshops parents of participants in both the "Workshop" and "Written Information" treatment groups received the study's written program. Once having received the study's written program of parent-child interaction activities, parents in the "Workshop" and "Written Information" treatment groups reported once every three weeks on their use of the written program. These reports were made over a 12 week period and consisted of answering those items on the Program Use Record.

A trend analysis, using a repeated measures analysis of variance design was employed to test for differences over time between the above treatment groups, and day care centers on responses to Program Use Record. Table 11 presents a summary of F-ratios for comparing treatment groups, and centers on responses given to items on the Program Use Record. A table of those Mean squares can be found in Appendix J. Below are the items on the Parent Use Record:

1. Number of get-togethers using program activities
2. Number of program activities played
3. Number of program activities repeated
4. Weekly get-togethers held on same day
5. Weekly get-togethers held at the same time
6. Length of get-togethers
7. Child enjoyed get-togethers
8. Child's attitude has changed
9. Parent attitude has changed
10. Number of participants in get-togethers
11. Number of positive comments made about the study's written activity program.

Table 11 shows that there were significant differences between treatment groups on child enjoyment of get-togethers ($F = 4.75$), change in child's attitude about doing things with parents ($F = 6.95$), and change in parents' attitude about doing things with their child ($F = 5.07$). Figure 8 shows that Workshop parents consistently made more reports that their child enjoyed their get-togethers. Figure 8 also shows that reports of child enjoyment seems to decrease for both treatment groups during the last two report periods. Figure 9 shows that Workshop parents consistently made more reports that their child's attitude had changed, with regard to doing things with them. Figure 10 shows that Workshop

Table 11

F-Ratios Comparing Treatments and Centers on Program Use

Item	Treatment df (1,44)	Center (2,44)	Time (3,132)	Treatment X Center (2,44)	Time X Center (6,132)	Time X Treatment (3,132)	Time X Center X Treatment (6,132)
1. Get-togethers	.16	.77	1.72	2.47	1.23	.52	.23
2. Games Played	.40	.99	.94	2.31	1.09	2.26	1.02
3. Games Repeated	.43	.99	1.56	1.31	2.05	3.23*	1.35
4. Games Played Same Day	.00	.86	1.65	2.33	2.11	.71	2.77
5. Games Played Same Time	1.09	.05	1.28	2.98	1.07	.03	1.02
6. Game Length	.08	2.06	2.37	4.67*	1.33	.50	1.57
7. Child Enjoyment	4.75*	.08	1.59	2.87	1.55	2.17	1.75
8. Child Attitude Change	6.95*	1.47	1.07	3.22*	2.04	2.60	1.46
9. Parent Attitude Change	5.07*	.01	1.54	2.64	2.17*	1.01	1.98
10. Number Playing	1.43	1.06	.91	3.28*	2.01	2.28	1.00
11. Positive Comments	1.16	.12	3.80*	7.00*	2.13	7.18*	1.85

* $p < .05$

parents consistently averaged higher scores of attitude change than Written Information parents. Table 11 also shows no significant differences between day care centers on any of those variables used to measure use of the program. Table 11 does show a significant time effect with regard to the number of positive comments made by parents about the program (F = 3.80), but not on any of the other parent use variables. Figure 11 shows that parents made fewer positive comments over time.

Table 11 shows the treatment by center interaction as having a significant effect with regard to the time parents spend engaging in a program activity (F = 4.62), change in child's attitude about doing things with parents (F = 3.22), the number of persons engaging in program activities (F = 3.28), and number of positive comments made about the program (F = 7.00). Table 12 shows that for each report period workshop parents at the two private centers reported having spent more time engaging in program activities than Written Information parents. Table 12 also shows that Written Information parents at the public center on the average spent more time engaging in program activities. Table 13 shows that Workshop parents at private center 1 consistently reported child attitude change while Written Information parents consistently reported no change in child attitude. Table 13 also shows that Workshop parents at the public center and private center 2 did not report

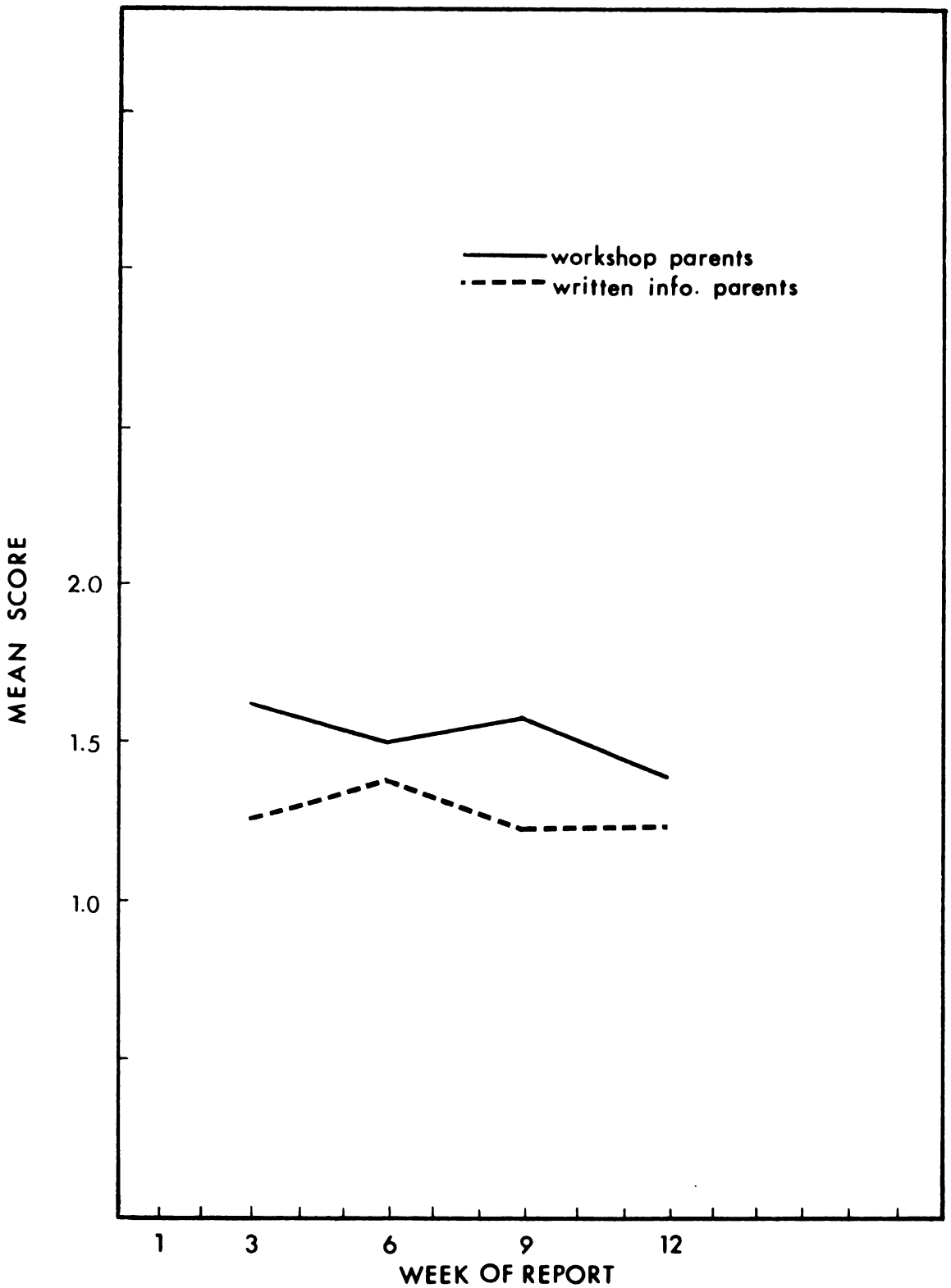

Figure 8. Parent reports on their childs enjoyment of activities following receipt of the study's activity program.

