A trial application of the TEACCH program with Turkish children with autism

Bihter Mutlu

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TRIAL APPLICATION OF THE TEACCH PROGRAM
WITH TURKISH CHILDREN WITH AUTISM

A Project
Presented to the
Faculty of
California State University,
San Bernardino

In Partial Fulfillment
of the Requirements for the Degree
Master of Arts
in
Education: Special Option

by
Bihter Mutlu

December 1998
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ABSTRACT

The goal of this study was to investigate whether the TEACCH Program could be effectively applied to Turkish children with autism and to begin implementing the TEACCH Program in Turkey. Four children previously diagnosed with autism and their parents participated in the study. A room at the Association for Support for Mentally Handicapped People in Istanbul was structured as the TEACCH Center. The treatment Program, objectives were identified by pre-assessment procedures, was carried out for a period of seven weeks at the children's home environments by their mothers, and by the researcher at the Center. The study used a pedagogical applied research approach that utilized the mixed procedure of multi case; pretest-posttest design. At the end of the treatment program, an increase in the level of developmental functioning of the children, and a decrease in the inappropriate behaviors and other problematic issues were obtained. Also, a decrease in the family stress was observed. The TEACCH Program was accepted as being effective by the parents. Despite limitations of the design, it was concluded that the TEACCH program could be effectively applicable with Turkish children with autism.
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INTRODUCTION

General Statement of the Problem

The lack of a comprehensive specialized program for children with autism creates a significant need in the field of special education in Turkey. The TEACCH (Treatment and Education of Autistic and related Communication handicapped Children) program was considered to help find the most appropriate method for Turkish children with autism.

The major strengths of the TEACCH program were appraised in the selection process. First, TEACCH is not a single method or technique, rather it is a combination of all needed services and techniques, depending upon the individualized needs of the person with autism. This approach makes TEACCH flexible enough to transport to countries other than the United States.

Second, structured teaching, which has been accepted as the most beneficial intervention strategy in enhancing the development of the people with autism, has been the main approach of the TEACCH program since its beginning. The basic rationale of the use of structured teaching makes TEACCH distinctive from other current approaches to autism.
Third, related to the need of structured teaching, there is an emphasis on underlying causes and the communicative intent of the behavior in the TEACCH approach. Thus, misbehavior, which is a common problem for the children with autism, is managed to a great extent when the need is provided with structure.

Finally, participation of the parents has been acknowledged to be crucial in the education of children with autism. Another strength of the TEACCH program is its acceptance of the parents as "co-therapists."

Transporting the TEACCH program to Turkey seemed quite reasonable, when the above major strengths were considered. Nevertheless, the present study was undertaken to investigate whether it could be effectively applied with Turkish children with autism.
Review of Related Literature

Several different treatment and education procedures have been applied to children with autism. Among those, TEACCH has received recognition based on the effectiveness of its approach to autism.

The primary goal of the Program is "to prevent unnecessary institutionalization by helping people with autism gain autonomy and independence as much as possible over their lives at home, at school and in the community" (Mesibov, 1997). This goal is achieved through the basic philosophy of the treatment program which is shaped by the "culture of autism" approach proposing that people with autism are a part of a group with different common, but not necessarily inferior, characteristics. This approach requires a cross cultural interpretation of the behavior, and cultivation of the skills and interests rather than emphasizing only the weaknesses of the individual with autism (Mesibov, 1998; Mesibov & Shea, 1998).

The method used in the TEACCH program, which best fits the "culture of autism" approach, makes use of the following rationale of the structured teaching method. Because of sensory deficits, individuals with autism might be
overstimulated with the external and internal stimuli which is normal for individuals without autism. This overstimulation leads to a lack of ability to focus on the relevant stimuli. Rather, they may focus on irrelevant information, or they may be stuck on insignificant things. This inability leads to a lack of understanding about what is going on in the environment or how they are expected to behave. This in turn creates a state of anxiety and agitation for people with autism. In fact, it is a normal human reaction in such a situation of unpredictability. This state of anxiety also brings difficulties with any change in the environment (Cox & Schopler, 1992; Mesibov et al., 1994; Mesibov & Shea, 1998; Schopler, 1987; Schopler & Mesibov, 1998; Schopler et al., 1980; Trehin, 1998; Wall, 1990).

This basic rationale is associated with a reasonable solution which makes TEACCH distinctive from other current programs. Functioning of people with autism is reinforced, and misbehavior can be managed, when the anxiety of unpredictability is reduced. This is achieved when their environment is structured and predictable with a minimum of transition, change and undirected time (Wall, 1990). Hence, the two basic efforts in a TEACCH program are "improving
skills for living and structuring the environment and time to accommodate specific deficits" (Trehin, 1998).

The steps of developing the individual treatment program includes several steps. The first step of the TEACCH program is a comprehensive assessment of the individual and his/her family in order to determine instructional strategies depending upon his/her unique needs. PEP-R (Psychoeducational Profile-Revised), which was developed by Schopler and Reichler in 1979 and revised later, is used (Schopler et al., 1980). This profile has a developmental approach to assessment and it can be used with children within the chronological age range of six months to seven years (AAPEP, Adolescent and Adult Psychoeducational Profile is used with the individuals older than 12 years of age). The strength of this assessment is that rather than evaluating a child using only passing and failing scores, it provides a third and unique score called "emerging skills." This kind of scoring gives more detailed information in order to pull out the unique strengths of the child which will develop a more effective individualized program (Schopler & Mesibov in Schopler & Mesibov, 1988).
After the assessment procedure is completed and the needs of the child and the family are determined, the next step is structuring the space and the time (Division TEACCH, 1996; Mesibov, 1997; Mesibov et al., 1994; Mesibov & Schopler, 1988). In a TEACCH program the classrooms are structured by separating and labeling the location of different major activities such as work area, play area, physical education area, lunch area and so on (workshop area, domestic skills area, grooming area, etc. for older students).

On the other hand, overall classroom schedules, which are prepared for each student, are posted somewhere in the classroom so that they can be seen and used effectively. Schedules do not specify the work activities in detail, but show general work times, break times and so on. The details are indicated in the individual work system schedules. Schedules can be written down and scratched off when each activity is finished. For children who do not read or comprehend verbally, schedules can be created by pictures. Once children are finished with a certain picture of the schedule, the picture is put in an envelope, which means the task is completed (Mesibov et al., 1994).
Teaching methods should also be systematized (Mesibov et al., 1994; Schopler et al., 1980). Visual cues should be provided as much as possible. Verbal direction should be as simple as possible at the level of the child's understanding. Tasks to be worked on should be organized from left to right or from top to bottom so that the child can develop a systematic base for completing the task independently. For example, the tasks to be worked on should be placed at the left side of the desk and when the task is completed, the child is taught to place the materials in the "finished basket" located at the right side of the desk.

Structuring space and time constitutes the most crucial requirement of the TEACCH Program, which helps people with autism to develop an individual way of structuring their own environments and time independently, and eventually to have more autonomy and independence in their lives. In fact, this is the primary goal of the Program mentioned at the beginning this section.

Education of the child continues in the home environment. Since the parents' knowledge of their own child is great, their collaboration in teaching the child is considered as crucial for the child's improvement, parents
are accepted as co-therapists in the TEACCH program
(Schopler & Olley, 1980; Short, 1984; Sloan & Schopler,

Research has been an important aspect of the TEACCH
Program since its beginning. Effectiveness of the TEACCH
Program has been demonstrated by several research projects
showing significant improvement of the children and their
families. In a substantial body of research, a few studies
will be reviewed as examples. In the Short (1984) study, the
power of the program was proved by increased appropriate
behaviors of children with autism and increased active
involvement of parents with their children as a result of
the treatment program. In another study TEACCH intervention
was suggested to be effective in enhancing the development
in young children with autism. This study was carried out to
compare a group of children who had the four month TEACCH
treatment with a group who had no treatment. The TEACCH
based home program was shown to be effective with three or
four times greater progress in the treatment group (Ozonoff
& Cathcart, 1988). Another study, which compared the effects
of structured and unstructured teaching methods, showed that
children with autism learned much better with structured
teaching methods (Schopler et al., 1971). A pilot study was carried out with children with autism who had 12 months TEACCH treatment. This study revealed progress in areas of communication, socialization, self-help care, perception, motor activities and cognitive performance (Panerai et al., 1977).

Two research projects that were conducted with Japanese children with autism studied the efficacy of the TEACCH Program. One of them demonstrated the effect of structure on social and behavioral development (Aoyama, 1995); the other illustrated the improvement in the behavior problems of the children (Ono, 1994).

The Marcus et al. study (1978), indicated that even eight weeks of training could make changes in parents’ teaching and child’s functioning with the TEACCH Program. Other research projects suggested that parental stress was reduced with the TEACCH Program (Bristol & Schopler, 1993; Bristol et al., 1993).

Five studies evaluating outcome elements of the TEACCH Program were reviewed (Schopler et al., 1982). These studies were suggested to offer evidence for treatment effectiveness in child behaviors, parent’s teaching, parents’ and
therapists' perception of outcome, and long range outcome as measured by rate of institutionalization.

When its basic rationale, goals, individualized treatment program, and its emphasis on scientific research is considered, the current literature suggests that TEACCH is an effective approach for the treatment and education of people with autism. If the goal is to assist people with autism reach their maximum potential, a comprehensive individualized plan which makes use of structured teaching methods should be essential part of their educational and daily life. This can be accomplished by the TEACCH Program.

Significance of the Thesis

No specialized comprehensive program, developed for children with autism, is effectively applied in Turkey. This constitutes a significant need in the field of special education. The present study will provide a specialized program to help meet this need. Furthermore, it will make a start in applying the TEACCH program in Turkey.
Assumptions

For the purposes of this study, the following assumptions apply:

1. The TEACCH Program is flexible enough to carry over to the countries other than the United States, therefore it may be applicable with Turkish children with autism as well.
2. Children with autism can improve to their highest potential by providing structured teaching methods, because their frustration with unpredictability will be reduced.
3. All children with autism can eventually learn how to work in a structured environment independently.
4. Parents can collaborate to an important extent in the development and education of children with autism.
5. Parents can learn how to work with their children in a period of two months.

Foreshadowed Problems

In investigating the application of the TEACCH Program with Turkish children, several problems were predicted. First, finding the participant families could take more time than expected. This would create the problem of shortening the time for the individualized education program. This in turn would affect the potential improvement of the children.
Second, it was anticipated that the children might not demonstrate their actual performances at the pre-assessment because of a possible anxiety of the first exposure to the procedure. This would effect the accuracy of the starting level of the individualized education plans.

Third, after accepting to participate in the study, mothers might not allocate enough time and effort to work with their children throughout the Program. This would effect the potential improvement of the children and the efficacy of the Program.

Fourth, time constraint was expected as a problem. The study might not be carried out in a three month period of time with all the requirements.

Finally, the lack of enough number of researchers to carry out this kind of comprehensive study would create another problem. Since only one researcher would be in charge of all the things that needed to be done, a possibility of elimination of some procedures was anticipated.
DESIGN AND METHODOLOGY

Participants

Four children, previously diagnosed with autism, and their parents volunteered to participate in the study. Participant families were contacted with the help of the Director of the Association for Support for Mentally Handicapped People in Istanbul, Turkey. All participants were treated in accordance with the Ethical Principles of Psychologists and the Code of Conduct (American Psychological Association, 1992).

Summative Information about the Participants:

F.O.

Demographic Information: F.O. was born in 1994, November 7 and diagnosed with autism about the age of three. He lives at home with his mother (housewife-elementary school education), his father (runs his own textile business-secondary school education), his nine year old sister and his five months old sister.

Developmental, Educational and Behavioral Information: Mrs. O. reported that there were no problems during the pregnancy, but F was born one week late. She thought that
F's autism started as a result of the marital problems that the couple went through when F was one year old.

F has not received any special education. Three months before he participated in the study, he started to attend a kindergarten with children without disabilities. The kindergarten director and the teacher assistants reported that there was a remarkable improvement in F's social functioning after he started attending. According to the researcher's observations at the kindergarten, since F was nonverbal he could not start relationships with friends, but he was always among friends and he learned appropriate behaviors by imitating peers. According to the mother, F's favorite activities were musical toys, Legos, playing in the park and riding in the car.

