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Case Study: Training a Mother of Child with Autism on How to provide Discrete Trial Teaching

Abstract

It is significant that parents of children with autism participate in the process of education of their children. In this study, the effects of ADOSEP, which is a family education program prepared to teach parents how to use a research-based discrete trial method, on teaching behaviors of a mother of a child with autism through discrete trial were examined. The results of the study indicated, that mother of child with autism attained the behavior of instructing through discrete trial and she demonstrated this behavior with her own child in her house. Participant mother of the study was pleased with taking place in the program and becoming systematically functional with her son.

Key words: autism spectrum disorder, discrete trial teaching, family education

Introduction

Autism spectrum disorder is a type of developmental disability with the highest level of incidence after mental deficiency. Studies show that each year the incidence of autism has increased more. In the literature, three main deficiencies regarding autism identifications are discussed. Those deficiencies include difficulties in communication, hardships in socializing, and repetitive behaviors or limited interest (Heflin & Alaimo, 2007). Due to these limitations, individuals with autism disorder exhibit lower performance in communication, language, social,

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play, daily living and academic skills than their peers. The most important component in improving the performance of these skills of children with autistic disorder is taking the regular and systematic training (Cowan & Allen, 2007). As a result of the growing number of individuals with autistic disorder who are offered with special education services, the importance on evidence-based educational programs which will support these individuals with autism as early as possible and in the areas they are in need the most. The school staff, teachers, families, and experts in the field are in search of effective and, at the same time, scientifically valid applications for children with autism disorders (Shavelson & Towne, 2002). It will prevent wastage of time and effort if the techniques and methods, which will be used in education and training of children with autism disorder, could be research-based applications.

In the U.S.A, various institutions and organizations do classification and listings in relation to research-based applications and methods which can be used when working with individuals with autism disorder. The generated classification and listings are updated periodically. One of the evidence-based applications in each of the above-mentioned classification and listings in providing education to children with autism disorder is discrete trial teaching (DTT).

DTT is one of the well-researched and known applied behavior analysis techniques used in skill-teaching to children with autism disorder (Smith, 2001; Stahmer, Ingersoll, & Carter, 2003). Discrete trial teaching is also one of the most discussed methods in studies carried out to eliminate skill deficiencies of children with autism and it has been used for a long time (Lovaas, 1987, 2003; McEachin, Smith & Lovaas, 1993; Smith, 2001). Discrete trial is expressed as a set of actions including stimuli or premise, the behavior and the result. Differences in discrete trial teaching presentations indicate different uses and styles of behavior teaching (National Research Council, 2001). A discrete trial is a short teaching unit (usually 5-20 sec.) applied by a teacher working one-to-one in an environment where student's interest is prevented from collapsing. Not only teachers and professionals working with children with the disorder of autism but also parents and helpers can apply DTT and both children and adults with autism disorder benefit from DTT (Smith, 1993). There are five components of each separate experiment. These are, respectively; stimuli, cue, response, result and time between trial.

Upon reviewing the related studies, DTT seems effective in many areas such as receptive language, gestural communication, play skills, prevention of problem behaviors, sentence structure and functional communication skills (Koegel, O'Dell, & Dunlap 1988; Krantz & McClanahan, 1981; Lovaas, 1987; Piazza, Moes & Fisher, 1996). DTT is also one of the most important components in applications of intensive behavioral training. Many trainers like parents, private teachers and auxiliary staff are in need of DTT for teaching children with autism. This need requires effective, efficient and economical educational processes to apply discrete trial teaching to individuals with autism (Thomson, Martin, Arnal, Fazzio, & Yu, 2009).

It is reported that average 30-35 hours of training is offered weekly in the programs which use DTT as a basic parameter (Eikeseth, Smith, Jahr, & Eldevik, 2007). In these applications, the task is usually five to seven people and this training lasts for 3 years. The costs of these programs are high as they are intensive and require involvement of many staff. When programs are not

provided by the state, they bring extra loads to families. It is aimed to make parents participate in the programs and increase the staff in charge both in number and quality in order to provide children with economical and qualitative education. In addition, family-oriented applications are put forward. Active participation of child's family in the education program is emphasized in many studies as critically important (Lafasakis & Sturmey, 2007; Crockett, Fleming, Doepke, & Stevens 2007). One of the most important ways to include families in the training program is to identify the program their children are in and deploy it to a certain extent (Meadan, Ostrosky, Zaghlawan, &Yu, 2009).