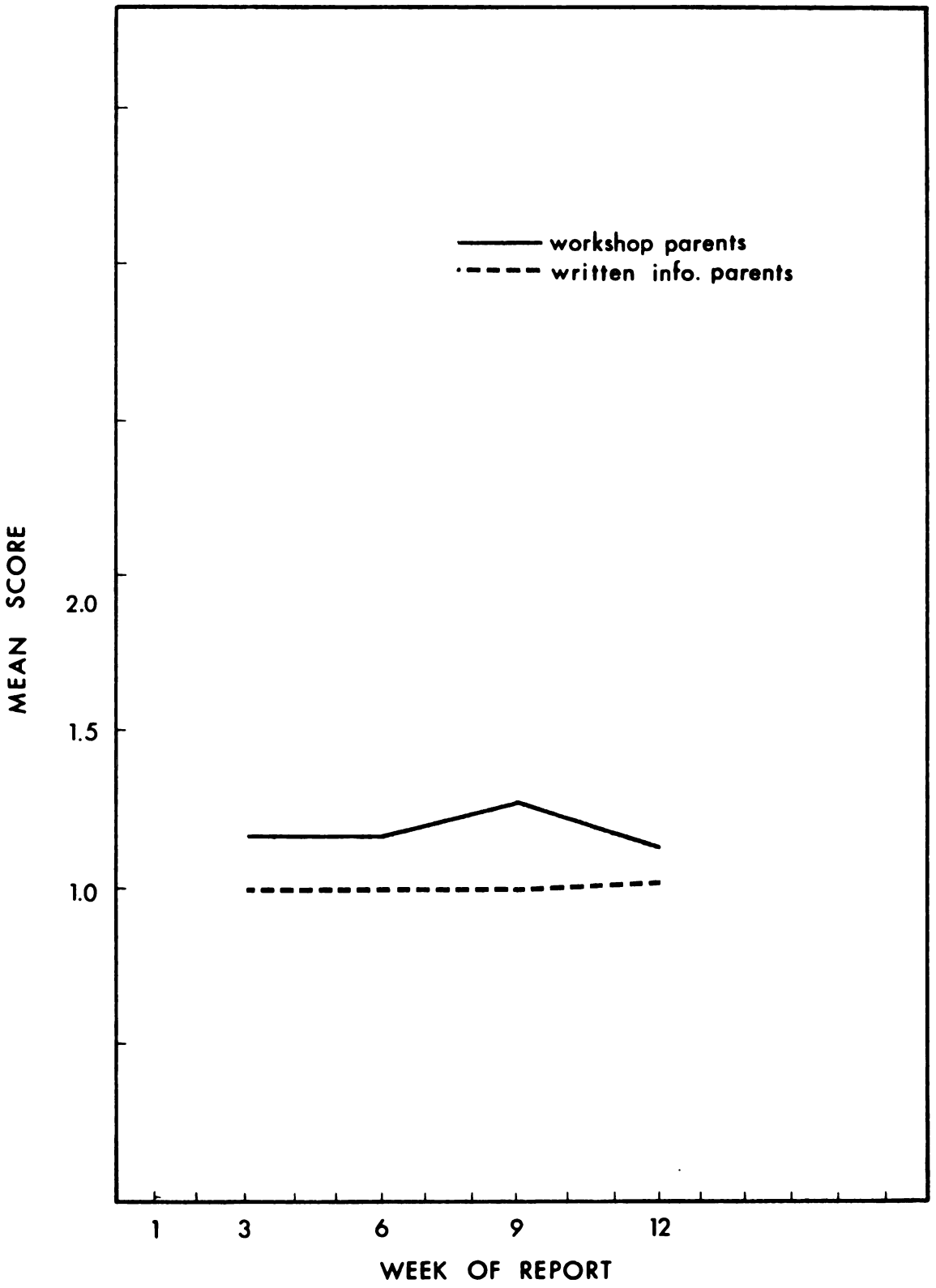

Figure 9. Parent reports on their childs change in attitude following receipt of the study's activity program.

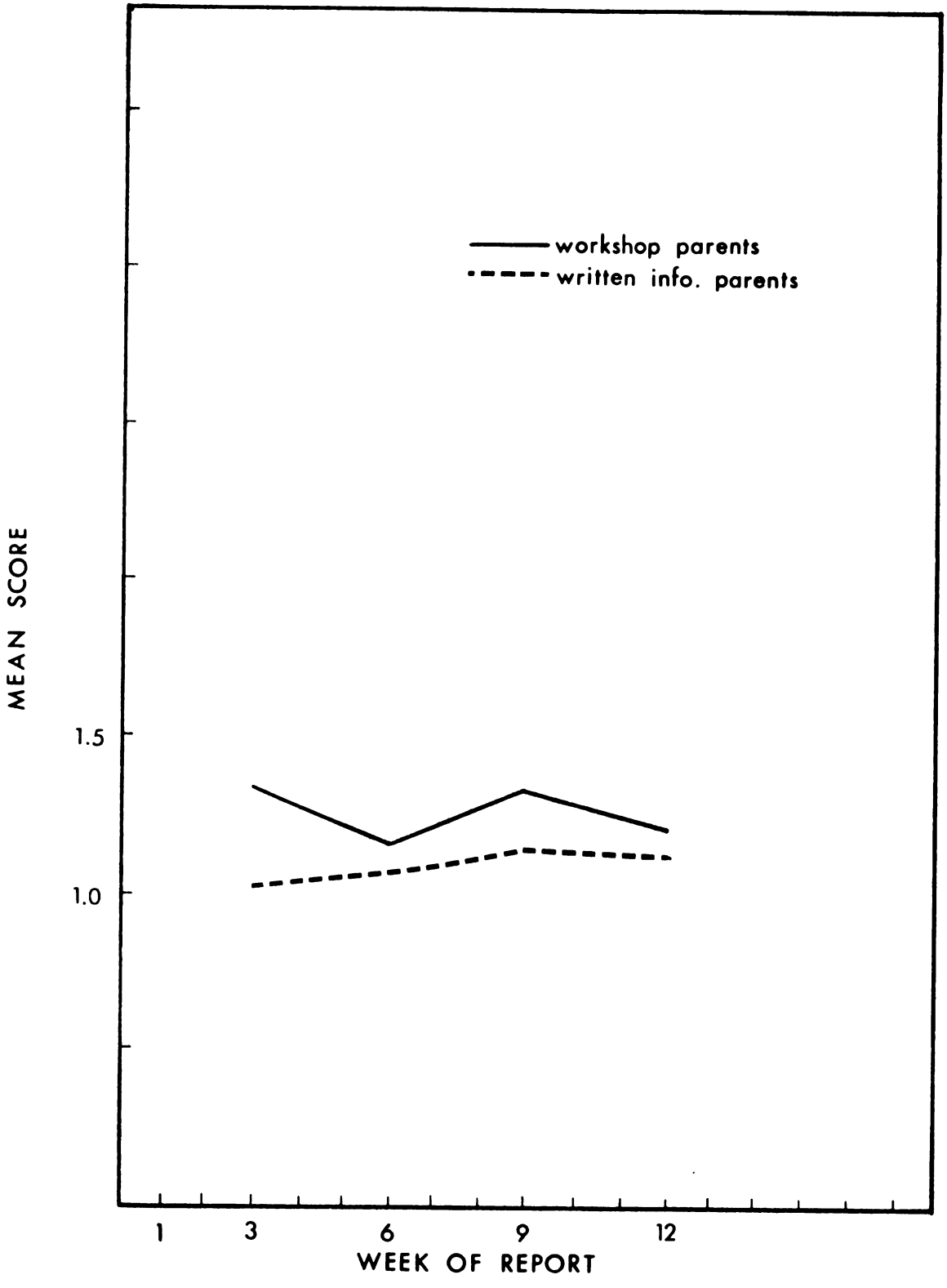

Figure 10. Parent reports on their change in attitude following the receipt of the study's activity program.

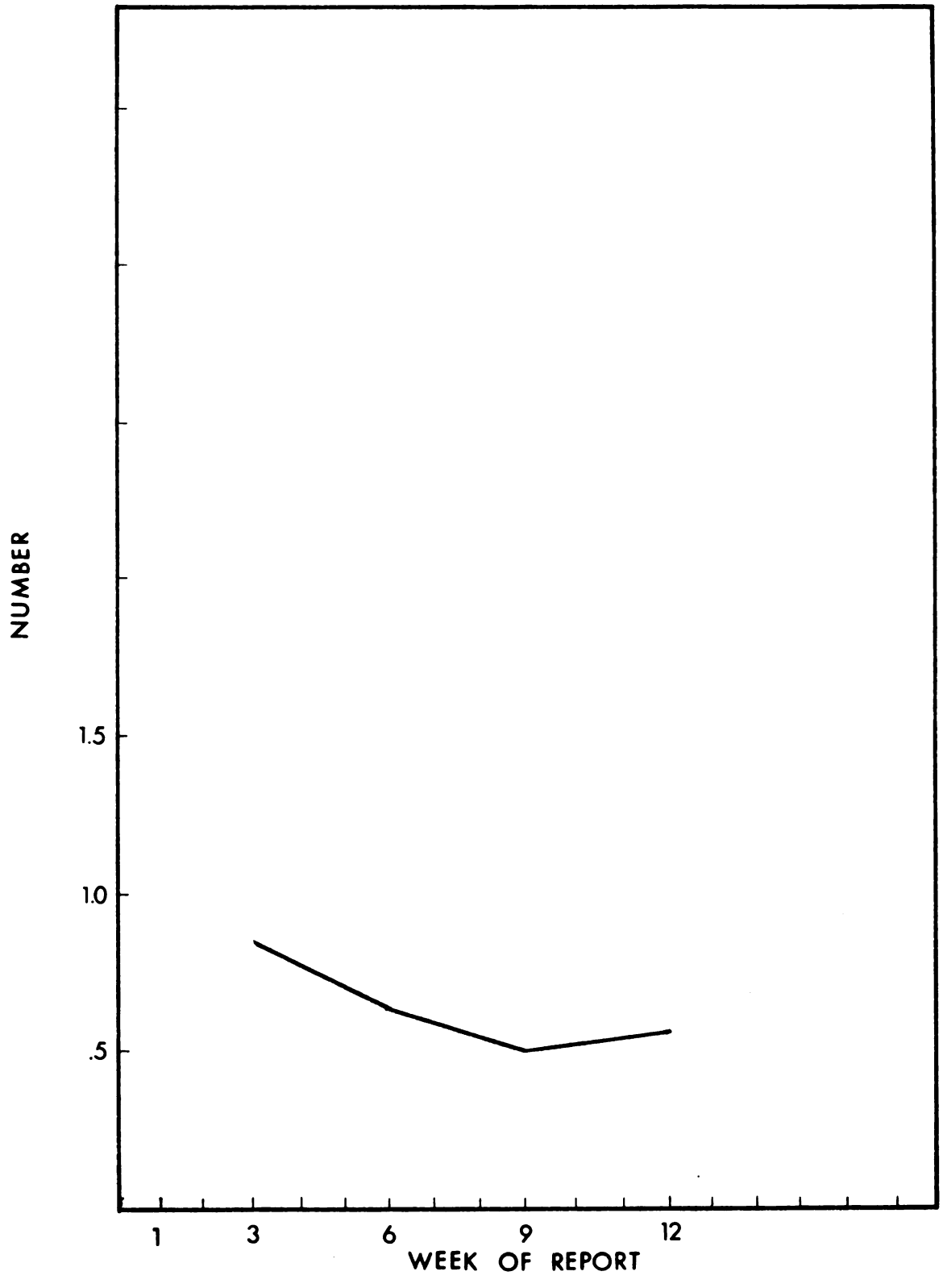

Figure 11. Average number of positive comments made by parents following receipt of the study's program.

any child attitude change during report period two and during the fourth report period received a lower average on the reporting of child attitude change than Written Information parents at their centers. Table 13 shows that the fourth report period was the only time at which Written Information parents at the public center and private center 1 reported any child attitude change. Table 14 shows that for each report period Workshop parents at the two private centers reported having more individuals participating in program activities than Written Information parents. Table 14 also shows that Written Information parents at the public center on the average had more individuals participating in program activities than Workshop parents. Table 15 shows that Workshop parents at the private centers made more positive comments than the center's Written Information parents with the reverse being true for the public center. Each of the above interactions indicate that where Workshop parents at the two private centers seemed to be more involved in using the study's program than Written Information parents the opposite seemed to be true for the public center.