Problematic Issues: Lack of communication and temper tantrums when his wishes were not accepted were the biggest problems for the mother. Eating and toilet training were other issues for her, since F was using diapers and eating only baby food. As a self stimulating behavior, F was reported to do a behavior of stretching his whole body by leaning onto the side of the couch several times during a
day. Another behavior that bothered the parents was his lip stretching over his teeth for a few seconds.

Z.K.

Demographic Information: Z.K. was born in 1994, January 10 and diagnosed with autism at the age of one and a half. She lives at home with her mother (housewife-university education), her father (doctor-university education) and her four month old brother. Although Z's grandmother lives in her own house, she spends most of her time with the family.

Developmental, Educational and Behavioral Information: Mrs. K reported that there was no problem except high blood pressure during the last month of the pregnancy. She said that Z had normal development until the end of the first year, then she stopped talking and started to display "bizarre" behaviors. After Z was diagnosed with autism, the family went through substantial stress. Mother quit working and the parents visited several doctors and hospitals trying to find a cure for the disability.

At the age of three, Z participated for several months in a one-on-one special treatment at a center for developmental disabilities. Parents stopped the treatment, because they thought that there was no more improvement in
Z's functioning after a few months. During the first introduction of the TEACCH Program, Z was not enrolled in any education. She spent her time by wandering around at home or going out with the mother for outside chores. Her favorite activities were tickling, singing and dancing games with the parents, and playing (not purposeful playing) with her bunny and guitar toys.

**Problematic Issues:** Lack of communication by talking was the biggest problem according to the parents. Other problems were Z's lack of attention, eating—she eats only rice and chicken— and her lack of toilet training. Her eating a certain kind of candy became another issue, since she asked for excessive amounts of candy. Hand flipping was her self stimulatory behavior, which bothered the parents as well.

**Y.B.**

**Demographic Information:** Y.B. was born in 1992, November 27 and diagnosed with autism at three years of age. He lives at home with his mother (retired-secondary school education), his father (worker-secondary school education) and his 14 year old sister who attends high school. His aunt (mother's sister) does not live in the house but spends most of her day time with the family.
Developmental, Educational and Behavioral Information: Mrs. B reported that there was no problem during the pregnancy and she gave birth at the age of 39. Parents went to the hospital when they first realized that Y did not start talking like his peers. Y has been receiving a one hour education weekly for a year, at the hospital in which he was diagnosed with autism. Other than that, he spent most of his time with his mother at home. His favorite activities are swimming at the beach on Sundays, playing at the park and having a car ride.

Problematic Issues: Y's hyperactive behaviors were problematic for the family, but they were controlled with medication, which has been discontinued. His lack of communication and toilet training were the biggest issues for the mother. He used diapers and he not only could not use the toilet, but he did not want to sit on the toilet and threw tantrums if he was forced. Thus, the mother had stopped to give any toilet training. His excessive eating a certain kind of snack was another problem. As for self stimulatory behaviors, Y had a specific kind of whistling and he played with his penis several times a day, which bothered the mother very much.
B.G.

Demographic Information: B.G. was born in 1991, August 15 and was diagnosed with autism at the age of two. He lives at home with his mother (chemistry technician at a hospital-university education), his father (mechanical engineer-university education), his five-year-old sister and his babysitter.

Developmental, Educational and Behavioral Information: Mrs. G reported that she had a medical problem of the lack of enough placenta and glucose during the eighth month of her pregnancy. She believed that that might have caused B's autism.

The mother said that at the age of one and a half years, B used to speak, using about 20 words. When he stopped talking, the parents took him to the doctor for diagnosis. Since then, they have been trying to educate themselves about autism by reading books and trying to translate articles written in English.

B received special education for about one year at the age of four, but the family had to discontinue because of financial problems. If he needs something such as food or drink, he communicates with a distorted speech which the
household can understand. His favorite activities are Legos, playing at the park and taking a car ride.

Problematic Issues: Hyperactivity and the lack of two way communication were the biggest issues for the parents. Also he has a self stimulating behavior of throwing objects through the air and watching them fall on the ground. Parents reported that they had tried but could not prevent him from throwing.

Instrumentation/Data Collection

In the present study the following instruments and materials were administered\(^1\): Psycho educational Profile-Revised (PEP-R)\(^2\) as a pre and post-assessment procedure to identify the children's level of developmental functioning; Informed Consent (Appendix A); Demographic Information Sheet (Appendix B); Child General Information Sheet (Appendix C); Home Observation Rating Sheet (Appendix D); Parental Interview Of the Impact of Child's Problems On Family (Appendix E) and the Sheet for the Ratings of Parent Interview (Appendix G); Weekly Home Activity Program Sheet (Appendix H); Toilet Training Chart (Appendix J); Sheet for Tracking the Child's Spontaneous Communication (Appendix K)\(^3\).
PEP-R:

PEP (Psycho educational Profile), which was first developed by Schopler and Reichler in 1979 and revised in 1990, is an inventory of behaviors and skills designed to identify uneven and idiosyncratic learning patterns. This inventory, an instrument with demonstrated reliability and validity, consists of Developmental and Behavioral Scales. The total 131 items of the Developmental Scale are divided into seven areas: Imitation, Perception, Fine Motor, Gross Motor, Eye-Hand Integration, Cognitive Performance, Cognitive Verbal. The 42 items of Behavioral Scale are divided into four areas: Relating and Affect, Play and Interest in Materials, Sensory Responses, Language. Scoring system of Developmental Items is divided into three levels: P (Passing), E (Emerging) and F (Failing). Scoring systems of Behavioral Items is based on clinical observation and judgement. A child might receive score of A (appropriate behavior) or M (mild inappropriate behavior) or S (severe inappropriate behavior) (Schopler et al., 1990).

Home Observation Instrument:

Home observation was carried out to assess some components of the home environment and the quality of
adult's behavior while working with the children based on the TEACCH requirements. The first five categories of home observation evaluation were adapted from Andrew Short study (1984). The following four categories, which included the major requirements of the TEACCH Program, were created by the researcher. The four rating levels were designed as none, some, quite much and high (see Appendix D).

Parent Interview Instrument:

Parent interview, which was employed from Andrew Short study (1984), was administered to have a better understanding of the problems related to the child's situation. This interview had several questions which were included in six major topics. The interview responses were evaluated in seven categories: Severity of Child's Problem Behaviors; Mother's Emotional Upset; Discord in the Family System; Restriction of Social Involvement; Mother's Understanding of the Child; Parents' Management Skills; and Current Situation. Scoring system were divided into five levels: 0 (No Problem), 1 (Doubtful or Trivial), 2 (Mild), 3 (Moderate), 4 (Severe) (see Appendixes E, F and G).
Questionnaire On the Effects of Treatment:

This questionnaire was employed from Andrew Short study (1984) which adapted from Patterson & Reid study (1973). It was administered to evaluate the effects of the treatment Program according to the mothers' point of view. The questionnaire included 10 items each with five alternatives (see Appendix L).

Data Treatment Procedures

This study will consist of three major sections: Pre-assessment and Individualized Program Development, TEACCH Program Implementation and Post-assessment. Before the pre-assessment procedures, each family was contacted by phone in order to set up the dates for the first introductions during a home visit. During the first home visit, the purpose of the study, information about the TEACCH Program and the requirements of the study, were explained to the families in a one hour presentation. Then the mothers were asked to sign the informed consent forms, and they were asked to answer the items in the Demographic Information Sheet and Child General Information Sheet. Afterwards, Parent Interviews of Impact of Child Problems on Family Functioning (will be later stated as Parent Interviews) were administered. Parent
Interviews would be audiotaped to be coded later, but since it would make the families feel nervous and under pressure, they were not audiotaped. In order to prevent the information loss, interviews were coded right after the home visit.

On a separate day, a half hour Home Observation was carried out. Before the observation started, a package of toys and activities such as puzzles, rings, pull aparts and so on were given to the mothers to work with their children. The researcher did not intervene in the session or interact with the parents or the children and filled out an evaluation sheet during the procedure.

After the first and second home visits were completed, the families were contacted by phone in order to set up the appointments for the pre-administration of PEP-R at the Association for Support for Mentally Handicapped People. Based on the pre-assessment results of PEP-R, basic needs of the children were identified. Based on those needs, goals and objectives for the treatment programs were developed. In order to develop the treatment programs, Individualized Treatment for Autistic and Developmentally Disabled Children, Volume-III- named as Teaching Activities for
Autistic Children was used (see Appendix I for the content of the activities). Needed work activities in Volume-III were translated into Turkish and copied for the mothers. For each child, weekly home activity program sheets showing the numbered activities to be worked on each week were prepared (see Appendix H for an example sheet). In order to deal with the problem of self stimulatory behaviors (such as throwing objects or playing with penis) of each child, strategies were written down and if needed behavioral charts (such as for toilet training) were provided (see Appendix J for an example toilet training chart). Weekly schedule boards were prepared to show the children the extraordinary activities to be done during the week such as getting a haircut, going to the beach or going to the doctor. Picture cards with their Turkish names were supplied for each activity during the work sessions at home and also to be posted on the weekly schedule boards. In addition, sheets for tracking the child’s spontaneous communication were given out to the mothers (see Appendix K for example sheet).

During the time of the preparations and the translation of the needed activities, a large room of the Association for Support for Mentally Handicapped People was structured
as the TEACCH center according to the requirements of the TEACCH program. The areas for each major activity such as work, snack and play area were identified by appropriate furniture and the picture charts showing the location of the activities were posted on the walls of each area. A bathroom picture chart was also posted on the bathroom door.

The activity schedule chart and the finished envelope was posted on the white writing board beside the work area. The picture cards which match the activity areas were posted on the activity schedule chart. The use of the picture cards and the activity schedule chart was like this: During each activity the related picture card was taken out of the chart and placed on the specific spot of the desk, and when the activity was completed, it was placed in the finished envelope. For instance, when the snack time came, the snack card was taken from the activity schedule chart and placed on the desk and when the snack time was over, it was placed into the finished envelope. Then, the picture card of the next activity was taken off the chart.

Procedures of preparations and translations and structuring the TEACCH Center took about a month. Afterwards, the activities of the TEACCH Program were
implemented by the mothers at home and by the researcher at the TEACCH Center through the one-on-one sessions with children. On the first day that the mothers brought their children to the Center, they were informed about the first evaluation results and they were given the first week's home activity programs, weekly schedule boards, picture cards and they were instructed about how to use all the related materials. Children attended the Center for the one and a half hour work sessions with the researcher two days a week for seven weeks. Every week mothers were given the new weekly home activity programs which were prepared according to the skill gained.

A typical session at the TEACCH Center started with the first work activity at the desk which was placed in the work area. During the work activity time, the child and researcher sat face to face at the desk. The assigned activities were placed in a basket which was placed at the left side of the child. The activities were worked on in sequential order and as they were completed, placed in the "finished basket," which was placed at the child's right side. After the work activity time, free play took place in the play area which had a small carpet on the floor and a
basket of toys. During free play, children were encouraged to play by themselves. At the snack time, children's favorite snacks were served in the snack area. Then, the second work activity and the play activity was carried out. The sessions typically ended with a ball activity. In order to teach mothers to work with their children, they were always allowed to watch the sessions.

During the fourth week of the treatment program, a family meeting was organized at the Center. Mothers and fathers were asked to participate. During the meeting, ideas about the ongoing treatment program and improvement were shared. Additionally, the concept of autism and the articles about autism that had previously distributed were discussed. Nevertheless, the most important objective of the meeting was introducing the families to each other and emphasizing the need for being in contact and collaboration with other families.

After the Program was completed, as the final step of the program, post assessment procedures were carried out: PEP-R, Home Observations and Parent Interviews were administered in the same way that they were administered before the beginning of the program. In addition, the
Questionnaire on the Effects of Treatment was administered on the last day of the program.