Families can use various methods and techniques on their own children when teaching and they can contribute to their children's development (Meadan,et al., 2009). The studies, in which discrete trial teaching method was utilized as the teaching method, show that families could apply the program to their children successfully after the training (Crockett, Fleming, Doepke, & Stevens, 2007; Koegel, Glahn, & Nieminen, 1978; Lafasakis & Sturmey, 2007).

It is expressed that the ideal training period for individuals with autism disorder is approximately 30-45 hours per week. All things considered, it appears to be a large gap between the ideal training period and the support of educational services provided to individuals with autism by the state which is limited to 8 hours per month in Turkey. Nowadays, many parents of children with autism disorder are involved in their children's early education by applying such methods as discrete trial methods. This method is used to teach many different social, language and academic skills to children with autism disorder (Sturmey & Fitzer, 2007).

Many educators like parents, teachers and assistant staff feel the need of applying DTT and this requires discrete trial teaching to be implemented via effective, efficient and economical processes. In the literature, the demand is high for providing discrete trial teaching; though, there are a few studies on the existing methods. Studies on DTT's implementation with different groups show that very few studies have been carried out by families so far and most of these studies have focused on working with mothers. In addition most of the studies, it appears that there was given limited information about content and the application pockets used while studying with families and there are some limitations in data collection of reliability and social validity (Dyer McBride, Santos, & Jeans, 2009; Thomson, Martin, Arnal, Fazzio, & Yu, 2009).

The purpose of the study, in accordance with the requirements specified in the research, is to determine the effects of Discrete trial teaching education program (DTTEP), which was prepared to train parents on how to provide discrete trial teaching, on training of a mother of a child with autism disorder to be able to provide discrete trial teaching.

Method

This is a case study which aims at determining the effects of DTTPEP which was prepared for training a mother of a child with autism disorder in order to provide discrete trial teaching on her behaviors of providing discrete trial teaching to her child (Green & Johnson, 2000; Merriam, 1998).

Participant

A mother with a child with autism disorder participated in the study. The participant mother has a six-year-old son who has an autism disorder. The participant mother is a high school graduate and a housewife. The husband of the participant mother is a pediatrician and he works at a state hospital. The family has another son who is 25 years old. The mother has not participated in any family education studies before. The mother stated that she hardly accepted the situation and her son had got more intense special education training in the last two years.

Dependent Variable

The dependent variable of the study is behaviors of mother's providing Discrete Trial Teaching (DTT). Discrete Trial Teaching Presentation Evaluation Form (DTTPEF) developed by Fazzio, Arnal, and Martin (2007) was used to evaluate mother's providing Discrete Trial Teaching behaviors. DTTPEF's validity and reliability studies were conducted by Martin, Fazzio, Arnal, and Thomson (2008) and its field studies were done by Jeaonson et al. (2008). The related form includes 5 main items which are pre-teaching, premise management, result management, time between trials and graying and 21 substrates. DTTPEF scoring guide which was developed and revised by Fazzio, Arnal, and Martin (2010) was benefited on how to use the form and the related form was translated into Turkish language with the permission of developers.

Independent Variable

In the study, the independent variable whose effects will be found on the dependent variable is DTTEP which was designed to teach the mother to provide discrete trial teaching. DTTEP, which was designed to teach parents to provide discrete trial teaching, was prepared examining the previous studies. The main components of DTTEP's content include courses in family education sessions, written materials, sample videos show, analyzing prepared videos, role playing with families and answering the questions of families. That DTTEP composes 8 sessions and the number of these sessions could be increased to 10 according to mother's performance was enabled. It was planned to present each DTTEP part with family education sessions. DTTEP's eight sessions mentioned form "a) Autism b) the reinforcement c) providing clues d) preparations for teaching e) discrete trial teaching f) discrete trial teaching with examples 1 g) discrete trial teaching with examples 2 h) discrete trial teaching with examples 3".