Table 11 shows the time by center interaction as having a significant effect with regard to change in parents' attitude about doing things with the child ($F = 2.17$). Table 16 shows parents at private center 2 as reporting the most change during the first report period in parent attitude followed by parents at private center 1, with parents at the

Table 12

Overall Mean Scores for Treatment Groups and Centers on Minutes of Get-togethers

	Report Periods							
	1		2		3		4	
	WS	WI	WS	WI	WS	WI	WS	WI
Public Center	8.33	17.27	6.11	24.45	8.33	28.62	12.22	23.18
Private Center 1	17.85	3.12	15.71	2.50	12.50	2.50	10.71	.00
Private Center 2	10.00	3.57	9.37	8.57	22.50	12.85	11.25	12.85

Note. WS = Workshop Group, WI = Written Information Group

Table 13

Overall Mean Scores for Treatment Groups and Centers on Child Attitude Change

	Report Periods							
	1		2		3		4	
	WS	WI	WS	WI	WS	WI	WS	WI
Public Center	1.11	1.00	1.00	1.00	1.11	1.00	1.11	1.18
Private Center 1	1.28	1.00	1.57	1.00	1.42	1.00	1.28	1.00
Private Center 2	1.12	1.00	1.00	1.00	1.37	1.00	1.00	1.14

Note. 1.00 = No Attitude Change, WS = Workshop Group, WI = Written Information Group

Table 14

Overall Mean Scores for Treatment Groups and Centers on Number of Game Participants

	Report Periods							
	1		2		3		4	
	WS	WI	WS	WI	WS	WI	WS	WI
Public Center	1.33	1.54	1.00	2.89	1.33	1.72	1.33	1.90
Private Center 1	2.57	.75	2.00	.12	1.71	.12	1.42	.00
Private Center 2	1.12	.42	.87	.85	2.00	.85	1.00	.85
Total	5.02	2.71	3.87	3.06	5.04	2.69	3.75	2.75

Note. WS = Workshop Group, WI = Written Information Group

Table 15

Overall Mean Scores for Treatment Groups and Centers on Positive Comments

	Report Periods							
	1		2		3		4	
	WS	WI	WS	WI	WS	WI	WS	WI
Public Center	.55	.90	.44	1.09	.33	.90	.33	.72
Private Center 1	2.28	.00	1.28	.00	.85	.00	.85	.00
Private Center 2	1.00	.28	.50	.42	.39	.57	.50	.85

Note. WS = Workshop Group, WI = Written Information Group

public center showing the least attitude change. During the second report period Table 16 shows the rank ordering to be private center 1, the public center, and private center 2. During the third report period Table 16 shows parents at the public center as reporting more change in parent attitude than parents at the private centers who reported the same average. During the last report period Table 16 shows the rank ordering to be as follows; the public center, private center 1 and private center 2. Interaction effects between treatment and day care centers seemed to show Workshop parents at the two private centers and the Written Information parents at the public center as being more involved in use of the program than their counterparts. For each report period these parents reported spending more time involved in activities, more change in child's attitude, more persons participating in activities and made more positive comments about the program. Interaction effects between time and day care centers seemed to show that while parents at the two private centers seemed to have a lessening of parent attitude change over the four report periods, parents at the public center seemed to have an increase in attitude change.

Table 11 shows that the time by treatment interaction does have a significant effect with regard to the number of games repeated by program users ($F = 3.23$) and number of positive comments made ($F = 7.18$). Table 17 reports that Workshop parents repeated more activities during the first report period but fewer during the remaining report periods.

Table 16

Overall Mean Scores for Centers on Parent Attitude Change

	Report Periods			
	1	2	3	4
Public Center	1.05	1.10	1.30	1.25
Private Center 1	1.20	1.20	1.20	1.13
Private Center 2	1.33	1.06	1.20	1.06

Note. 1.00 = No attitude change.

Table 17

Overall Mean Scores for Treatment Groups on Number of Program Games Repeated

Treatment	Report Periods			
	1	2	3	4
Workshop	1.16	.58	.83	.79
Written Information	.34	1.03	1.65	1.38

Table 15 shows that Workshop parents made more positive comments than Written Information parents with the difference being greater during the first two report periods than during the last two report periods. Interaction effects between time and treatment seem to show that although Workshop parents repeat more program activities than Written Information parents during the early stages of its use, the opposite is true during latter stages. The above interaction also shows that over the report periods Workshop parents decreased the number of positive comments made about the program with the opposite being true for Written Information parents.

Sakoda et al. indicate that 10 significant differences in a series of 77 significance tests is likely to occur with a probability of approximately one in one hundred by chance ($p < .01$) at the .05 level of significance thus it is likely that the above significant differences are not chance occurrences.

Participant Awareness of the Written Information Program

Once parents had received the study's written program of parent-child interaction activities, participants were interviewed twice for purposes of evaluating their awareness of the program. These interviews took place during the third week and the 13th week following parents having received the written program. These interviews consisted of answering items on the Program Awareness Record. A trend

analysis using a repeated measures analysis of variance design was employed to test for differences over time between treatment groups and day care centers on response to the interviews. Table 18 presents a summary of F-ratios for comparing treatment groups and centers on responses given to items on the Program Awareness Record. A table of Mean Squares to supplement Table 18 can be found in Appendix K. Below are the variables used to test program awareness:

1) Child has seen the written program.
2) Child knows content of the written program.
3) Parents play written program games.

Table 18 shows that the only significant difference between treatment groups with regard to those variables used to test participants' awareness, was on children reporting they had seen the written program ($F = 4.66$). Figure 12 shows that during both interviews, participants in the Workshop group averaged higher scores than participants in the Written Information group. Figure 12 also shows that the above difference in averages was greater at the second interview than at the first.

Table 18 shows no significant differences between day care centers with regard to those variables used to test participant awareness. In reporting F-ratios time as a main effect is not included since the written program had to be shown for purposes of the interview, thereby biasing certain responses during the second interview.

Table 18 shows that the center by treatment interaction had a significant effect on participant's knowledge of the programs content (F = 4.07) and their reporting that parents played games from the written program (F = 4.16). With regard to program knowledge, Table 19 shows that "Workshop" participants at private center 1 had the highest mean scores during the first interview and "Written Information" at the other centers.

Table 19 shows that "Workshop" participants at all centers had their highest mean scores during the second interview. Table 19 also shows that "Written Information" participants at the public center had an increase in mean scores from the first to second interview periods while "Written Information" participants at private center 2 had a decrease in mean scores. The mean scores of "Written Information" participants at private center 1 remained the same. With regard to parent involvement Table 20 shows that the mean scores of participants in private center 1 and "Written Information" participants in private center 2 stayed the same over the two interview periods. Table 20 also shows that the mean scores for the "Workshop" and "Written Information" groups in the public center and the Workshop group in private center two increased over the two interview periods.