The study was in the style of a pedagogical applied research that utilized the mixed procedure of multi case; pretest-posttest design (Bogdan & Biklen, 1982 pp.193). A qualitative approach to some quantitative data was included to provide descriptive information and to demonstrate trends in a setting as well (Bogdan & Biklen, 1982 pp113-116).
PRESENTATION OF THE FINDINGS

The presentation of the findings will be interpreted in four categories based on the areas of improvement of the children and the families. In each category, related materials which had impact on improvement and other data treatment procedures will be presented for each child separately.

A) Improvement In the Level of Developmental Functioning of the Children

The level of developmental functioning of the children increased as the result of the program. First, an increase in the PEP-R results is observed. Second, all children showed improvements by gaining skills that were taught by the mothers and the researcher through the weekly activities. In general, at the end of the program, the developmental levels that were identified by the post-assessment of PEP-R were consistent with the levels that the children reached through the weekly activities.

PEP-R Results:

PEP-R results are presented by a cumulative developmental score which is divided into the scores of seven developmental areas. The raw scores can be converted
into the age levels. In order to see the improvements, please first examine the Table 1 which shows pre and post PEP-R results in age levels. As can be seen from Table 1, the increase in the results demonstrated the improvement in the children’s developmental functioning. In the following section, summative interpretations of the results will be presented for each child separately.
<table>
<thead>
<tr>
<th>Name</th>
<th>I</th>
<th>P</th>
<th>FM</th>
<th>GM</th>
<th>EH</th>
<th>CP</th>
<th>CV</th>
<th>DS</th>
</tr>
</thead>
<tbody>
<tr>
<td>F.O.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
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<td>2.6</td>
<td>2.1</td>
<td>2.4</td>
<td>1.10</td>
<td>2.7</td>
<td>1.11</td>
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<td>3.4</td>
<td>3.3</td>
<td>2.0</td>
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<td>3.2</td>
<td>3.7</td>
<td>1.2</td>
<td>.9</td>
<td>1.4</td>
<td>.7</td>
<td>1.4</td>
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<td>Z.K.</td>
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<td></td>
<td></td>
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<td></td>
<td></td>
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<tr>
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<td>.9</td>
<td>1.10</td>
<td>1.6</td>
<td>1.3</td>
<td>.11</td>
<td>1.5</td>
<td>1.4</td>
</tr>
<tr>
<td>Post</td>
<td>2.0</td>
<td>2.6</td>
<td>2.1</td>
<td>1.11</td>
<td>2.3</td>
<td>.11</td>
<td>1.5</td>
<td>1.8</td>
</tr>
<tr>
<td>Impro</td>
<td>.11</td>
<td>1.9</td>
<td>.3</td>
<td>.5</td>
<td>1.10</td>
<td>0</td>
<td>0</td>
<td>.4</td>
</tr>
<tr>
<td>Y.B.</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre</td>
<td>.3</td>
<td>0</td>
<td>1.5</td>
<td>1.4</td>
<td>1.3</td>
<td>.3</td>
<td>1.5</td>
<td>1.0</td>
</tr>
<tr>
<td>Post</td>
<td>.10</td>
<td>1.9</td>
<td>2.1</td>
<td>1.8</td>
<td>2.3</td>
<td>.11</td>
<td>1.5</td>
<td>1.6</td>
</tr>
<tr>
<td>Impro</td>
<td>.7</td>
<td>1.9</td>
<td>.8</td>
<td>.4</td>
<td>1.0</td>
<td>.8</td>
<td>0</td>
<td>.6</td>
</tr>
<tr>
<td>B.G.</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
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<td>1.2</td>
<td>2.10</td>
<td>2.3</td>
<td>3.0</td>
<td>1.6</td>
<td>.7</td>
<td>1.8</td>
</tr>
<tr>
<td>Post</td>
<td>1.10</td>
<td>4.0</td>
<td>3.6</td>
<td>3.10</td>
<td>3.3</td>
<td>1.7</td>
<td>1.10</td>
<td>2.2</td>
</tr>
<tr>
<td>Impro</td>
<td>.9</td>
<td>2.10</td>
<td>.8</td>
<td>1.7</td>
<td>.3</td>
<td>1.1</td>
<td>1.3</td>
<td>1.3</td>
</tr>
</tbody>
</table>

**Note.** Name of the function areas are written in short: (I) Imitation; (P) Perception; (FM) Fine Motor; (GM) Gross Motor; (EH) Eye-Hand Integration; (CP) Cognitive Performance; (CV) Cognitive Verbal; (DS) Cumulative Developmental Score. As an example, an age level of 2.6 shows that F.O.'s age level in the Imitation Area 2 years and 6 months in pre PEP-R.
F showed a substantial improvement when his pretest and posttest results were compared. The discrepancy seemed amazing, however it still could be accepted as reasonable when three conditions were considered: First, F never received any education before, thus education even as short as two months might have worked well. Second, during the implementation of the program, he had been taught with the PEP-R materials as well, therefore the assessment became quite familiar to him. Finally, he might have been nervous during the pre PEP-R and not shown his real potential.

F's cumulative developmental level was 1.10 in the preassessment. It was 3.2 in the post assessment, which demonstrated that he almost caught up to his chronological age level. The improvement which pleased the parents most was in the Cognitive Verbal Area. His level was 1.5 in the pretest, and 2.0 in the posttest. He was nonverbal before the treatment program. The only thing that he did with his lips was making a lip movement like giving a kiss, when asked to do so. After the treatment program, he learned not only to give a real kiss, but also started to talk using around 50 words. Imitation activities and the method of
touching on the lips when asked to say a word was useful for

the start of talking.

Z.K.

Z's cumulative developmental age level was 1.4 in the

pre assessment. It became 1.8, showing an improvement of

four months. Her most remarkable improvement was in the

areas of Perception and Eye-Hand Integration. It was clearly

observed that while her attention focus was at the minimum

level before the Program, it increased in a way that she

could spend much more time on task. The increase in her

attention resulted in the increase in her perception as

well. Additionally, the parents had reported that she could

not understand things she was told before the Program. After

the Program, she could understand what she was told even

without visual cues such as pointing. On the other hand,

while she initially only used her right hand, gradually she

started to use both hands cooperatively on the tasks.

Z's other remarkable improvement was in the area of

Imitation with an improvement of 11 months. However, she

never did show an improvement in the "imitation of the

sounds" activities, even though the parents spent a great

deal of effort on them.
Y.B.

Y's cumulative developmental score was 1 year at the preassessment and it became 1.6 at the post assessment. His highest improvement was in the areas of Perception and Eye-Hand Integration as in Z's case. The increase in the attention focus which resulted the improvement in perception is true for Y as well.

B.G.

In both pre assessment and post assessment, it was felt that B did not show his actual potential. At the pre assessment he was nervous and hyperactive and he could sit at the table for short periods of time only. Throughout the Program, on the days that he did attend his hyperactive behavior was reduced. At these times he could sit at the table until the activities were completed. However, at the post assessment, he was as hyperactive as in the pre assessment. The reason for this may be that the mother forgot to give his hyperactivity medication and additionally, the session was the first one after a vacation break of two and a half weeks. Thus, the researcher had to make interpretations according to his actual level of functioning in the post assessment results. Thus, the
comparison of the two assessment results can not be validly interpreted and the actual improvement was not observed, although improvement during the Program was clearly seen.

Weekly Activities:

As stated earlier, weekly home activities were given out to the mothers for a total of seven weeks. New activity schedules were prepared accordingly as the children gained the skills and passed the activities. The children participated in the activities in the sequential order, which are presented in Appendix I.

Several factors effected the passage of the activities. First, the capacity of the children to learn new skills effected passage rate. For example, F's attention span was higher than the other children, so he spent much more time on the activities. Thus he was given more new activity programs than the others. Second, the amount of time and effort allocated by the mothers affected the results as well. For example, while F's and Z's mothers were eager to teach their children, B's and Y's mothers could not spend as much teaching their children because of several personal reasons.
Tables 2a, 3a, 4a and 5 demonstrate the numbered activities that were prepared for each child in weekly home activity programs. Tables 2b, 3b and 4b demonstrate the starting and the ending activities corresponding to the age levels of the children.
Table 2a. Numbers of the Total Weekly Activities Prepared for F.O.

<table>
<thead>
<tr>
<th>Function Area</th>
<th>1st week 8/5-11</th>
<th>2nd week 8/12-18</th>
<th>3rd week 8/19-25</th>
<th>4th week 8/26 - 9/1</th>
<th>5th week 9/2-8</th>
<th>6th week 9/9-15</th>
<th>7th week 9/16-22</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>1,2,3,4,5</td>
<td>(same program given because of little work)</td>
<td>7,8,9,12,13</td>
<td>17,18,20,21,22</td>
<td>20,22,24</td>
<td>(no program given because of unattendance)</td>
<td>25,26</td>
</tr>
<tr>
<td>P</td>
<td>30,34,35,36</td>
<td>35,36,37,38</td>
<td>37,38,40,41</td>
<td>42,45,46</td>
<td>42,48</td>
<td></td>
<td></td>
</tr>
<tr>
<td>GM</td>
<td>64,68</td>
<td>69,70</td>
<td>74,75</td>
<td>74,75,77</td>
<td>74,77</td>
<td></td>
<td></td>
</tr>
<tr>
<td>FM</td>
<td>97,98</td>
<td>104,108</td>
<td>112</td>
<td>112,114</td>
<td>114</td>
<td></td>
<td></td>
</tr>
<tr>
<td>EH</td>
<td>124,128,132</td>
<td>128,132,133</td>
<td>135,136</td>
<td>136,137</td>
<td>137,139,140</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CP</td>
<td>165,166,167</td>
<td>166,168</td>
<td>-</td>
<td>172</td>
<td>172</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CV</td>
<td>191,192,196</td>
<td>196,197</td>
<td>196,197</td>
<td>197</td>
<td>197</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SH</td>
<td>231,232,236,238</td>
<td>238</td>
<td>238</td>
<td>234,238</td>
<td>234,238</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note. Name of the function areas are written in short: (I) Imitation; (P) Perception; (FM) Fine Motor; (GM) Gross Motor; (EH) Eye-Hand Integration; (CP) Cognitive Performance; (CV) Cognitive Verbal; (SH) Self help.
### Table 3a. Numbers of the Total Weekly Activities Prepared for Z.K.

<table>
<thead>
<tr>
<th>Function Area</th>
<th>1st week (8/5-11)</th>
<th>2nd week (8/12-18)</th>
<th>3rd week (8/19-25)</th>
<th>4th week (8/26-9/1)</th>
<th>5th week (9/2-8)</th>
<th>6th week (9/9-15)</th>
<th>7th week (9/16-22)</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>1,2,3,4,5</td>
<td></td>
<td>1,2,3,4,5</td>
<td>1,3,4,5</td>
<td>3,4,5</td>
<td>3,4,5</td>
<td>3,4,5</td>
</tr>
<tr>
<td>GM</td>
<td>64,66</td>
<td>64</td>
<td>68,69</td>
<td>69,70</td>
<td>70</td>
<td>67,70</td>
<td></td>
</tr>
<tr>
<td>FM</td>
<td>96,97,98</td>
<td>97,98</td>
<td>97,98</td>
<td>97,98</td>
<td>98,104</td>
<td>98,104</td>
<td></td>
</tr>
<tr>
<td>EH</td>
<td>123,124,128</td>
<td>123,124</td>
<td>123,126,127</td>
<td>126,127</td>
<td>126,127</td>
<td>128,132,133</td>
<td></td>
</tr>
<tr>
<td>CP</td>
<td>164,165</td>
<td>164,165</td>
<td>164,165</td>
<td>164,165,166</td>
<td>164,165,166</td>
<td>164,165,166</td>
<td></td>
</tr>
<tr>
<td>CV</td>
<td>191,192</td>
<td>191,192,196</td>
<td>191,196</td>
<td>191,196</td>
<td>191</td>
<td>191</td>
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<tr>
<td>SH</td>
<td>231,236</td>
<td>231,236</td>
<td>231,236</td>
<td>228,234,236</td>
<td>228,234</td>
<td>228,234</td>
<td>228,234</td>
</tr>
</tbody>
</table>

Note. Name of the function areas are written in short: (I) Imitation; (P) Perception; (FM) Fine Motor; (GM) Gross Motor; (EH) Eye-Hand Integration; (CP) Cognitive Performance; (CV) Cognitive Verbal; (SH) Self Help.
Table 4a. Numbers of the Total Weekly Activities Prepared for Y.B.