Sakoda et al. (1954) indicates that two significant differences in a series of nine significance tests is likely

Table 18

F-Ratios Comparing Treatments and Centers on Child Awareness of Written Program

Item	Treatment df (1,44)	Center df (2,44)	Time df (1,44)	Treatment X Center df (2,44)	Time X Center df (2,44)	Time X Treatment df (1,44)	Time X Center X Treatment df (2,44)
1. Has seen program	4.66*	1.48	9.50**	1.75	.69	2.72	.90
2. Knows program content	.76	1.87	8.01**	4.07*	.95	.74	3.99*
3. Parents play program game	.13	.11	6.01*	4.16*	1.30	1.28	1.01

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

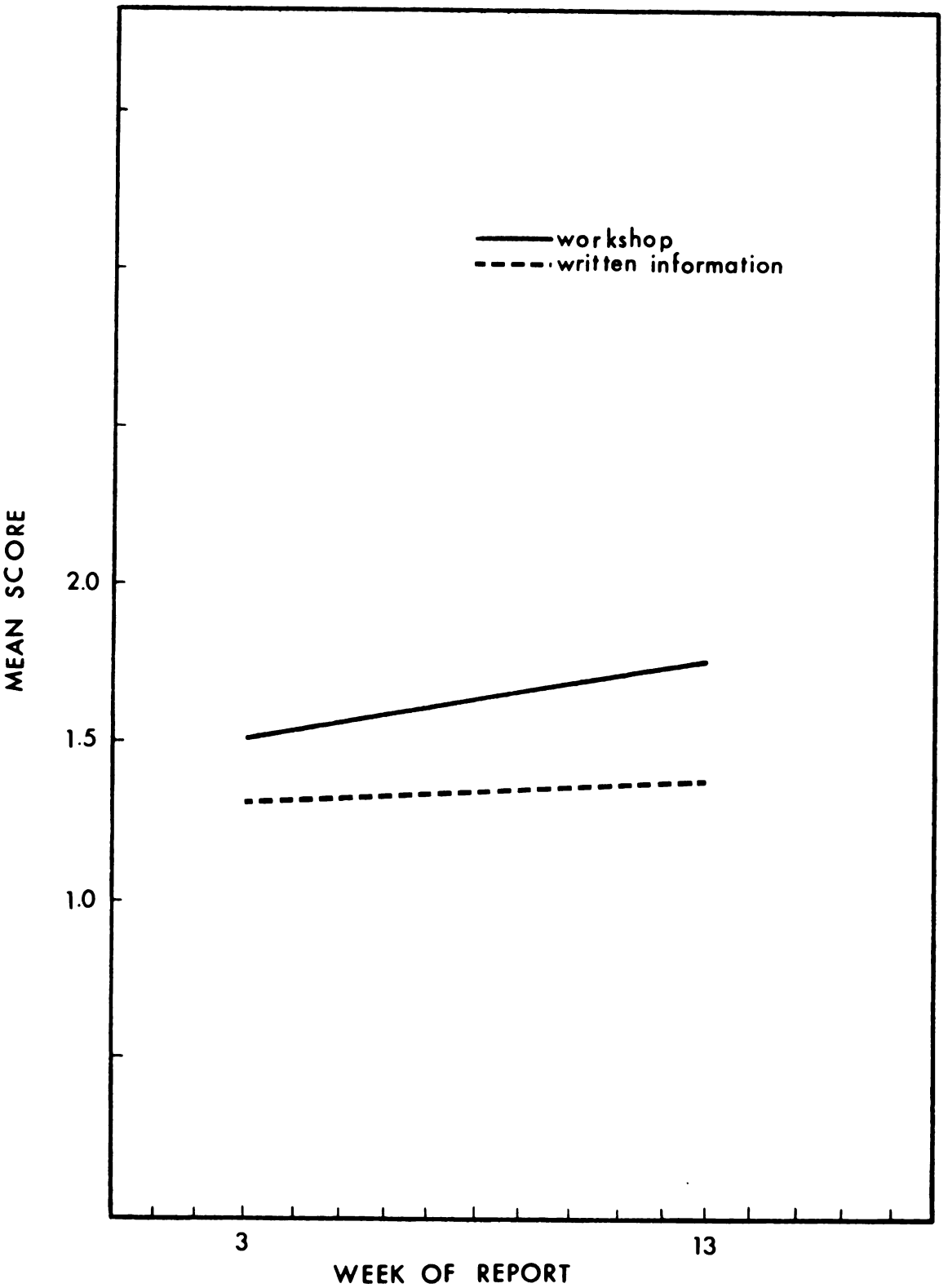

Figure 12. Child reports seeing written program.

Table 19

Overall Mean Scores for Treatment Groups and Centers on Child's Knowledge of Program Content

	Report Periods			
	1		2	
	WS	WI	WS	WI
Public Center	1.00	1.09	1.11	1.45
Private Center 1	1.57	1.12	1.71	1.12
Private Center 2	1.25	1.42	1.62	1.28

Note. WS = Workshop Group, WI = Written Information Group, 1.00 = No Knowledge

Table 20

Overall Mean Scores for Treatment Groups and Centers on Parent Game Involvement

	Report Periods			
	1		2	
	WS	WI	WS	WI
Public Center	1.00	1.36	1.22	1.54
Private Center 1	1.57	1.12	1.57	1.12
Private Center 2	1.25	1.28	1.62	1.28

Note. WS = Workshop Group, WI = Written Information Group, 1.00 = No Involvement

to occur with the probability of about .01 at the .05 level, thus it is not likely that the above significant differences are chance occurrences.

With regard to child awareness of the study's written program, one difference was found between the Workshop and Written Information groups. Day care centers were found to have no significant effect on any of the variables used to measure child awareness. Time was found to have a significance on all of the variables used to measure child awareness. The interaction effect between day care centers and treatment was found to have a significant effect on two of the variables used to measure Child Awareness.

Associative Results

Associative results were obtained by performing a cluster analysis using Tryon and Bailey's (1970) cluster-analytic approach. Seventy-one variables were selected for the analysis from the instrument employed to gather demographic data, the Caldwell Pre-school Inventory, the Children's Interaction Profile employed for behavioral ratings, the Parent Use Record, the Program Awareness Record and data pertaining to treatment group assignment and "Workshop" attendance. Terminal measures were chosen from the Caldwell Pre-School Inventory, and repeated measures of behavioral observations, parent use of the written program and child awareness of the written program. Terminal measures were chosen for the purpose of seeing what significant relationships

had been achieved as a result of the study. Table 21 shows the results of this cluster analysis and the internal variable make-up of each cluster and the factor coefficient of each variable with its cluster. In performing the cluster analysis items with cluster loadings less than .39 were not included. Therefore all such items are not represented in this table. This table shows that ten clusters were established. A total of 71 variables were used in the analysis. Of those 71 variables, 57 variables appeared in the clusters. Table 22 gives the correlations between the clusters and shows the degree of relationship between each of the oblique cluster domains.

Cluster One--Program Use includes nine of the 11 items on the Program Use Record. The remaining items are included in Cluster Ten--Parent/Child Attitude Change. Table 22 shows that Cluster Ten has its highest correlation with Cluster One ($r = .58$). Table 22 also shows that Cluster One has its highest intercorrelation with Cluster Five--Child Awareness of Program ($r = .61$). Cluster Five has its next highest correlation with Cluster Ten ($r = .38$). The above facts suggest an inter-relationship between implementing the program, child awareness of parent involvement with him/her and change in parent/child attitude about interacting with one another. Table 22 also shows that Program Use has no correlation with Cluster Six--Educational Achievement ($r = .00$). However Cluster One has a slight correlation with Cluster

Table 21

The Ten Clusters, Their Variable Construction and Variable Factor Coefficients

Cluster Variable Description	Variable's Factor Coefficient With Cluster
Cluster One-Program Performance	
1. Plays activities longer	.99
2. Plays more activities	.90
3. Repeats more activities	.89
4. Includes more persons in activities	.85
5. Has more activity sessions	.83
6. Feels more positive about activities	.82
7. Child enjoys activities	.77
8. Tends to live in a house	.50
9. Uses program sample activities	.44
10. Tends to play on same days	.44
11. Tends to play at same time	.39
Cluster Two-Family Ethnic/Sibling Makeup	
1. Child tends to be white	.98
2. Mother tends to be white	.97
3. Father tends to be white	.94
4. Mother has fewer siblings	.68
5. Father has fewer siblings	.45
6. Child has fewer siblings	.39
Cluster Three-Father's Education/Socioeconomic Status	
1. Fathers are more educated	.94
2. Fathers have more years of education	.92
3. Fathers tend to be more professional or skilled	.83
4. Father tends to have more hobbies	.65
5. Father tends to belong to more groups	.63
6. Father has a higher income	.61
Cluster Four-Free Play Behavior	
1. Walks and runs more	.93
2. Plays more aggressively	.81
3. Visits more room areas	.60
4. Tends to stand more	.43
Cluster Five-Child Awareness of Program	
1. Has seen parents read program	.93
2. Has seen the program	.90
3. Parents play program games	.88
4. Knows content of program	.86
5. Parent tends to attend workshops	.40

Table 21 (cont'd)

Cluster Variable Description	Variable's Factor Coefficient With Cluster
Cluster Six-Educational Achievement	
1. Scores higher on the Personal-Social Responsiveness Sub-test	.92
2. Scores higher on the Concept-Sensory Sub-test	.90
3. Scores higher on the Associative Vocabulary Sub-test	.89
4. Scores higher on the Concept-Numerical Sub-test	.87
5. Tends to be among the older children in class	.63
Cluster Seven-Marital Status	
1. Both parents at home	.93
2. Parents tend to be married	.74
Cluster Eight-Mother Education/Socioeconomic Status	
1. Mothers are more educated	.95
2. Mothers have more years of education	.97
3. Family tends to have higher social position	.79
4. Mother tends to be more professional or skilled	.72
5. Mother tends to have higher income	.50
6. Mother tends to work full time	.46
7. Mother tends to belong to more groups	.39
Cluster Nine-Parent Age/Residential Stability	
1. Fathers are older	.87
2. Mothers are older	.81
3. Tend to have resided at present residence longer	.46
Cluster Ten-Parent/Child Attitude Change	
1. Child tends to change attitude about things	.93
2. Parents tends to change attitude about parent-child play	.81

Eight--Mother's Education and Socio-economic Status (r = .23), and Cluster Five shows notable correlation with Cluster Eight (r = .34). It should be noted that Cluster Eight has a notable correlation with Cluster Six (r = .39) and Cluster Ten (r = .25). The above suggests that where parent-child interaction might influence the parent-child relationship it might have no effect on educational achievement. The above also suggests that mothers education and Socio-economic status is slightly related to both parent-child interaction and educational achievement.

Cluster Two--Family Ethnic/Sibling Makeup has its highest intercorrelation with Cluster Six--Educational Achievement (r = .45). Cluster Two also shows notable correlation with Cluster Three-Father's Education and Socio-economic Status (r = .26) and Cluster Eight--Mother's Education and Socio-economic Status (r = .29). Clusters Three and Eight have their highest intercorrelations with each other (r = .65). Cluster Three and Eight have a notable correlation with Cluster Six (r = .44) (r = .39). The above would suggest that parents of white participants have more education and higher socio-economic status and that this and other family background features lend toward their children having higher educational achievement. It is interesting to note that while Clusters Two, Three, and Eight are notably correlated with educational achievement only Cluster Three has a slight correlation with Cluster Four--Free Play Behavior

(r = .22). Cluster Three also has a notable correlation with Cluster Seven--Parental Marital Status (r = .44). Cluster Seven also shows a substantial correlation with Cluster Eight (r = .35) but it is interesting to note that it shows virtually no correlations with either Cluster Four (r = .01) or Cluster Six (r = .07). This suggests that although there is a relationship between educational achievement and the education and socio-economic status of parents, it has no relationship to whether or not they are married. Cluster Eight also shows a slight correlation with Cluster Nine--Parental Age and Residential Stability (r = .21). It is interesting to note that although Cluster Nine has notable correlations with Clusters Four (r = .21), Five (r = .27), and Seven (r = .25) it has no correlation with Cluster Six (r =-.11).

Table 22

Correlations Between Each of the Ten Clusters

Clusters	Clusters 1	2	3	4	5	6	7	8	9	10
1. Program Performance		.05	-.01	.17	.61	.00	.09	.23	.00	.58
2. Family Ethnic/ Sibling Makeup	.05		.26	-.10	.18	.45	.12	.29	.07	.05
3. Father Education/ Socio-economic Status	-.01	.26		.22	-.02	.44	.44	.65	.07	-.17
4. Free Play Behavior	.17	-.10	.22		.07	.00	.01	.04	.21	-.27
5. Child Awareness of Program	.61	.18	-.02	.07		-.04	.03	.34	.27	.38
6. Educational Achievement	.00	.45	.44	.00	-.04		.07	.39	-.11	-.05
7. Marital Status	.09	.12	.44	.01	.03	.07		.35	.25	-.03
8. Mother Educational/ Socio-economic Status	.23	.29	.65	.04	.34	.39	.35		.21	.25
9. Parent Age/Residential Stability	.00	.07	.07	.21	.27	-.11	.25	.21		.05
10. Parent/Child Attitude Change	.58	.05	-.17	-.22	.38	-.05	-.03	.25	.05	

CHAPTER IV

DISCUSSION

In the introduction it was pointed out that some evidence exists that a high degree of parent-child interaction in which certain parental behavior is exhibited, serves as the primary promoter of cognitive development and academic performance in children; that parent-child interaction seems to be the primary force in determining the personality and social behavior of children; and parent-child interaction that promotes good cognitive development also promotes positive personality and social development. Child service programs are beginning to employ specific parent-child interaction programs to promote the cognitive, emotional and social growth of the children they service. In this study the development of a specific written parent-child interaction program along with a workshop program to train parents in the use of the written program, provided a means to evaluate the effect of such a program on parent-child interaction and on the cognitive and social development of children. By involving participants from both private and public day care centers the present study was also provided the opportunity to evaluate the effect of these centers and the demographic characteristics of their children on the cognitive and social development of the study's participants.

In the present experiment the results showed no significant differences between treatment groups with regard to either pre- or post-test scores achieved on the Caldwell Pre-School Inventory. These results indicate that the training of parents of pre-school children in the use of the study's written program, followed by the presenting of the program to parents or presenting this program to parents without training had no significant effect on the educational growth of the children. The lack of significant differences in educational achievement between groups shows the study's parent-training program to be less successful than other studies showing parent-training programs to be effective in improving educational development (Boger, Kuiper and Berry, 1969; Gray, 1967, 1968, 1970; Levenstein, 1968, 1969), although it is important to note that many such parent-training studies involved a fairly homogeneous population consisting of urban or rural parents from the lower socio-economic status (S.E.S). It should also be noted that there is some question about the experimental rigidity of some parent-training studies.

In the present study the participants were not demographically homogeneous and treatment groups did differ with regard to demographic background. Fathers of participants in the training group were younger, had less full time employment and had less of a tendency to be raised by both parents. Mothers in the training group seemed to belong to more groups. Results indicated that there were other demographic differences in addition to those stated above. The findings from

this study show that the characteristics of both father's and mother's educational background, and the ethnic background of the child and parents are notably correlated with the educational achievement of the child with the correlations with ethnic background, and the father's education being slightly higher. These findings are supportive of studies indicating that cognitive and educational growth are highly related to demographic factors (Beckey, 1942; Hilliard, 1957; Montague, 1964). These findings also suggest that cultural factors may be inherent in demographic information and that such cultural factors may be related to cognitive and educational growth with parents education being a primary cultural factor variable included in this relation. The above findings also appear to support studies indicating that fathers as well as mothers have a significant influence on the intellectual development of children (Bartemeir, 1953; Bigner, 1970; Blanchard & Biller, 1971; Dyk & Witkin, 1965; Grunebaum, Hurwitz, Prentice, & Speng, 1962). This is also consistent with studies that show that class and associated demographic characteristics are highly correlated with paternal behavior and that maternal behavior is concommitant with paternal behavior (Bee, Van Egeren, Streissgreth, Nyman & Leckie, 1969; Brofy, 1970; Kamii & Radin, 1967; Radin, 1972).

Based on the above studies it would appear that father involvement in a parent-training program might be important in its effecting parental change and change in the educational achievement of children. It is important to note that

fathers had minimal involvement in the study's training program. If effecting significant differences in educational achievement through parent training is related to father involvement, then the lack of father involvement in the study's training program must be considered as a possible factor in the study's outcome along with demographic differences and probable differences in related parental behavior.

That demographic variables appear to be related to educational achievement is also indicated by significant differences between day care centers on four of the five Caldwell pre-test scores achieved by participants along with significant demographic differences between centers. Demographic differences between day care centers appeared to be greater than those between treatment groups and might explain why there were significant differences on pre-test scores between centers and not treatment groups. This suggests that the effect of demographic differences on educational achievement has to do with the kind and/or number of differences. Unlike the treatment groups, day care centers also differed with regard to racial make-up, marital status of parents, number of siblings, fathers contributing income, mother's occupation and social position of the family. Other studies show that father absence, parents' education and occupation, family race, and the social position of the family are highly related to educational achievement (Palmer, 1970; Santrock, 1972). It must be noted that the public center which scored lowest on

the Caldwell tests had the highest rate of father absent homes and Black participants, and ranked lowest in terms of family social position and education of parents.

Although the study showed demographic differences between centers it showed no significant difference between centers with regard to post-test scores achieved on the Caldwell Pre-School Inventory. These findings indicate that the educational achievement of participants seems in general to be independent of which day care center they attended. Studies suggest that where there is a significant difference between the programs of day care centers the effect of day care centers is likely to be shown (Frost & Rowland, 1970). The findings of this study question the above conclusion since the day care centers involved in the present study appeared to have notably different programs without showing a significant effect on educational achievement. A primary difference between the programs of this study's centers was the extent to which they included activities that called for instructions and teacher supervision and/or that restricted the movement, talking and peer interaction of children. Private center 1 appeared to have more of the above type activities, with the public center having the least and private center 2 having a balance of restrictive and non-restrictive activities.

Another notable difference between center programs was the amount of daily involvement by the director. Since the office of the director for the public center was not located

at the center there was minimal director involvement with staff, participants and parents. The amount of director involvement was greatest at private center 2, followed by private center 1.

In reviewing the study it appears that demographic background was related to the educational achievement of participants. The results of this study also indicate that parent behavior and verbalizing in terms of the frequency and length of direct parent-child interaction has no notable relationship to educational achievement or demographic background. It is important to note however that studies show that parents as role models do influence the learning of children thus suggesting that parent behavior might have an effect on educational achievement (Bandura, 1963). Since the role models of parents would vary according to parent's education it might be that these models would be more valuable in determining educational achievement and child behavior than the frequency or length of direct parent-child interaction. It should also be noted that parents with higher education probably provide role models and an environment which is most conducive to educational achievement and place a greater stress on educational achievement. Although parent behavior might have an effect on educational achievement, the results of this study suggests that demographic background variables have more of an influence on achievement.

There were also no significant differences between treatment groups in participant behavior observed during

free play. This indicates that training parents of pre-school children in the use of the study's written program, followed by presentation of the program and the presenting of the program without training has no significant effect on the social behavior of pre-school children. Treatment groups differed demographically so the above results also indicate that these differences do not influence the behavior of children. There was only one significant difference between day care centers on participant behavior observed during free play. This indicates that differences in the programs of day care centers had no significant effect on the social behavior of pre-school children. Since demographic differences are greater between day care centers than treatment groups the above findings also indicate that demographic differences had little influence on the social behavior of pre-school children. The cluster analysis also showed free play behavior to have little correlation with demographic factors, and indicated that the movement, posture and aggressiveness demonstrated by the pre-school child in social behavior is influenced little by demographic factors. Since parent behavior has been shown to be highly correlated with demographic background, the above results also question the influence of parent behavior on the behavior of children in a free play situation.