<table>
<thead>
<tr>
<th>Function Area</th>
<th>1st week 8/5-11</th>
<th>2nd week 8/12-18</th>
<th>3rd week 8/19-25</th>
<th>4th week 8/26 - 9/1</th>
<th>5th week 9/2-8</th>
<th>6th week 9/9-15</th>
<th>7th week 9/16-22</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>1,2,4,5</td>
<td>(same program given because of no work)</td>
<td>(same program given because of only one day work)</td>
<td>(same program given because of no change in child performance)</td>
<td>1,2,4</td>
<td>1,2,4</td>
<td>(No program given)</td>
</tr>
<tr>
<td>P</td>
<td>30,31,34,36</td>
<td></td>
<td></td>
<td></td>
<td>30,34,36</td>
<td>34,36</td>
<td></td>
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<td>123,124</td>
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<td></td>
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<td>126,127</td>
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</tr>
<tr>
<td>CP</td>
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<td>164,165</td>
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<td>191,196</td>
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</tr>
<tr>
<td>SH</td>
<td>231,232,236</td>
<td></td>
<td></td>
<td></td>
<td>231,232,236</td>
<td>231,232,236</td>
<td></td>
</tr>
</tbody>
</table>

Note. Name of the function areas are written in short: (I) Imitation; (P) Perception; (FM) Fine Motor; (GM) Gross Motor; (EH) Eye-Hand Integration; (CP) Cognitive Performance; (CV) Cognitive Verbal; (SH) Self-Help.
Table 5. Numbers of the Total Weekly Activities Prepared for B.G.

<table>
<thead>
<tr>
<th>Function Area</th>
<th>1st week 8/5-11</th>
<th>2nd week 8/12-18</th>
<th>3rd week 8/19-25</th>
<th>4th week 8/26 - 9/1</th>
<th>5th week 9/2-8</th>
<th>6th week 9/9-15</th>
<th>7th week 9/16-22</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>2, 4, 5, 7</td>
<td>(same program was given because of no work)</td>
<td>(same program was given because of little work)</td>
<td>(same program was given because of little work)</td>
<td>(no program was given because of unattendance)</td>
<td>(no program was given because of unattendance)</td>
<td>(no program was given because of unattendance)</td>
</tr>
<tr>
<td>P</td>
<td>30, 35, 36</td>
<td></td>
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<td></td>
<td></td>
<td></td>
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<tr>
<td>GM</td>
<td>70, 74</td>
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<tr>
<td>FM</td>
<td>104</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EH</td>
<td>123, 124, 128, 132</td>
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<td></td>
<td></td>
<td></td>
<td></td>
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<td>CP</td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CV</td>
<td>192, 197</td>
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</tr>
<tr>
<td>SH</td>
<td>238</td>
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</tr>
</tbody>
</table>

Note: Name of the function areas are written in short: (I) Imitation; (P) Perception; (FM) Fine Motor; (GM) Gross Motor; (EH) Eye-Hand Integration; (CP) Cognitive Performance; (CV) Cognitive Verbal; (SH) Self-Help.
F.O.

Table 2b. Age Levels of First and Last Home Activity Given in Each Function Area for F.O.

<table>
<thead>
<tr>
<th>Function Area</th>
<th>First Activity # / Age Level</th>
<th>Last Activity # / Age Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>1 / 0-1 yrs.</td>
<td>26 / 4-5 yrs.</td>
</tr>
<tr>
<td>P</td>
<td>30 / 1-2 yrs.</td>
<td>48 / 4-5 yrs.</td>
</tr>
<tr>
<td>GM</td>
<td>64 / 1-2 yrs.</td>
<td>77 / 3-4 yrs.</td>
</tr>
<tr>
<td>FM</td>
<td>97 / 1-2 yrs.</td>
<td>114 / 3-4 yrs.</td>
</tr>
<tr>
<td>EH</td>
<td>124 / 1-2 yrs.</td>
<td>140 / 3-4 yrs.</td>
</tr>
<tr>
<td>CP</td>
<td>165 / 1-2 yrs.</td>
<td>172 / 2-3 yrs.</td>
</tr>
<tr>
<td>CV</td>
<td>191 / 0-1 yrs.</td>
<td>197 / 1-2 yrs.</td>
</tr>
<tr>
<td>SH</td>
<td>231 / 1-2 yrs.</td>
<td>238 / 2-3 yrs.</td>
</tr>
</tbody>
</table>

F and his mother attended 11 sessions out of 14 sessions at the TEACCH Center and they worked quite hard at home as well. As demonstrated on the Table 2a, out of seven weeks, they worked almost everyday and missed only one week's home activity program. As seen in Table 2b, F started mostly with the activities of the age level of 0 to 1 or 1 to 2 years in all the function areas. Throughout the Program, he gained several skills and passed many activities. In Imitation and Perception areas, he reached the age level of 4 to 5 years. In Gross Motor, Fine Motor and Eye-Hand Integration Areas, he reached the age level of
3 to 4 years. He came to the age level 1 to 2 years in Cognitive Verbal activities. In general, the level that F reached with the home activities is consistent with his level in the post PEP-R results shown in Table 1.

Z.K.

Table 3b. Age Levels of First and Last Home Activity Given in Each Function Area for Z.K.

<table>
<thead>
<tr>
<th>Function Area</th>
<th>First Activity # / Age Level</th>
<th>Last activity # / Age Level</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Same activities given because of slight improvement</td>
</tr>
<tr>
<td>I</td>
<td>1 / 0-1 yrs.</td>
<td>37 / 2-3 yrs.</td>
</tr>
<tr>
<td>P</td>
<td>30 / 1-2 yrs.</td>
<td>70 / 2-3 yrs.</td>
</tr>
<tr>
<td>GM</td>
<td>64 / 1-2 yrs.</td>
<td>104 / 1-2 yrs.</td>
</tr>
<tr>
<td>FM</td>
<td>96 / 0-1 yrs.</td>
<td>133 / 2-3 yrs.</td>
</tr>
<tr>
<td>EH</td>
<td>123 / 1-2 yrs.</td>
<td>166 / 1-2</td>
</tr>
<tr>
<td>CP</td>
<td>164 / 1-2 yrs.</td>
<td>236 / 2-3 yrs.</td>
</tr>
<tr>
<td>CV</td>
<td>191 / 0-1 yrs.</td>
<td>Same activities given because of slight improvement</td>
</tr>
<tr>
<td>SH</td>
<td>228 / 1-2 yrs.</td>
<td></td>
</tr>
</tbody>
</table>

Z and both of her parents attended all of the 14 sessions at the TEACCH Center, and they worked hard at home, too. Out of seven weeks, they worked everyday at home except the first week of the Program. As seen in 3b, Z started with the activities of 1 to 2 years of age level in Perception,
Gross Motor, Eye-Hand Integration and Self Help and reached the level of 2 to 3 years of age. In Imitation and Cognitive Verbal Areas, the same activities were worked on throughout the Program because of slight improvement. Also, similar to the post PEP-R results, which shown in Table 1, she showed the most improvement in Perception and Eye-Hand Integration Area.
Table 4b. Age Levels of First and Last Home Activity Given in Each Function Area for Y.B.

<table>
<thead>
<tr>
<th>Function Area</th>
<th>First Activity #/ Age Level</th>
<th>Last activity # / Age Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>1 / 0-1 yrs.</td>
<td>Same activities given because of slight improvement</td>
</tr>
<tr>
<td>P</td>
<td>30 / 1-2 yrs.</td>
<td>36 / 1-2 yrs.</td>
</tr>
<tr>
<td>GM</td>
<td>64 / 1-2 yrs.</td>
<td>68 / 2-3 yrs.</td>
</tr>
<tr>
<td>FM</td>
<td>97 / 1-2 yrs.</td>
<td>Same activities given because of little work</td>
</tr>
<tr>
<td>EH</td>
<td>123 / 1-2 yrs.</td>
<td>127 / 1-2 yrs.</td>
</tr>
<tr>
<td>CP</td>
<td>165 / 1-2 yrs.</td>
<td>Same activities given because of slight improvement</td>
</tr>
<tr>
<td>CV</td>
<td>191 / 0-1 yrs.</td>
<td>Same activities given because of slight improvement</td>
</tr>
<tr>
<td>SH</td>
<td>231 / 1-2 yrs.</td>
<td>Same activities given because of slight improvement</td>
</tr>
</tbody>
</table>

Y and his mother and his sister attended 12 sessions out of 14 sessions at the TEACCH Center. Unfortunately, his mother was not able to show the same performance with the work sessions at home. Since it seemed burdensome to the mother to work with Y with the home activity programs, Y’s sister took this responsibility for the last three weeks. Out of seven weeks, Y and his sister worked hard only for
four weeks (please see Table 4a). Therefore, mostly the same home activity programs were given because of little work or slight improvement of the child. However, consistent with the post PEP-R results, shown in Table 1, Y improved in Perception and Eye-Hand Integration and Gross Motor Areas (please see Table 4b).

B.G.

Out of 14 sessions at the TEACCH Center, B and his mother (sometimes with his baby sitter) attended nine sessions which is the lowest attendance in the sample. They could not establish a system of time allocation for the home activity sessions, either. Thus, they did a little work with one home activity program for two weeks (please see the Table 5). However, the last week of the program, the baby sitter reported that she worked everyday of that week and B passed all the skills. She seemed eager to continue working, but it was already the last week of the treatment Program.

B) Decrease in the Problem Issues or Inappropriate Behaviors of the Children

As stated in the Introduction Section, according to the basic philosophy of the TEACCH program, there is an underlying need in every inappropriate behavior, and that
these behaviors can be dealt with naturally when the need is met. Besides providing structure and schedule, which meets the need of predictability, the parents were asked to observe their children closely to understand when and why they were demonstrating the behavior. It was designed to give an opportunity for the families to realize that they could understand their children better, if they looked at the behaviors carefully. Additionally, they were told the importance of being clear and consistent in every word that they said and every behavior in which they were involved with their children. Self stimulatory behaviors of the children such as hand flipping or whistling were seen as problematic by parents. A secondary benefit of the project was that as they got more familiar with autism and the TEACCH philosophy, they gradually started to see those behaviors as a part of their children and their autism. Thus, they were no longer seen as problematic by the parents.

In the issue of toilet training, which was a problem issue for three of the children, behavioral charts were prepared. As stated in one of the TEACCH activities, the mothers were given a written strategy for toilet training.
They were asked to carry out every kind of action related to toiletting in the bathroom area, so that the children would understand that the only location for toiletting would be the bathroom.

In general, a decrease in the problematic issues or inappropriate behaviors of the children and an increase in the appropriate behaviors were observed at the end of the treatment program. In the following section, the content of the strategies that were prepared at the beginning of the program related to the inappropriate behaviors of each child will be summarized and the change in those behaviors presented.

F.O.

Other than the lack of communication, according Mrs. O, F's biggest problem was his temper tantrums when his wishes were not met by parents. After she talked about this subject for a while during the family stress interview, it was concluded that F became frustrated, since the parents did not behave consistently. They sometimes followed his wishes and other times refused to do the same wishes. The parents were asked to be simply clear and consistent. Toward the end of the program, Mrs. O reported that F's temper tantrums
decreased dramatically, almost to the point of elimination, since the parents were much more careful in behaving consistently.

Another problem was toilet training. Before the program, F was using diapers. He could sit on the toilet, seemed to know the steps to use it appropriately, but never used it. Toilet training charts and the toilet training strategy were given to the mother. The charts were also used by his kindergarten teacher. At the end of the Program, F gained the toileting skill with no accidents during the day.