In looking at the study's program, lack of success in bringing about significant differences in educational

achievement certain things need to be considered. As stated before the study's treatment groups differed demographically and as a result of this the effectiveness of the study's training and/or written program may have been overshadowed by the effect of certain demographic and associated variables on the educational achievement of participants. Had the study's participants been more homogeneous the results of the study may have differed. In reporting characteristics of programs that have been successful in working with children to promote cognitive gains Hawkridge et al. (1968) state that the groups were small, homogeneous, received a high degree of individualized instruction and used instructions and materials that were closely linked to program objectives and trained teachers in the method of the program. It is quite possible that the above program characteristics would apply in working with parents. Therefore it is important to note that the study's participants were not homogeneous, that instructions were moderately individualized and that the training program was designed independent of the day care center programs. This last point is particularly important in that the study's program and the day care programs might have had a slight cancelling out effect on each other. Hawkridge et al. (1968) and Posner (1968) also suggest that programs successful in promoting cognitive skills, emphasized cognitive and not socio-emotional development. The study's parent training and written information programs

were designed to influence behavior and emotional skills as well as educational achievement.

Although there were no overall differences between treatment groups in observed behavior, results from the present experiment indicated that time had a significant effect on the social behavior of the participants. During the course of the study participants increased their amount of movement and/or their employment of movements ranked higher by the study in its hierarchy of motion; crawling and other non-standing movements, walking and running. Over the course of the study participants also decreased the amount of physical contact they had with objects and/or persons during free play periods as well as becoming more aggressive in their play and talking more during free play. Results from the present study indicated that time by treatment interaction had a notable influence on the type of motion employed by participants to get around during the observation. During seven of the 18 observation weeks participants in the workshop group were moving about more and/or employing movements ranked higher by the study in its hierarchy of motion. The written information and control groups averaged the highest motion ratings for four and six weeks respectively. It is interesting to note that the written information participants received most of their highest scores during the weeks prior to the distribution of the written program with the opposite being true for the workshop and control groups. Since treatment groups did differ demographically the above results

might be related to those differences. The present study also revealed that an interaction between day care centers and time influenced the posture of participants during the observation. Participants at both the public center and private center 2 were observed to do more standing than participants at private center 1. It is interesting to note that participants at the public center did more standing during the period prior to the distribution of the written information program while participants at private center 2 did more standing after the written program was distributed. Private center 1 was the most restrictive and its participants were observed to do less standing throughout the 18 week observation period.

Although parent training in the use of the study's written information program and/or use of the written information program was found to have no significant main effects and minimal interaction effects on the outcome of educational achievement, and behavior, variables used to measure parent use, and participant awareness of the program did show significant differences.

Results from the present experiment showed that children in the workshop group enjoyed interaction with parents more and had more positive changes in attitudes about doing things with parents than children in the Written Information group. Results also showed that Workshop parents had more positive changes in attitude about doing things with their

children than parents in the Written Information group. The above results suggest that parent training in the use of a written program followed by use of the program can enhance the parent-child relationship. It is important to note however that this enhancement of the parent-child relationship does not seem to be related to educational achievement or related to the social behavior of the child.

The results from the present experiment also show that treatment conditions interacted with time to influence parents use of the program. As shown in Table 17 Workshop parents seemed to repeat more games during the first report period following the workshops. During the following report periods parents in the "Written Information" group repeated more games. Since there were no significant differences between groups in the number of get-togethers or number of activities played over the study's four report periods, the above results suggest that "Workshop" parents did use more of the program activities and/or created more activities of their own to be used during a get-together. Both the use of more program activities and/or creation of activities were goals of the program, and therefore workshop training seemed to be effective with respect to these goals. In both private centers "Workshop" parents spent more time playing program activities whereas "Written Information" parents at the public center spent more time playing these activities.

Although workshop participants enjoyed the program activities more than Written Information participants an

interesting pattern was observed between the number of games repeated by workshop parents and participant enjoyment. During report periods one and three the difference in the degree of enjoyment was greatest (Fig. 8) and the average number of games repeated and average length of game time was greatest for workshop parents during these periods than during periods two and four (Tables 12, 17). This would indicate that in implementing a parent-child interaction program calling for parents to employ specific activities, repetition and time should be considered as important to the goal of promoting better parent-child relationships. A similar pattern seems to exist with regard to child attitude change for Workshop participants at the public center and private center 2. When comparisons were made between centers, results show that change in parent attitude took on different patterns over the four report periods. Parents at the public center tended to have their greatest attitude change during the third and fourth report periods. Parents at private center 1 had their greatest attitude change during the first three report periods with the amount of attitude change being the same during these periods. Parents at private center 2 had their greatest attitude change during the first and third report periods with reported attitude change being the same for the second and fourth report periods. It is interesting to note those periods where the least attitude change was reported by parents at the public

center and private centers were periods when they were spending less time playing program activities. As with getting children to enjoy parent-child activities and have a change in attitude as the result of activities, the length of time spent in parent-child activities seems to relate to changes in the parent attitude.

Another interesting pattern observed had to do with an interaction between treatment groups and day care centers. During their use of the study's written program Workshop parents at both private centers and Written Information parents at the public center spent more time playing program activities and involved more persons in the activities (Tables 11, 12). This same pattern was noted in terms of number of positive comments made about the program with the above parents making more positive comments at their respective centers. The above results suggest that the workshop condition at the public center differed in some way from the same condition at the private centers. The difference between the "Workshop" groups resulted from a combination of reasons. In carrying out its workshops the study had difficulty in implementing them at the public center as planned. Initially the center had agreed to provide its facilities for the workshops and to provide babysitting services for those parents who could not find such services. At the time of the first workshop facilities were open but not arranged for the workshop and at no time did a babysitter arrive to

care for the children brought by parents. This lack of baby-sitting called for parents to request that their children occupy themselves with toys at the facility while efforts were made to carry out the workshop. As a result of the above circumstances workshops at the public center got started on the wrong foot. Although voiced by only a few parents it was quite evident that parents were quite disappointed and upset.

Five of the nine "Workshop" parents at the public center attended the first workshop and of those parents one had to walk, another had to commute from outside of Lansing, one had to borrow a car and two had to bring their children. Based on the above facts it can be concluded that these parents were very enthusiastic about the workshop program. It should be noted here that the public center had its facilities in a local public school, and not at its head-quarters. Efforts to have the public center provide a baby-sitter for the next workshop was not successful. Therefore parents were informed of this. At the second and third workshop only one parent arrived and therefore these work-shops were not carried out. To insure that these parents were given training in all facets of the study's written program, a Saturday morning workshop was given at the LeJohn Center in Lansing and home workshops were given. As a result all "Workshop" parents attended the Saturday morning workshop and/or had a home workshop.

In contrast to the public center workshop, workshops at the private center went much more smoothly. This was especially true at private center 2 where the center director worked carefully to insure that parents attended workshops and had any parent needs for babysitting and transportation taken care of. Although private center 1 was cooperative, the degree of director involvement was much less. It should be noted that one of the parents at private center 1 had to attend a Saturday morning workshop for training while another received a home workshop. "Workshop" parents at private center 2 completed all their training during the scheduled workshops. The above facts point out the importance that day care center involvement had in getting parents involved in the study. It is suggested here that the lack of support by the public center resulted in certain negative feelings in its "Workshop" parents, thus reducing their inclination to attend further workshops and to use the study's written program. At the same time the strong support given by private center 2 might have promoted a positive feeling in its parents, thus increasing their inclination to attend workshops and to use the study's written program. It might be that the above points also apply to private center 1 which gave support which was between the other two centers in strength and which had workshop attendance higher than the public center but lower than private center 2.

With regard to their awareness of the study's written program more children in the "Workshop" group reported having seen the program than in the "Written Information" group. This difference resulted at both interviews given to assess program awareness. The difference also increased between interviews which were given three and thirteen weeks following the program being given to parents. Overall "Workshop" children also knew more about the contents of the written program, however with the public center the reverse was true (Table 19). This seems to follow those patterns reported earlier indicating that the "Written Information" parents at the public center made more use of the written program. In reporting whether or not their parents played games from the study's program, the responses of children followed the aforementioned pattern. That is, more "Workshop" children at the private centers reported their parents playing program games than "Written Information" children with a public center reversal.

Summary and Implications

It was hypothesized that cognitive skills, and interpersonal behavior of children as well as parent-child involvement would be enhanced by training parents in a workshop setting to use written information designed to promote the above areas of development. The present study shows that the parent training program and written program did not bring about any significant differences in the educational achievement or free play behavior of the participants

contrasted with the control group. Significant differences were obtained in the parent-child relationship of the parent training participants contrasted with the written information group. It appears that where parent training and use of a written parent-child interaction program might be successful in promoting better parent-child relationships and associated affective changes it will not necessarily bring about changes in the child's educational achievement or behavior patterns in a social setting.

The above outcome may have been due in part to the fact that the study's program was designed to bring about social and behavioral changes as well as changes in educational achievement. It is possible that this design was too broad since the study indicates that learning may be more specific than the design suggests, and that to effect the above changes the design must be more specific. It might be that to promote educational achievement parent training needs to focus on the teaching of specific learning tasks that are related to specific educational goals; and to promote behavioral changes parent training needs to center about methods of behavior training that are related to specific behaviors.

The experiment also showed that the demographic background of participants cannot be ignored since it is highly correlated with educational achievement. Included in this study were participants with significantly different

demographic backgrounds. Other studies have found homogeneous groups to be a more effective audience. Participants in this study differed with regard to economic background, education, social position, race, age, marital status and other pertinent demographic characteristics and the correlation just mentioned suggests this had an influence on the outcome of the study. This suggests that perhaps an effective parent training program should be designed to meet the needs of specific groups with specific demographic characteristics.