In order to diminish his behavior of stretching his body by leaning onto the side of the couch, the parents were asked to draw F's attention to some other interesting activity. At the end of the Program, mother reported that while he used to do the behavior several times a day, it was reduced to two or three times a week. Moreover, he totally stopped the behavior of stretching his lips as well. Additionally, eating problem started to vanish gradually, since F started to eat foods other than baby food by imitating other children in the kindergarten.
According to Y's mother, the reason of Y's playing with his penis several times a day was that Y did not have anything to keep him busy at home. Mother had reported that she did not know how to deal with this problem. When Y started to do the behavior, she had tried to prevent it by pulling his hand or by ignoring. A strategy was written down for the mother related with this issue. Every time Y started to play with his penis, he would be taken to his room and allowed to do the behavior in his room, so that he would learn that the only place to do this behavior would be in his room. The mother was asked to be very clear and consistent with this strategy. At the end of the program, the mother and the sister reported that Y almost stopped doing the behavior, since he did not seem to want to go to his room.

The result of toilet training was not as pleasant as in F's case. Y had temper tantrums when he was forced to sit on the toilet. The mother was given the charts, but she did not use them appropriately. She found a strategy of rewarding Y by washing his feet if he would sit on the toilet. Y never
used the toilet, but he did gradually increase the time of sitting on the toilet from a few seconds to a few minutes.

Also, parents did not know how to deal with Y’s eating of excessive amounts of a certain kind of snack. The mother was offered a strategy of allowing Y to have only certain amounts of snack a day. Also, Y would be shown the remaining boxes of snack every time he was given the snack, so that he would have the sense of “finished” and how many were left. At the beginning, Y threw temper tantrums about the new strategy, but later he became accustomed to this routine.

In addition to the changes in Y’s problem behaviors, an increase in purposeful play was observed. At the beginning of the Program the mother complained that Y never played with any kind of toy. At the end, she was very pleased to say that Y had started to play spontaneously with his toys.

Z.K.

As in F’s case, the skill of toiletting, which was a big issue for Z’ mother, was successfully gained by Z towards the end of the treatment Program. Z started to use the bathroom with all the needed steps, even turning on and off the light.
Eating too much candy was another problem for the parents. In order to deal with this issue systematically, charts were prepared to keep track of certain amount of candy given by the parents. However, it seemed burdensome to use the charts. So the parents simply chose to be consistent by not giving any candies other than using them as reward during the work sessions. Z gradually got used to that system and the problem was solved.

B.G.

According to B's family, the only problem behavior was his throwing objects. As stated earlier, throwing objects in the air and watching them fall on the ground was B's self stimulatory behavior. Family saw this behavior as a problem, since B could not distinguish fragile objects from others.

TEACCH's basic philosophy convinced the parents that this kind of behavior was not bizarre, rather it was a self stimulatory behavior that B had to display as a need. However, the behavior had to be systematized by the family in a way that B could get his need met but at the same time he could be prevented from causing damage. Thus, the parents were asked to allow B to throw around 50 objects (mostly his toys), from a basket, only in his room. Whenever he started
to do the behavior, he would be taken to his room and allowed to throw his toys there. Afterwards, he would be asked to put the objects back in the basket and put the basket away to its usual place. After he would get used to this system, he would be allowed to do this behavior only at certain times of the day. In order to identify the times of the day, the parents were asked to keep a track of the times and the possible causes that started the behavior. With this kind of intervention, B’s throwing behavior would be systematized. The family was explained the importance of being consistent with the strategy.

Unfortunately, the parents could not keep track as they were asked to do and they did not act in a totally consistent way. At the end of the Program, mother reported that B’s throwing behavior changed. He started to take his legos out of their box and threw them back into the box. This behavior change was interpreted that B might have gotten used to the idea of putting the objects back into the basket after he was finished throwing them.

C) Home Observation Results

In order to observe the change in the way that the mothers worked with their children, Home Observations were
administered before the beginning and at the end of the Program (see Appendix D for the rating sheet and the description of the observation categories). In general, a positive change was observed in the way that the mothers worked with their children. In the following section observation results will be interpreted for each mother specifically. These results are also consistent with the results of the related items of the Questionnaire On the Effects of Treatment, which will be presented later.

F.O.

Among all the mothers, F’s mother seemed very eager to work with her child and ready to learn what was needed to teach him best. She was the only mother who prepared a very organized file to keep track of the work sessions at home. In both pre and post observations, Mrs. O used gestural and physical guidance highly appropriately. Her social attendance to her child was high as well. She never used aversive communication. She did not know how to work with her child according to the TEACCH structured teaching method, but she did use some structuring of the materials during the pre-observation. At the start of the program, she did know how to use an appropriate language
with a child with autism. At the end of the Program, during the post-observation, she learned how to structure the materials from left to right and use a finished basket. She also learned how to speak appropriately with her child with short and clear sentences and with visual cues, usually by pointing.

During the time of the pre-observation she was using some indication of near future activities by talking about the next materials to be worked on. At the end of the Program she used the work activity chart during the work session and she also described the following activities by saying, "first we will do this and then that." In accordance, F learned to work with activity picture cards independently. For example, during the post observation, he refused to do the play-doh activity, since its picture card was not posted on the chart in its order. At the center sessions, he started to use the picture cards independently, too. That was a good indication that F learned to work with schedules in a structured environment.

In addition, at the beginning of the Program, the mother had reported that she or the father never informed F about the activities to be done on following days for the
purpose of making him predict the future. Toward the end of the Program, parents learned to inform F about what they would do on following days. Moreover, they got used to using weekly activity chart with the pictures. Mother reported that they used the chart for extraordinary events for F such as haircuts, nail cuts or going to the beach.

As stated in the basic rationale of the TEACCH program (see the Introduction section), as a result of those processes stated above, it was supposed that F was able to predict his future in a systematized way. Thus, he started to have less anxiety about his future and more control over his own actions. Therefore, the problematic behaviors, which might have occurred because of such anxiety, decreased dramatically.

Z.K.

Pre and post-observations were carried out with Z’s mother, but in fact she worked with Z’s father at home during the program. Among all the fathers, Z’s father was the only one who worked with his child at home. Both parents worked very hard with their child.

In both pre and post-observations, Mrs K was highly using verbal, gestural and physical guidance. Her social
attention was high and she never used aversive communication.

She especially improved in using an appropriate language with her child. At the beginning of the program, she did not know how to speak with a child with autism, and complained that Z did not seem to understand anything spoken to her. However, towards the end of the Program, the mother gradually learned to speak appropriately by using short sentences with visual cues and always made sure that she was understood by her child.

In the category of structuring the materials, there was no change. Before she heard about the TEACCH Program, the mother did not know about structuring the materials. She learned it during the first introduction of the TEACCH Program and applied it during the pre-observation as well as the post-observation. The only change was that she was using a finished basket at the post-observation.

There was a slight improvement in the categories of indication of near future and far future activities. At the post-observation, she reported that they rarely used the chart of work activity pictures and the weekly activity chart. She reported that it seemed reasonable to use the
charts, but they somehow forgot to use them. It was supposed that they were only involved with teaching the skills in the activities and it became burdensome to use the picture cards.

Y.B.

Pre-observation was made by Y's mother. However, since she did not want to work with Y because of her personal and emotional problems, Y's sister continued the work sessions at home. During the post-observation the sister was working with Y. Therefore, it is not possible to interpret any change in the mother's teaching. Instead of the mother, the sister worked with Y and became a good teacher. During the post observation, she appropriately used verbal, gestural and physical guidance. Her social attendance was also high and she never used aversive communication. However, she reported that she had not used the work activity chart with the picture cards.

Positive changes were observed in the mother's behavior in handling her child. For instance, although she reported that it seemed hard to speak with her child with short sentences, she used the appropriate language towards the end of the program. Whereas, some aversive communication was
observed during the pre-observation—especially about his behavior of playing with his penis—she learned strategies on how to handle the problem behaviors instead of using aversive communication. In addition, even though she never used the weekly activity chart, she tried to inform Y about the weekly activities. As an example, Y’s haircut had been very problematic for the family, because he had temper tantrums during the haircut. In order to make Y ready for the haircut, the mother talked about it several times before he had the haircut. Finally, Y had no problem during the haircut which convinced the family on the importance of informing a child with autism about the future activities.

B.G.

A similar situation with Y’s case happened with B, too. It was not possible to observe a change in the pre and post-observations, since the mother gave the responsibility of working with B to his baby sitter who lived with the family. Other than that, it was also not possible to observe B and his baby sitter working during the post-observation, since B unusually started to cry and stopped working a few minutes after they started to work. This might have happened because he was not used to the researcher watching them working at
home. However, the use of the structure of the materials properly from left to right and the presence of a finished basket was observed. The baby sitter reported that B became accustomed to working with the activity chart and the picture cards as well. The weekly activity chart was posted on the wall, but mother said that they never used the picture cards except only one card to demonstrate the day of the week every morning. Also the parents reported that they appreciated the idea of using appropriate language, but they could never achieve to use with their child. At the end of the Program, the parents seemed to have somewhat of the idea of applying the TEACCH Program's requirements, but not properly.

D) Decrease in Family Stress

In accordance with the results of the improvement in the children's level of functioning, decrease in problematic behaviors of the children, and mothers' improvement in working with their children and handling the problem situations, a decrease in the family stress was observed in general. In the following section, first a summary of the responses will be presented for the family of each child and then the responses will be interpreted in the coded
categories of the interview (see Appendix E for interview topics and Appendix F for the description of the categories and Appendix G for the rating sheet of the interview).

F.O.

At the pre-interview, the current situation of the family was rated as severely problematic. Besides F’s problem behaviors, Mrs. O complained that the father could not accept the child’s situation and he was in total ignorance of the exceptionality. He did not show love to his son and sometimes even spanked him. He was not a support to the mother. She reported that she also felt upset that F’s sister did not seem to accept her brother’s situation and lied to friends about his situation. Father’s relatives did not understand F’s situation and demonstrated pitiful attitude. Since the father felt shamed by other people’s responses, the family could not go to public places such as restaurants. In addition, mother felt guilty, since she believed that the reason of F’s autism was the substantial marital stress that the parents went through when F was about one year old.

According to the mother’s pre-interview responses, mother’s emotional upset was rated as “severe.” Discord in
the family system was rated as “severe”; restriction of social involvement as “severe”; mother’s understanding of the child as “mild”; and parents’ management skills were rated as “moderate.”

During the time of the post-interview, mother’s stress resulting from F’s situation decreased substantially. The greatest part of the stress disappeared naturally with F’s start of talking and the decrease in the problematic behaviors. Mother reported a positive change in the father’s attitude towards F especially after he learned more about autism with the help of the articles and the discussions in the parent meeting. She said that he had a tendency to show his love to F mostly by giving hugs to him when he came from work. Moreover, after the parent meeting, he never spanked F. The positive change in the father’s attitude resulted in a positive change in the attitude of the father’s relatives as well. Thus, the mother was more willing to socialize with the father’s relatives than before. F’s sister’s attitude also changed. She did not lie about her brother’s situation anymore, and the mother heard her explaining the situation to friends.
All of those positive changes in the family and the improvement of F made Mrs. O much more relaxed and hopeful about F's situation than before. However, she never stopped blaming the father and herself for F's autism, even though she was more informed about the causes of autism.

As a result, the current situation was rated as mild to doubtful or trivial while it had been rated as severe before. Mother's emotional upset was rated as "mild"; discord in the family system as "doubtful or trivial"; restriction of social involvement as "moderate"; mother's understanding of the child and parents' management skills were rated as "doubtful or trivial."

Z.K.

At the first interview, the overall current situation of Z's family was rated as severely problematic. The parents seemed in a chaos. They did not know how to handle her problems. Toilet training, her behavior of asking for candy, and lack of attention were problem issues for the parents. The mother reported that although they believed in education, they had lost hope about teaching her any skill. They started to believe that she could not learn anything.
In addition, the parents had great concerns about her future.

The parents eliminated their social life. They stopped contacting friends and relatives because the mother had a feeling of shame which she did not want to accept. She never told Z's diagnosis to anybody except the grandmother. She tried to rationalize this feeling of shame by saying that she did not want her child to get hurt by other people, and she did not need anybody around her except the grandmother. She reported that she believed in a "miracle" which would make her child "normal" one day.

According to the above responses, the severity of the child's problem behavior was rated as "moderate." Mother's emotional upset was rated as "severe"; discord in the family system was "Doubtful or trivial" (since the parents seemed to be a big support for each other); restriction of social involvement was "severe"; mother's understanding of the child was "severe"; and parents' management skills was rated as "moderate."

During the post-interview, the mother seemed much more relaxed than she had been during the pre-interview. A decrease in the family stress could clearly be observed in
general. Whereas she had responded to the question: "how does the problem make the mother feel?" as "extremely upset" at the pre-interview; at the post-interview, she used words such as being "exhausted" by teaching her child, but she never used a response of being upset. When she was reminded of that fact by the researcher, she was convinced that she was feeling no more upset or distressed but only exhausted by spending all her effort to teach her child. She also seemed convinced that her child could understand or be taught anything as long as it was communicated in a structured and systematized way. Thus, the mother stated that the parents' concerns about her future decreased, since they realized that she could learn and improve with education.

Likewise, mother's attitude towards social relationships related to Z's situation positively changed. She reported that she started to accept that her child had autism and that it was a life long situation. She even started to talk about it with the relatives. She stopped believing in a miracle that would make her child normal and gained more realistic expectations about her future. As
stated earlier, Z's inappropriate behaviors were more controllable.

As a result of those positive changes, the current situation of the family was rated as "mild"; mother's emotional upset as "mild"; discord in the family system as "no problem"; restriction of social involvement as "mild"; mother's understanding of child as "doubtful or trivial" and parents' management skills were rated as "no problem." As a result of the treatment program, the rating of overall current situation of the family changed from severe to mild. This change was interpreted as a success of the Program in terms of decreasing family stress.

Y.B.

The results of the interviews with Y's mother was different from the case of the first two mothers presented above. The current situation of the family stress had been rated as "mild" at the pre-interview. However, it was later realized that was not correct for Y's family. The reason for that inaccurate rating was that the mother had been in a denial stage during the time of the pre-interview. Although the severity of child's problem behavior had been rated as "severe," the mother tried to give the impression that she
had a total control over her child’s situation and oversimplified the stress in the family. She had pretended that she accepted her child’s situation, since she believed that it was her faith and it came from God (In fact, in Muslim religion believing in faith is a requirement). She did not want to mention any stress between her and the father and tried to give a perfect impression of their marital relationship. The mother’s responses in the pre-interview later contradicted her behaviors and responses during the ongoing program. It was realized that the couple had some marital problems. Also, her aversive communication with her children was interpreted as anger towards her children and the father related to Y’s situation. Sometimes she said “I do not know why I got married”; “I do not know why I had this child”; “I actually do not like children.” Once, she blamed the doctors, because she had been told it would be good to give birth as a cure for her gynecological problems, although she did not want another child. At the beginning of the Program she stated that she was ready to do anything to teach her child, but it became a burden for her to work with Y on the assigned activities. Then she made a
deal with Y’s sister that if the sister worked with Y until the end of the Program, she would buy a present for her.

During the treatment Program, the mother became convinced that her child could improve in small steps with the help of special education. Thus, her stress decreased to some extent. She was pleased by seeing that Y could sit on the toilet, while he previously had a hard time even going into the bathroom. She realized that Y started to play with his toys spontaneously. She became more relaxed by seeing that she could find a way to deal with his inappropriate behaviors such as playing with his penis or eating too much snack. On the other hand, it was supposed that there was no change in the discord in the family system.

As a result of the above changes, the current situation which had been rated as “severe” before was rated as “moderate” at the end of the Program. Mother’s emotional upset was rated as “mild”; discord in the family system as “doubtful or trivial” (since the discord was not caused by the child); restriction of social involvement as “moderate”; mother’s understanding of the child and parents’ management skills were both rated as “mild.”
B.G.

In B’s case, the mother had been experiencing depression related to herself and her marital relationship, but it was supposed to be partially related with the situation of the child. This incident did not change throughout the Program. The mother seemed pleased about the increase in B’s talking and the decrease in his throwing behavior. However, during the Program she realized the fact that she could not establish a system in the family life to allocate enough time and effort to teach her child. Furthermore, since it was time for B to start school, she had the stress of finding the most appropriate school for him. Both of those issues made the mother feel more distressed than before. Therefore, mother’s emotional upset was rated as “severe” whereas it was rated as “mild” before.

During the pre-interview, discord in the family system and restriction of social involvement were rated as “moderate”; mother’s understanding of the child as “no problem”; parents’ management skills were rated as “mild.” No change was observed in these categories during the post interview. No change in B’s family was an expected result,
since the mother could not spend much time and effort in applying the treatment Program at home.

E) Effectiveness of the TEACCH Program According to the Mothers:

In this section, the responses to the Questionnaire On the Effects of Treatment will be presented for each mother (see Appendix L for the example of the questionnaire).

F.O.

In every item of the questionnaire, F’s mother circled only the alternatives showing the treatment program was effective. Specifically, she responded that as a result of her involvement with the TEACCH program, her child improved markedly; seemed much happier at home; communicated much more than before; he was much more responsive to her; played like a normal child much more; did unusual things much less; she had a much better understanding of her child; she felt much more comfortable with her child; and the family had begun to function slightly better. Those responses were totally consistent with her responses at the post-interview.

Z.K.

The responses of Z’s mother showed positive changes in every item of the questionnaire and they were also
consistent with her responses at the post-interview. Specifically, she responded that as a result of her involvement with the TEACCH program, her child improved slightly; seemed slightly more happy at home; communicated much more than before; she was much more responsive to her; played like a normal child slightly more; did unusual things slightly less; her family had begun functioning slightly better; she felt slightly more comfortable with her child; she had slightly better understanding of her child; and she was a slightly better teacher of her child.

Y.B.

As a result of her involvement with the TEACCH program, Y's mother responded that her child improved markedly; seemed slightly happier at home; communicated much more than before. He was slightly more responsive to the mother; played like a normal child slightly more and did unusual things much less. Her family had begun functioning much better; she had a slightly better understanding of her child; she felt slightly more comfortable with her child and she was a better teacher of her child.

Even though the interview results in terms of family stress did not change considerably, Y's mother gave more
positive responses to the questionnaire than was expected. This inconsistency was interpreted as an over appreciation of the effectiveness of the treatment Program.

B.G.

Controversial results occurred with B's mother as in the case of Y's mother. A few of her responses contradicted the actual situation and her responses at the post-interview. For instance, she responded that she felt much more comfortable with her child; and she was a slightly better teacher of her child. However, these results were not found in the interview results. Moreover, her response of no change in the unusual things which her child did also contradicted her responses about the decrease of B's throwing behavior.

The responses which were consistent with the actual situation, as a result of her involvement with the TEACCH program, were that her child improved slightly; seemed much happier at home; communicated much more than before; he was much more responsive to her, and played like a normal child much more. Additionally, there was no change in the family functioning.
In regard to the mothers' responses in general, it can be concluded that the TEACCH program was assumed to be effective. The changes in the attitudes in the families and the improvement of the children were supposed to be a result of the TEACCH Program.
LIMITATIONS OF THE DESIGN

The present study was limited by time constraints. One of the main goals of the TEACCH program is to make the individuals function independently. Evidently, two months of education is not enough to help children gain independent working skills with the schedules. However, even in such a short time of three months, several improvements were achieved in the level of functioning of the children and families. Thus, it is likely that the TEACCH Program could be much more effective over a longer period of time. As a matter of fact, at least one year is needed in order to assess the improvements of children and changes in the families.

Another limitation of the study comes by the nature of the design. Since many factors might have effected the results of the study, it is hard to specify the outcomes of the treatment program.

The lack of enough number of researchers to carry out this kind of comprehensive study can be accepted as another limitation. Only one researcher was in charge of all the things that needed to be done. This limitation created several other limitations as well. First, the interpretation

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of the results can be assumed to be subjective since they were interpreted by only one person. In order to prevent this kind of a subjectivity the interviews could be rated by a second person. Second, the presence of more researchers would have allowed videotaping to observe the children’s improvement in working with the structured teaching method. Third, more researchers would be better to take charge of the education of the mothers. That would allow more home observations and give more feedback about their working with their children. Furthermore, more meetings could have been organized to discuss autism and parental attitudes towards understanding and handling their children.
CONCLUSION

Despite of the limitations of the design, improvements in the level of developmental functioning of the children and a decrease in the inappropriate behaviors were achieved as result of the TEACCH Program. Parents had a better understanding of their children. Two of the mothers learned to teach their children better. In accordance with those results a relative decrease in the stress level of the families were also observed. In addition, the TEACCH Program was accepted as effective by the parents. Therefore, it was concluded that the TEACCH Program can be effectively applied to Turkish children with autism.

In addition, at the end of the Program, the researcher was educated in how to prepare a TEACCH program for Turkish children with autism. Also, it was a good opportunity for a beginner to learn how to deal with the parents and other professionals in the area, to inspect the potential problems and steps to be taken in special education in Turkey, and to observe the cross cultural differences in the attitudes towards exceptional children.
RECOMMENDATIONS FOR FURTHER RESEARCH

In order to compensate for the limitations of the present study, several recommendations can be proposed for further research. First, it should be carried out by more researchers in at least a one year period of time. Second, videotaping of the work sessions is needed to identify the children’s improvements in working with the structured teaching method. Third, it is hard to make generalizations about the results of the study because it was a qualitative case study. Thus, carrying out this research with a more students and applying quantitative designs is needed to obtain more objective results.
APPENDIX A

INFORMED CONSENT

The study in which you are about to participate is designed to investigate whether TEACCH (Treatment and Education of Autistic and related Communication handicapped Children) program can be effectively applicable to Turkish children with autism in order to make a start in applying the TEACCH program in Turkey.

This study is being conducted by Bihter Mutlu under the supervision of Dr. Carolyn Eggleston, PhD, Ann Vessey and Pam Bender. This study has been approved by the Institutional Review Board of California State University San Bernardino.

Before the study starts, in order to get to know your child and the effects of his/her autism on the family, you will be visited by the researcher at home. An introduction presentation, an interview, and a behavior observation will be held (This home visit will be reapplied at the end of the study).

In the first section of the study, your child will be evaluated with PEP-R (Psychoeducational Profile Revised) in order to define the current developmental and behavioral
functioning to develop the individualized treatment and education program based on the needs of your child. After the assessment procedure is completed you will be informed about the evaluation results. The treatment section of the study will last two months after individual programs are developed for each child participating in the study. It will be carried out in one room of the Association for Mentally Handicapped People, which will be prepared as the TEACCH Center, and also in your home environment with you. TEACCH Center will be structured by defining the location of the major activities (such as play, work or snack area). Individualized program will consist of scheduling the daily work and play activities of each child based on his/her individual needs. Your child will attend the center at least two times a week based on his/her weekly schedules. At the beginning of the program he/she will have one-on-one treatment. As he/she gets used to the structure of the program, he/she is assumed to start to work independently so a classroom environment will be created later by the participation of all children at the same session. During every session, charts based on the individual schedules of the children will be prepared for data collection. This is
done to evaluate the children's functioning in a structured environment and their ability to work independently using their schedules. Since the parents are accepted as co-therapists in the TEACCH program, you will be informed about how to structure the home environment and how to work with your child in preparing schedules. After the treatment program is completed, your child will be re-evaluated using PEP-R.

Please be assured that any information you provide will be held in strict confidence by the researcher. At no time will your name be reported along with your responses. At the conclusion of the study, you may receive a report of the results.

Please understand that your participation in this research is totally voluntary and you are free to withdraw at any time during this study without penalty, and to remove any data at any time during this study.
I acknowledge that I have been informed of, and understand, the nature and purpose of the study, and I freely consent to participate and let my child participate. I acknowledge that I am at least 18 years of age.