In presenting the training program only a moderate amount of individualized instruction and attention was given. The training program was oriented toward the parental group and toward having the group benefit from member exchanges as well as from remarks by the program agent. In carrying out the parent training workshops it could be seen that not all parents were comfortable with having the workshops oriented toward a group training model. Some parents were also uncomfortable with group discussion, role playing, and being expressive with persons they didn't want to know about their lives at the moment. There were parents who suggested that two or three informal get-togethers be held prior to an actual workshop, for the purpose of getting acquainted. In such cases it could be observed that persons from different demographic backgrounds might react differently to a particular workshop model.

In looking at the relationship of demographic background to educational achievement and behavior this study suggests that fathers might have more of an influence than has been indicated by several studies involving only the mothers of children. This becomes an important point in terms of trying to effect changes by way of parent training. If fathers do indeed have a significant influence on the child and the actions of the mother with the child, the effectiveness of the parent training program might be enhanced by father involvement. Where fathers are absent from the home it might make designing a parent training program more effective if this was taken into account, particularly where the mothers of boys are concerned.

In reviewing this study it is important to note that its findings were the result of using experimental methodology to study the effect of parent training on the educational achievement and social behavior of pre-school children and therefore should be considered in the designing, implementing, and study of parent training programs. It must also be noted that this study is just a single effort in the experimental study of parent training programs and therefore its findings are not conclusive at this time. Before the findings of this study can be used to make generalizations there must be additional experimental investigation of those areas related to this study and its findings. This study indicates that it will be important for future research to explore the

following areas as they relate to parent training programs.

Future studies should investigate the effect of individualized instruction as a parent training technique. This study indicated that the learning needs of parents might be notably different. Therefore a training program directed at the general learning needs of parents or only certain learning needs might be inappropriate and ineffective where many parents are concerned. By using individualized instruction the parent training program might be better able to train parents by focusing on the particular learning needs of each parent in the program.

It was noted in this study that implementing the parent training program for the purpose of promoting educational achievement and social behavior might have diminished its effectiveness for meeting either of these goals. This suggests that parent training should be directed at specific and not multiple learning goals and needs, and that parents should be trained in teaching or interaction techniques as they relate to a specific learning goal. Specific techniques of teaching need to be explored for their effectiveness in promoting educational achievement or social behavior. Parent use of rewards in their teaching or parent-child interactions is one of the teaching techniques that needs to be studied for future research.

The effect of father involvement in parent training needs to be explored. In the present study fathers had

minimal involvement in the parent training workshop. In future studies comparisons should be made for the effect of father involvement in parent training. This is most important since fathers have a significant influence on the child and this influence must be considered in exploring the parent training effort to effect the child through parent-child interactions. The influence of the father on the behavior of the mother and her interactions with the child must also be considered since this might have significantly influenced the effort of this study's parent training program which was directed primarily at mothers. It might be that parent training has little effect on parenting behavior or the child when directed at only one parent.

Although the study's parent training workshops were directed at training parents in the use of specific parent-child interaction activities, they did not call for parents and children to practice these activities during the workshops. Therefore the workshop program could not work directly with parent and child to develop certain desired interaction skills. It might be that more control is necessary over the actual interaction activities in order to promote certain parenting behaviors. Future research might investigate the effect of involving parents in an operating social model whereby parents would bring children to training sessions to practice interaction activities, and specific interaction behaviors and skills.

The cluster analysis showed the study's criteria for educational achievement and social behavior to be independent. It should be noted that this independence might be specific to the criteria of this study. Therefore studies similar to this one but using different criteria are needed to provide additional information regarding the relationship of educational achievement and social behavior.

This study indicated that the cultural background of parents as shown in the demographics appears highly related to children's cognitive performance. Perhaps as much research time should be devoted to exploring and defining this relationship as is spent researching the effect of specific parent-child activities.

In carrying out future research on parent training programs it is vital that the research be longitudinal. This study showed that time had an important effect on its results. The study also showed that interactions of time with treatment conditions had a significant effect on some of the study's results. This suggests that measures taken at a single point in time are subject not to be representative of the outcome of a parent training program and therefore would not be helpful in accurately determining the effects of a program.

APPENDICES

APPENDIX A

PARENT-CHILD INTERACTION ACTIVITIES

P.I.E. ACTIVITY SCHEDULE

Week	Activity
1.	1. Introduction and Planning 2. Clapping Copy Cat I 3. Clapping Copy Cat II
2.	4. Planning 5. A Special Time Interview 6. Count and Do
3.	7. Planning 8. Special Time Exercises 9. Special Time Reading 10. Listen-Repeat-Do
4.	11. Planning 12. Near and Far 13. Face Drawing 14. Body Drawing
5.	15. Planning 16. Special Timer Says I 17. Special Time Rap Session I 18. Special Timer Says II
6.	19. Planning 20. Home Tour 21. Home Counting Tour 22. Thinking and Communicating With Symbols
7.	23. Planning 24. The "Guess What?" Grab Bag 25. Special Time Reading II 26. Thinking and Communicating With Symbols II
8.	27. Planning 28. The Pretend Grab Bag 29. Completing Sentences I 30. Bean Counting
9.	31. Planning 32. Think and Remember 33. Special Time Rap Session II 34. Completing Sentences II
10.	35. Planning 36. Comprehension 37. Free Drawing 38. Activity to be Chosen by Child
11.	39. Planning 40. Parent-Child Created Activity 41. Activity to be Chosen by Child 42. Activity to be Chosen by Parent
12.	43. Planning 44. Parent-Child Created Activity 45. Activity to be Chosen by Child 46. Activity to be Chosen by Parent

APPENDIX B

GAMES REPRESENTING PROGRAM ACTIVITIES

Exercise 1: A Special Time Bowling Game

This exercise is designed to teach the following skills:

Listening capacity	Body coordination
Applied counting	Creativity
Number concept	Imagination

Sample Exercise: In this game you or your child will arrange six paper cups right side up on a sheet of newspaper, while the other takes turns trying to bowl at the cups until they are all down. The bowler will bowl the ball when the other person has counted to three. Make sure you count with your child the number knocked down after each bowl.

Exercise 2: Special Time Reading

This exercise is designed to teach the following skills:

Listening capacity	Speech
Attention span	Vocabulary
Memory span	Word use
Comprehension ability	

Sample Exercise: Involve yourself in reading a story to your child.

Exercise 3: A Special Time Rap Session

This exercise is designed to teach the following skills:

Verbal communication
Self expression
Self awareness
Family awareness

Sample Exercise: Special Time rap sessions should be a time for you and your child to talk about things that are interesting and will help increase your awareness of one another. Some things that might be interesting for your rap sessions are:

(1) A story you have read, told or heard.
(2) Things you see on a neighborhood tour.
(3) Nice things that happened to you today.

(4) Bad things that happened to you today.
(5) Things you see in a picture.
(6) Things you would like to have.
(7) Things you like about school/work.
(8) Things you don't like about school or work.

Exercise 4: Special Time Shell Game

This exercise is designed to teach the following skills:

Sensory awareness
Problem solving
Memory span

Sample Exercise: Place three objects that are familiar to your child in front of her/him. Name the objects and have your child name them. Have your child close her/his eyes while you cover one of the objects with a cup, box, etc. Then have your child open her/his eyes and tell you which object is covered. Make sure you give your child the opportunity to cover up objects for you to guess at.

APPENDIX C

PARENT INTERVIEW FORM

PARENT-CHILD INTERACTION EXERCISE PROGRAM

Child's
Last Name_____First_____Today's date___/___/____
Month/day /year

Street Address_____City_____County_____Zip_____

Birthdate___/___/___ Age____ Sex____ Telephone Number_____

Birth Place_____Present School_____
City State Country

Ethnic Origin
Please Check One: ____Black ____Mexican American ____Oriental

____White ____American Indian ____Other_____

Father's	Mother's
Name_____	Name_____
__natural __step __adopted __foster	__natural __step __adopted __foster
Ethnic Origin_____	Ethnic Origin_____
Birthdate_____Age_____	Birthdate_____Age_____
Home phone_____	Home phone_____
Home address_____	Home address_____
Occupation_____	Occupation_____
Employed at_____	Employed at_____
Work days_____	Work days_____
Work hours_____	Work hours_____
Annual Income $_____	Annual Income $_____

PLEASE STATE NUMBER OF YEARS OF EDUCATION COMPLETED

Education				Education			
Elementary	High School	College	Other	Elementary	High School	College	Other

Birth Place_____ (City State Country) Birth Place_____ (City State Country)

Date of Marriage_____ Marital Status: __Married __Single Parent __Separated __Widowed __Divorced

Child's Brothers and/or Sisters

Name and Sex	Birthdate	Age	Living at Home		Grade in School
			Yes	No	

Present Residence_____House _____Apartment _____Other_____

Please State Number of Years at Present Residence_____

Please State Number of Years at Previous Residence_____

Please State Age and Sex of Others Living at Home_____

FATHER	MOTHER
Number of Older Brothers___ Sisters___	Number of Older Brothers___Sisters___
Number of Younger Brothers___ Sisters___	Number of Younger Brothers___ Sisters___
Hobbies_____	Hobbies_____
Club and Group Affiliations_____	Club and Group Affiliations_____
Reared by: Both Parents_____	Reared by: Both Parents_____
One Parent_____	One Parent_____
Other_____	Other_____