Participant Child’s Name

Participant’s Signature Date

Researcher’s Signature Date

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APPENDIX B

DEMOGRAPHIC INFORMATION SHEET

Child Name:

Mother Name:
   Education:
   Job:
   Phone #:

Father Name:
   Education:
   Job:
   Phone #:

Home Phone #:

Home Address:

Family Monthly Income:

Sibling Name and Age:

Other Family Members At Home:
APPENDIX C

CHILD GENERAL INFORMATION SHEET

Child Name:           Male/Female:
Birth Date:           Age:
Height:              Weight:

Pregnancy and Birth Information:

Developmental Information:

Diagnosis:
First Diagnosis Date: By who:
Child's favorite toy:
Child's favorite food:
Things that the child does not like to do:
Food that the child does not like to eat:
Which activity that you do with your child makes him/her laugh?

Parents' expectations:
APPENDIX D

HOME OBSERVATION RATING SHEET AND DESCRIPTION OF THE CATEGORIES

1) Verbal Guidance:
   none    some   quite much   high

2) Gestural Guidance:
   none    some   quite much   high

3) Physical Guidance:
   none    some   quite much   high

4) Social Attention:
   none    some   quite much   high

5) Aversive Communication:
   none    some   quite much   high

6) Use of Structure of the Materials:
   none    some   quite much   high
      - All materials are ready:
      - Working from left to right:
      - Finished basket:

7) Use of Appropriate Language:
   none    some   quite much   high

8) Indicating Near Future Activities:
   none    some   quite much   high
      - Use of picture cards:

9) Indicating Far Future Activities:
   none    some   quite much   high
      - Use of weekly activity board:
Description of the Categories:

There are three basic types of adult behavior categories: the three guidance categories, social attention, and aversive communication. The guidance categories refer to adult behaviors which facilitate the child's task performance. Social attention refers to other actions an adult performs that are directed at the child.

1. **Verbal Guidance**: This category is defined as the degree to which adults use verbal communication to actively structure the child's activity. Verbal aid or prompts facilitating the child’s performance, instructions and immediate feedback in the form of praise or corrections are included in this category regardless of whether the child responds to adult’s actions.

2. **Gestural Guidance**: This category is defined as the degree to which adults actively structure the child's activity by means of gestures and visual demonstration. The adult may perform actions which are an attempt to facilitate through visual displays the child's performance of a task. The category should be evaluated regardless of whether or not the child responds to the adult's actions.
Examples include the use of sign language and simple gestures such as pointing. They also include the adult's performing the task as a demonstration for the child (if such a demonstration involves the manipulation of materials) or handing the child materials or putting them in front of the child, indicating that the child is to do something with them.

3. **Physical Guidance**: This category is defined as the degree to which adults actively structure the child's activity by physically manipulating the child in an attempt to facilitate his performance of a task.

Examples include the adults guiding the child through a response or physically managing difficult behavior which is interfering with a task that the adult wants the child to perform. The latter might include turning the child's head towards the adult or some materials or holding the child's hand to prevent self-stimulatory behavior. It may also include moving the chair a child is sitting in to facilitate his performance.

4. **Social Attention**: This category is evaluated for any deliberate physical contact made by an adult with the child (placing a hand on his shoulder, hugging him),
verbalizations directed to the subject ("Bob, how are you?") and mutual looking at each other entailing recognition demonstrated through other non-verbal cues (smiling and/or being smiled at, and other mutual changes in facial expression).

5. Aversive Communication:

Definition of aversive:

a) Aversive because of content:

1) The instruction contains a threat of punishment or unpleasant consequences to the child. ("Stop that, or you'll go to your room.")

2) The instruction contains ridicule. ("You can't do anything right, give that pencil")

b) Aversive because of voice quality:

1) The instruction is spoken loudly or shouted.

2) The instruction is spoken in a "threatening" voice which may be high-pitched or low and measured as if the speaker is exercising "control."

c) Aversive because of the assertive behavior of the speaker:
The instruction is accompanied by grabbing the child, pushing the child aside, striking him/her, grabbing the object concerned, etc.

d) If the above criteria exists as mock or playful, the instance is not considered aversive.

6. Use of Structure of the Materials: This category is defined as the degree to adult's structuring the materials according to the following requirements:

- **All materials are ready**: All materials should be ready before the work session starts and they should be located at the left side of the child, so that the child will know what materials will be worked on.

- **Working from left to right**: Materials should be worked in a direction from left towards the right of the child. For example in a "stacking the block activity", the blocks are placed on the left side of the child. So, the child knows how many blocks he/she has to stack. Then, the stacked blocks are placed in the finished basket which is located at the right side of the child.

- **Finished basket**: A finished basket is located at the right side of the child and it is used appropriately after each task is completed.
7. **Use of appropriate language:** This a category of a broad evaluation of the adult's general use of language a the child with autism not only during the work session, but also in daily life. The category is evaluated according to whether the adult uses a language modified by short and clear sentences [e.g., "Would you bring me the pretty book" (spoken as a command) becomes "Bring me the book"; "Put this piece in the right hole" becomes "Put it in"] and by using visual cues such as pointing out the object that is spoken about.

8. **Indicating Near Future Activities:** This category is defined as adult's indication of the following activities to be worked on during the work session. This can be done either by informing the child about the following activities such as "next, blocks", or by the use of the picture cards of each activity from the work activity chart.

9. **Indicating Far Future Activities:** This is a category of a broad evaluation of the adult's general attitude of informing the child about the weekly activities in order to give an opportunity to predict his/her future. This can be done by either mentioning the weekly activities such as "you will have haircut on Wednesday" or additionally by using the
picture cards on the weekly activity board such as posting the "haircut picture card" on Wednesday column of the board.
APPENDIX E

INTERVIEW TOPICS

Nature and severity of child's behavior
What specifically does the child do that is problematic?
(Ask for examples from past week)
How often does the behavior occur? (How often last week? Is that typical?)

Family contexts in which the problem has an effect
Times at which problem arises?
When is it most problematic?
Individual family members affected?
Accommodations to problem by the family?
In other ways does the problem make things difficult in the home?

Effects on the interface between the family and society
Does the problem make it difficult for family to get out more?
How well do outsiders understand child's problem?
Does problem affect the availability of babysitters?
Is one or both parents' activity restricted?
(Social or work)
Do the parents avoid bringing visitors to the home due to the child's problem?
What was the family's social life like before the child was born?

Effects to deal with the problem
What does mother think the best way to handle the problems?
What other things did they try?
What do other family members think? (especially father)
What in fact happens? (Have her describe a recent incident)
What does she think is a reasonable expectation of the child in the problem area?
Emotional reaction of family members (especially mother) and conflicts among family members

How does problem make mother feel?
How does it make other family members feel?
Does mother sometimes feel she is responsible for problem?
How does father help mother deal with child's problem?
(emotional and practical support)
Are child’s sibs jealous of the attention she gets?
In what other ways does problem cause conflicts in the family?

Mother’s understanding of child’s problems

What does mother see as the reason for the child’s problems?
What does mother consider to be the child’s main strengths and weaknesses?
APPENDIX F

DIMENSIONS AND RATING OF PROBLEM SEVERITY AND IMPACT

The rating scale which follows is an attempt to cover under seven headings many ways in which a child with disabilities might have a negative impact on the family’s functioning. Under each heading are examples of issue that are relevant to the heading. The task of the rater is to assign a rating of the degree of severeness of the type of problems under a given heading to each family.

The ratings will be made on a 0-4 scale with "0" indicating "No problem" and "4" indicating "severe problem." Examples of degrees of problems fitting each level are given.

Because the scale attempts to cover broad areas of family functioning and each family will have unique problems, it is impossible to list examples for all the possible problems that fit under each heading or to list all the degrees of problems calling for a given rating of severity. Therefore, the rater should use the examples as guidelines for adapting other problems to the scale. Further none of the specific problems given as examples need be
present to make a given rating of severity, assuming other problems seem to be comparable to the examples listed.

Ratings of the severity may involve either a single issue or several. A moderate rating, for instance, could involve one fairly serious problem or several problem or several problems which, if viewed individually, would not be considered serious.

1. Severity of Child’s Problem Behavior: This is a rating of the child’s problem behavior itself apart from the family’s response to it. It should be made on two parallel dimensions with the main emphasis being on one or the other depending on the nature of the problem: a) the degree to which the behavior is difficult to handle or noxious and b) to which it is maladaptive for the child, either in the sense that it marks a maladaptive pattern itself (e.g., refusal to interact with others). Although this rating is to be made from the mother’s description of the child’s behavior, the rater should attempt to make this judgment as independently as possible of the mother’s perception of severity. The child’s behavior should be compared with that of other children that the rater has known with similar problems to
help in developing a framework within which to rate severity.

To assess a difficult or noxious behavior, raters should consider the frequency and intensity of the behavior. They should also make a judgment of the degree to which the behavior is in fact difficult to handle and offensive. For example, frequent and intense hand flapping should be rated as less severe than frequent and intense tantrums.

To assess deviations from, or interference with, adaptive behavior, rater should be mindful of a range of types of behaviors, including those involved in self-help tasks, social interaction, and developmental learning. Adaptive deficits should be evaluated in terms of their importance in the child's daily life and the extent to which they deviate from age appropriate behavior.

In the following examples of ratings, ideas will be presented concerning ratings for both (a) difficult and (b) maladaptive behaviors.

0 - No problem - The child exhibits neither (a) difficult nor (b) maladaptive behavior in the identified problem area.
1 - Doubtful or trivial - (a) The child occasionally exhibits difficult behavior but it is so rare or mild as to be of little concern; (b) The child shows adaptive deficits but they are only marginally important or only slightly deviant, and are not likely to have a significant effect on this overall adaptive functioning.

2 - Mild - (a) The child at times exhibits difficult or noxious behavior, that is clearly more severe than what would be expected of a normal child; (b) The child shows a significant deficit in adaptive functioning although he may have a good deal of functional skill in the deficit area.

3 - Moderate - (a) The child regularly exhibits difficult or noxious behavior; (b) The child's adaptive functioning is very limited in a given area. Alternatively, his adaptive functioning in several areas may be more mildly impaired by the identified deficit.

4 - Severe - (a) The child exhibits difficult behavior at a high rate each day; (b) The child shows no adaptive behavior in some important area of functioning or shows severe deficits in several areas stemming from the identified problem.
2. **Mother's Emotional Upset**: This is a rating of the extent to which the mother is emotionally upset by the problems of the child. The mother may be anxious or depressed about the child's behavior, or feel guilty thinking that she has caused it. She may get angry at the child. She may be frustrated and feel incapable of handling her child. It is also possible that a mother takes special pride in her ability to provide for her child. This rating will be made primarily from the mother's description of her own feelings. However, you should also pay attention to the way she talks about the problem and the way she presents her feelings. You will get clues concerning nature of her emotional involvement as she discusses the occurrence, and her handling of the problem. For instance, she may spend much time and energy applying a futile and frustrating management technique, yet deny that she is particularly concerned with a problem. In such a case, you should judge the degree of upset as best you can in spite of her denial. The same principle applies to cases where the emotional tone of the mother's description contradicts the content of what she is saying. An extreme example of this would be a tense, tearful woman stating that her child's problem "isn't too bad."
will be best for purposes of accuracy if you rely primarily on what a mother says her feelings are, keeping in mind the need to adjust your rating when the mother's account does not appear to be accurate.

0 - No problem - The mother does not appear to be unusually upset by the child's problems. She may appear to derive emotional strength from her handling of the problems.

1 - Doubtful or trivial - The mother may feel that the problems are a nuisance. She occasionally worries about them but is generally not concerned about them.

2 - Mild - The mother is definitely worried about the problems. She may be occasionally anxious or depressed about them. At times she may become very angry with the child over the problems. She may also feel hurt by the child's behavior, taking it as a personal response to her.

3 - Moderate - The mother may often be anxious or depressed about the problems. She may be frequently angry with, or feel hurt by the child. Her feelings may significantly affect how she handles the child.

4 - Severe - The mother is herself impaired in her functioning in response to her emotional involvement with
the child. She may, for instance, be very bitter towards the child, or feel hopeless, incompetent, or guilty.

3. **Discord in Family System** - This refers to the degree to which conflict, lack of support, or isolation, occurs among family members as a result of, or in reference to, the child's problem. Such discord can occur in any sub-group of family members, although you should not include conflict between the mother and the child with the problem in your consideration of this rating. (This is because conflict in the mother-child subsystem should be reflected in either "severity of the child's problem behavior" or "mother's emotional upset.") Examples of evidence of conflict in the family system include: (1) conflict between the parents over how to handle the target problem or other aspects of the child's behavior; (2) verbally expressed jealousy of the problem child due to the special attention accorded the child with the problem; (3) other conflict between the problem child and his sibling(s) resulting from the behavior of the former. Discord may also take the form of distance between family members. Examples include: (1) the mother's complaining that her husband does not help her deal with
their difficult child (3 - moderate); (2) the mother's stating the difficult child is her responsibility and that her husband has very little to do with the child (2 - mild); (3) siblings withdrawing from family interactions apparently in response to the central focus being placed on the problem child. As with "mother's emotional upset", you will have to rely primarily on the mother's report of the presence and severity of conflict, and adjust your rating according to your reading of the situation. In this category, you will need to synthesize more diverse information since evidence of conflict can arise at any point in the interview and can refer to different persons and situations. In making this rating, give the most weight to the most serious conflict discussed. A single conflict can be great enough in itself to earn a rating of "4." However, several smaller conflicts should be considered cumulative also, possibly earning a "4" if the total effect on the family is sufficiently serious.

0- No problem - There is no evidence of conflict between family members concerning the behavior and management of the problem child.

1- Doubtful or trivial - Parents may disagree on how to handle the child but are able to resolve these differences
and achieve unity and consistency in their handling of the child. Siblings may occasionally become upset with the problem child or with their parents in relation to the child, but are able to resolve these feelings quickly. The father or siblings may tend to take a secondary role in the family in relation to an intense relationship between the mother and the problem child.

2 - Mild - Parental disagreement over the handling of the problem child results in each handling the child in a different way, or in one of the parents restricting his/her interaction with the child. Siblings may have repeated conflicts with the problem child or their parents, which, although not the source of much emotional stress, reflect an unresolved or problematic issue. Other family members may take a clearly secondary role in relation to the interaction of one of the parents and the problem child.

3 - Moderate - This rating may consist of some of the same type of interactions as "2 - Mild". However, to be scored 3, the interactions must be the source of either ongoing tension between family members or a rigid separation of roles which tends to isolate family members (particularly spouses) from one another. For instance, a husband may
frequently criticize his wife's handling of their child. On the other hand, he may have "given up" and turned the full responsibility for handling the child over to the mother. Siblings may regularly express negative feelings about the problem child. Finally, this rating may also be made if there are several conflicts of the type described as mild, and these appear to have a significant overall effect upon the family.

4 - Severe - Conflict between the parents concerning the problem child is seriously affecting their marital relationship. Conflict with the problem child or with their parents concerning the problem child may be a significant ongoing emotional issue for the siblings. Family members may be emotionally isolated from each other and unsupportive of one another's attempts to deal with the problem child.

4. Restriction of Social Involvement - This refers to the extent to which the family, or some part of the family, is restricted in their social activity because of the problem child. Parents may not go out in public, with the child because they are embarrassed about his behavior. They may be unable to go out alone because they are unable to find a
babysitter due to the child's special problems. Family members may avoid bringing friends home because they are embarrassed about the problem child. Caring for the problem child may restrict work or social activities of one or both parents. The social activities mentioned above may not be impossible, but simply difficult because of the child's problems.

0 - **No problem** - The child's problem has no effect upon the family's social life.

1 - **Doubtful or trivial** - The child's problem behavior may occasionally be an issue in the family's interaction with people outside of the family but this rare and is not a factor in the family's planning for activities.

2 - **Mild** - The family occasionally finds the child's behavior difficult in social situations. They are restricted in their planning of social activities significantly more than are families of normal children. They may be able to get babysitters occasionally but not regularly. Siblings may occasionally be embarrassed by the problem child's behavior.

3 - **Moderate** - The family often finds the child's behavior difficult in social situations. Certain activities which the family might like to engage in are impossible.
because of the child's behavior. They may almost never be able to get a babysitter. People may occasionally act as if there is something wrong with the family since they have a child who seems strange.

4 - Severe - The family may rarely go out together as a result of problems with the child. Family members may feel that they are the object of scorn or ridicule. One or both parents may be restricted in the type of work they can do because of the special problems of the child (as opposed to the normal burdens of raising children). The problem child may be an ongoing source of strain between siblings and their friends.

5. Mother's Understanding of Child - This is a rating of the accuracy of maternal perceptions concerning the nature of their child's disabilities and behavior problems, as discussed in the interview. Use the discussion of the specific problem(s) in conjunction with the information you are given on the child to make this rating. You should consider any of the mother's views concerning the causes of her child's behavior, the nature of his disabilities and problems, and the future of her child. Because of the nature
of the interview, you will usually have to make your judgment primarily on the basis of her understanding of the nature of present problems.

0 - **No problem** - The mother appears to have a good understanding of almost all aspects of her child's problems.

1 - **Doubtful or trivial** - The mother appears to have a fairly good understanding of her child's problems. She may have some minor misconceptions about his abilities or selected skill areas. She may be confused about a particular diagnostic label, but her practical understanding of the child is good.

2 - **Mild** - The mother knows that the child is functioning poorly in some area (e.g., intellectual, behavioral) but does not understand the significance of this fact. She may expect the problems to clear up more easily than is likely. Her expectations of the child are sometimes unreasonable. On the other hand, she may underestimate to some extent what her child is capable of in her discipline and expectations for the future.

3 - **Moderate** - The mother knows that her child's behavior is unusual but credits him with skills and knowledge clearly beyond his level of functioning. She may
express a good deal of uncertainty about what is wrong with the child and what he can or cannot do. Her expectations of the child may often be unreasonable, or she may grossly underestimate his abilities.

4 - **Severe** - The mother views a child with clearly problematic development or behavior as normal. Alternatively, she may report complete confusion over the child's condition and diagnosis. Finally, she may expect nothing of a child for whom progress is possible.

6. **Parents' Management Skills** - This refers to the extent to which the parents are effectively coping with the problem. In making this rating, you should consider the optimal solutions for a given problem, taking into account the severity of the problem and the likelihood of its being fully eliminated in the short run. If this is likely, do the parents seem to be pursuing a course which will accomplish this? If not, are they engaging in a strategy which will best minimize the problem? Is their solution to the problem one that disrupts the family's functioning as little as possible? Is their solution likely to be long lasting?
0 - **No problem** - The parents are making appropriate attempts to deal with the problem which are likely to be maximally successful, given the nature of the problem.

1 - **Doubtful or trivial** - The parents are making good attempts to handle the problem, but may be allowing the problem to have a slightly more disruptive effect on the family than is necessary.

2 - **Mild** - The parents are making some attempts to deal with the problem but do not have sufficient management skills to deal with it with consistent effectiveness.

3 - **Moderate** - The parents have tried to handle the problem but their attempts are either ineffective or else require a significant disruption of family functioning to be carried out. Their efforts are likely to produce short-term gains only, where long-term gains seem to be possible instead.

4 - **Severe** - The parents may be resigned to the problem. Their solutions may be as disruptive to the family as the problem itself.

7. **Current Situation** - This is a rating of your overall impression concerning the adjustment of the family to the problems present by the psychotic child. It should
represent a synthesis of the information produced in the interview and should not be tied to any specific area of family functioning.

0 - **No problem**
1 - **Doubtful or trivial**
2 - **Mild**
3 - **Moderate**
4 - **Severe**
APPENDIX G

SHEET FOR THE RATINGS OF PARENT INTERVIEW

1. Severity of Child’s Problem Behavior
   0  1  2  3  4
   No problem Doubtful or Mild Moderate Severe
   Trivial

2. Mother’s emotional Upset
   0  1  2  3  4
   No problem Doubtful or Mild Moderate Severe
   Trivial

3. Discord in the Family System
   0  1  2  3  4
   No problem Doubtful or Mild Moderate Severe
   Trivial

4. Restriction of Social Involvement
   0  1  2  3  4
   No problem Doubtful or Mild Moderate Severe
   Trivial

5. Mother’s Understanding of the Child
   0  1  2  3  4
   No problem Doubtful or Mild Moderate Severe
   Trivial

6. Parents’ Management Skills
   0  1  2  3  4
   No problem Doubtful or Mild Moderate Severe
   Trivial

7. Current Situation
   0  1  2  3  4
   No problem Doubtful or Mild Moderate Severe
   Trivial
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<tr>
<th>Function Area</th>
<th>Activity Number and Name</th>
<th>Monday</th>
<th>Tuesday</th>
<th>Wednesday</th>
<th>Thursday</th>
<th>Friday</th>
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How to fill in the weekly home activity program sheet?

Please fill in the sheet after you try each of the activities according to the following:

(-) Activity could not be worked on

(S) Activity was tried with a simpler version

(I - PG) Skill is improving with physical guidance

(I - VG) Skill is improving with verbal guidance

(O) Skill is gained - OK
### APPENDIX I

#### DEVELOPMENTAL LEVEL AND ACTIVITY NUMBERS IN FUNCTION AREAS

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<th>Function Area</th>
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- **Cognitive Performance**
- **Social Help**
- **Self Help**
- **Verbal Cognitive**
- **Performance Cognitive**
Please write the time of the day and the result in every cell then show it to your child. (A) for accident; (-) for the child waited on the toilet but did not use it; (smiling face) for the child used the toilet appropriately.

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APPENDIX J
TOILET TRAINING CHART
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<th>Date</th>
<th>What did he/she do (or say) to communicate?</th>
<th>What did he/she want to say?</th>
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<th>To who?</th>
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APPENDIX L

QUESTIONNAIRE ON THE EFFECTS OF TREATMENT

For each item, please circle the alternative which is closest to the truth:

1. As a result of my involvement with the TEACCH Program, my child has
   1. Become much worse
   2. Become slightly worse
   3. Not changed
   4. Improved slightly
   5. Improved markedly

2. As a result of my involvement with the TEACCH Program, I have
   1. Much less of an understanding of my child
   2. Slightly less understanding of my child
   3. About the same understanding of my child
   4. A slightly better understanding of my child
   5. A much better understanding of my child

3. As a result of my involvement with the TEACCH Program, my family has, on the whole, begun to function
   1. Much worse
   2. Slightly worse
   3. About the same
   4. Slightly better
   5. Much better

4. As a result of my involvement with the TEACCH Program, my child seems
   1. Much less happy at home
   2. Slightly less happy at home
   3. About the same
   4. Slightly more happy at home
   5. Much happier at home
5. As a result of my involvement with the TEACCH Program, I feel
   1. Much less comfortable with my child
   2. Slightly less comfortable with my child
   3. About the same comfortable with my child
   4. Slightly more comfortable with my child
   5. Much more comfortable with my child

6. As a result of my involvement with the TEACCH Program, my child communicates
   1. Much less than before
   2. Slightly less than before
   3. About the same amount as before
   4. Slightly more than before
   5. Much more than before

7. As a result of my involvement with the TEACCH Program, my child is
   1. Much less responsive to me
   2. Slightly less responsive to me
   3. About as responsive as before
   4. Slightly more responsive to me
   5. Much more responsive to me

8. As a result of my involvement with the TEACCH Program, my child plays like a normal child
   1. Much less
   2. Slightly less
   3. About the same
   4. Slightly more
   5. Much more

9. As a result of my involvement with the TEACCH Program, my child does unusual things
   1. Much less
   2. Slightly less
   3. About the same
   4. Slightly more
   5. Much more
10. As a result of my involvement with the TEACCH Program, I am

1. A much worse teacher of my child
2. A slightly worse teacher of my child
3. About the same as a teacher of my child
4. A slightly better teacher of my child
5. A much better teacher of my child
FOOTNOTES

1: The materials which are stated in the Appendixes D, E, F, G and L are employed from Andrew Short’s 1984 study with a written permission.

2: The reason of using PEP-R is that the participant children will be under the age of seven and PEP-R can be used with children within the age range of 6 months to seven years.

3: The materials presented in the Appendixes were translated into Turkish to be administered.
BIBLIOGRAPHY