APPENDIX D

PROGRAM USE RECORD

Name_____ Date_____

1. How many P.I.E or "Special Time" get-togethers have you and your child had during the past three weeks?_____

2. How many P.I.E. games or activities have you played with your child during the past three weeks?_____
   Please give game or activity numbers:

3. How many P.I.E. book activities did you repeat during the past three weeks?_____
   Please give activity numbers:_____

4. During the past three weeks have you had your P.I.E. or "Special Time" get-togethers on the same days and at the same times each week?_____
   Please comment:

5. During the past three weeks, about how long did most of your P.I.E. get-togethers last?_____
   Please Comment:

6. During the past three weeks, has your child enjoyed most of your P.I.E. get-togethers?_____
   Please Comment:

7. During the past three weeks has your child's attitude about doing things with you changed any?_____
   Please Comment:

8. During the past three weeks has your attitude about doing things with your child changed any?_____
   Please Comment:

9. During the past three weeks who has been taking part in your P.I.E. activities?_____
   Please Comment:

10. What do you think are the positive things about P.I.E. so far?

APPENDIX E

PROGRAM AWARENESS RECORD

P.I.E
Program Awareness Record

Child's Name_____ Date_____Time_____

1. Have you ever seen this (P.I.E.) book?_____
   Where?_____

2. Do you know anyone who reads this book?_____
   Who?_____

3. Does your mother/father ever read this book?_____

4. What is this book about (What is in it?, What is it for?) ?

   _____

5. Please tell me how to play some of the games in this book?
   and/or
   Please tell me how to play some of the games you play with mother/father?

6. Does anyone ever play the games in this book with you?_____
   Who?_____ Which ones?_____

7. Does your mother/father ever play the games in this book with you?_____ Which ones?_____

APPENDIX F

CHILDRENS INTERACTION PROFILE

SCHOOL_____ DATE_____ DAY_____

		CHILDREN											
I.	INITIAL LOCATION												
Ia.	FINAL LOCATION												
Ib.	OBSERVED IN ORDER + (Yes) - (No)												
II.	POSTURE												

1. Lying: in prone position on floor, table, etc.
2. Sitting: sitting on floor, table, chair, etc.
3. Kneeling: kneeling and positions other than sitting, lying, standing
4. Standing: standing on floor, table chair, etc.

III.	MOTION												

1. No motion: not moving from one point to another
2. Crawling: crawling and other movements from one point to another but not in standing position
3. Walking
4. Running

IV.	PHYSICAL BEHAVIOR												

1. No contact: not holding, touching, or grasping an object or person with hands
2. Contact object: actively holding, touching, or grasping an object
3. Contact person: actively holding, touching, feeling or grasping a person
4. Contact object and person

V.	SOCIAL BEHAVIOR												

1. Sleep: eyes closed, no response during observation period
2. Unoccupied behavior: no interest in objects or persons, or activity
3. Solitary play: pursues own activity without reference to what others are doing
4. Onlooker behavior: active observation of child, group, or object without play
5. Parallel play: plays alongside others but not with others, using similar playthings

6. Associative play: playing with, sharing with, interacting with other children
7. Cooperative play: playing with organized goal oriented games

VI. PASSIVE-AGGRESSIVE

1. Passive behavior: being shoved, ordered, etc. without resistence, showing fear etc.
2. Immobile not passive or aggressive: staying in one place being neither pass. or agg.
3. Mobile not passive or aggressive: moving about not being passive or aggressive
4. Stereotyped aggressive: hitting, kicking, threatening, disrupting others
5. Non-Stereotyped aggressive: intense breaking, crushing, beating and fighting

VII. COMMUNICATION BEHAVIOR

1. Not talking: not talking to another person or persons
2. Talking to others

APPENDIX G

PROGRAM SERVICE CONTRACT

PARENT-CHILD INTERACTION EXERCISE PROGRAM

P.I.E. Program Service Contract

The P.I.E. program in cooperation with the undersigned agrees to the following:

(1) To provide P.I.E. eligible parents with children attending a pre- or early school program that has been selected for participation in the evaluation of P.I.E., with an equal opportunity to receive one of the following: (a) six P.I.E. workshops designed to train parents in effective parent child interaction and effective use of the P.I.E. book of parent-child activity plans, or (b) the P.I.E. book of parent-child activity plans, or (c) the above program services upon request and following the evaluation of P.I.E.

(2) To keep confidential any and all information that might be obtained by the P.I.E. program regarding the family or children of any parent either requesting to participate or participating in the P.I.E. program.

(3) To provide parents selected to participate in the P.I.E. program upon request a report of the program with such reports to be made available upon completion of the program's evaluation.

(4) To provide those pre- and early school programs having signed the program's support statement, consent statement, and service contract, a report of the program; with such reports to be made available upon request and upon completion of the program's evaluation.

It is understood that to be considered eligible for participation in P.I.E. a parent must be one of 12 or more parents requesting to participate in P.I.E. and its evaluation, and having children attending the same pre- or early school program. It is further understood that these children must be between the ages of 3 and 4 1/2 years old, with this age range being subject to change by P.I.E. It is also understood that a limited number of programs will be selected to participate in the evaluation of P.I.E. and from these programs a limited number of parents will be randomly selected to participate in P.I.E. Therefore eligibility for participation will not guarantee participation. Any questions concerning P.I.E. and its evaluation have been satisfactorily answered.

_____ _____

(P.I.E. Program Director)

_____ _____

APPENDIX H: Table 23, Table 24

Table 23

Mean Squares for Caldwell Analysis of Co-variance

Subtests/Total	df	Treatment (2,62)	Centers (2,62)	Treatment X Centers (4,62)
1. Personal-Social Responsiveness		12.50	16.46	5.63
2. Associative Vocabulary		.75	2.43	1.65
3. Concept Activation-Numerical		1.61	7.79	.75
4. Concept Activation-Sensory		12.00	.39	10.88
5. Total		52.09	34.50	33.35

Table 24

Overall Mean Scores for Treatment Groups and Centers on the Caldwell Test

	Personal Social Responsiveness		Associative Vocabulary		Concept Numerical		Concept Sensory		Total	
	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post
Treatment										
1. Workshop	10.37	13.62	4.50	6.66	5.54	7.41	10.62	14.79	31.04	42.50
2. Written Information	10.38	13.50	4.88	6.84	5.26	7.36	11.42	15.42	31.92	43.04
3. Control	9.86	11.82	4.00	6.45	4.77	6.27	9.86	13.09	28.59	36.64
Center										
1. Public	8.66	11.03	3.53	5.56	4.06	5.50	8.40	12.97	24.63	35.07
2. Private One	11.19	14.19	5.00	7.33	5.14	7.61	11.86	15.43	31.19	48.57
3. Private Two	11.48	14.71	5.33	7.57	6.90	8.57	12.76	15.76	36.57	46.62

APPENDIX I: Table 25

Table 25

Mean Squares for Behavioral Observations
Analysis of Variance

Item	df	Treatment (2,63)	Center (2,63)	Time (17,1071)	Treatment X Center (4,631)	Time X Center (34,1071)	Time X Treatment (34,1071)	Time X Center X Treatment (68,1071)
1. Areas Visited		.54	1.93	.06	.44	.05	.03	.04
2. Posture		1.25	1.17	.29	2.00	.45	.26	.36
3. Motion		.26	6.63	.66	.98	.38	.53	.33
4. Contact		.28	.59	.21	.12	.14	.10	.21
5. Social Behavior		10.21	6.08	.62	4.68	.48	.55	.79
6. Passive/ Aggressive Behavior		.28	.72	.23	.37	.15	.16	.15
7. Talk		.19	.11	.21	.24	.05	.08	.08

APPENDIX J: Table 26

Table 26

Mean Square for Program Use
Analysis of Variance

Item	df	Treatment (1,44)	Center (2,44)	Time (3,132)	Treatment X Center (2,44)	Time X Center (6,132)	Time X Treatment (3,132)	Time X Center X Treatment (6,132)
1. Get-togethers		10.75	51.81	10.13	166.46	6.82	5.17	1.12
2. Games Played		10.88	26.87	5.36	62.65	6.20	15.24	3.25
3. Games Repeated		3.53	8.14	2.93	10.73	4.18	7.25	1.28
4. Games Played Same Day		.00	.28	.11	.77	.12	.04	.17
5. Games Played Same Time		.35	.01	.05	.98	.03	.00	.08
6. Game Length		60.35	1494.28	217.83	3393.76	170.75	91.82	94.00
7. Child Enjoyment		3.56	.06	.11	2.15	.11	.15	.10
8. Child Attitude Change		1.27	.27	.04	.58	.10	.15	.06
9. Parent Attitude Change		1.36	.00	.12	.71	.20	.09	.14
10. Number Playing		9.93	7.37	.34	22.72	1.17	1.39	.47
11. Positive Comments		2.37	.25	.94	14.27	.49	1.70	.46

APPENDIX K: Table 27

Table 27

Mean Squares for Child Awareness
Analysis of Variance

Item	df	Treatment (1,44)	Center (2,44)	Time (1,44)	Treatment X Center (2,44)	Time X Center (2,44)	Time X Treatment (1,44)	Time X Center X Treatment (2,44)
1. Has seen program		1.79	.56	.64	.66	.04	.18	.06
2. Knows program content		.21	.52	.64	1.15	.07	.05	.31
3. Parents play program game		.04	.03	.49	1.39	.10	.10	.08

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