Data Collection and Analysis

In the study's initiation and implementation phases the polling data were collected in order to determine the behaviors of participant mother's presenting DTT. In the initiation phase level, the data were collected conducting 3 sessions with the participant mother. In addition, in order to test the social validity interviews were carried out with the participant mother. In the interviews with the mother, information related to her satisfaction with the study, suggestion and recommendations about the study and reflections of the study on a daily life was obtained.

The polling sessions with the participant mother were conducted in one of the individual practise classrooms of Special Education Implementation Department at Anadolu University. The participant mother was asked to present teaching to a field expert who was role playing as a child with autism who had limited expressive and receptive language skills in the polling sessions.

Before the polling sessions, the participant mother was given an informative summary about what was expected from her and was asked to read it. This informative abstract was about the receptive language skill required to work, tools she needed to use and tips she could benefit from during the sessions. The video recordings between mother and the specialist were recorded using DTTPEF. In the next step, mother was asked to carry out training sessions with her child at home. Whether the mother demonstrated the skill she attained or not with her child was examined.

Results and Conclusion

The data regarding the independent variable DTTPEF's effects on the participant mother's presenting DTT behaviors were processed in the chart after registering in DTTPEP. Graphical analysis shows that the mother's behaviors of presenting DTT gradually increased (Figure 1). After the first three sessions of the DTTPEP study, there appears to be an increase on the mother's present DTT performance. That in the first three sessions of the program more theoretical issues were handled are normally met by considering the situation. Graphical analysis shows that there is an increase in mother's presenting DTT behaviors with the fourth session which is an academic preparation session. After the first four sessions, there is a noticeable increase in mother's presenting DTT behaviors. The cause of this increase in the performance of the mother is thought to be because of video watching, video analyzing and role-playing which were mainly dealt in the sessions after the first three sessions.

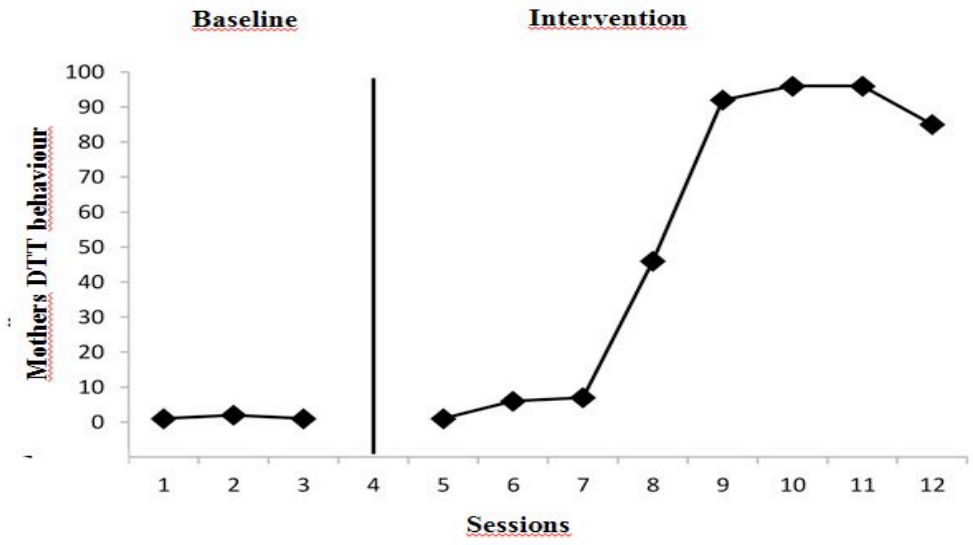

Figure 1. The effectiveness graphic regarding mother's behavior of presenting DTT

It was seen that the mother endeavored to apply the issues dealt that day and gave correct responses to substances that are associated with the subject of the day in each polling session after the academic sessions. Even though mother's performance was on a desired level, there were seen a small number of incorrect responses. Performance analysis of polling sessions shows that the mother demonstrated incorrect responses often while data was being recording and on the steps of reinforcement.

After completing the eighth session of the content of DTTPEP, it was seen that mother learned the behavior of practicing DTT with her child at home at the level of about %80 in the generalization sessions (Figure 2). Incorrect responses of the mother after the training sessions were as well on the steps of data recording and practice sessions as in the polling sessions.

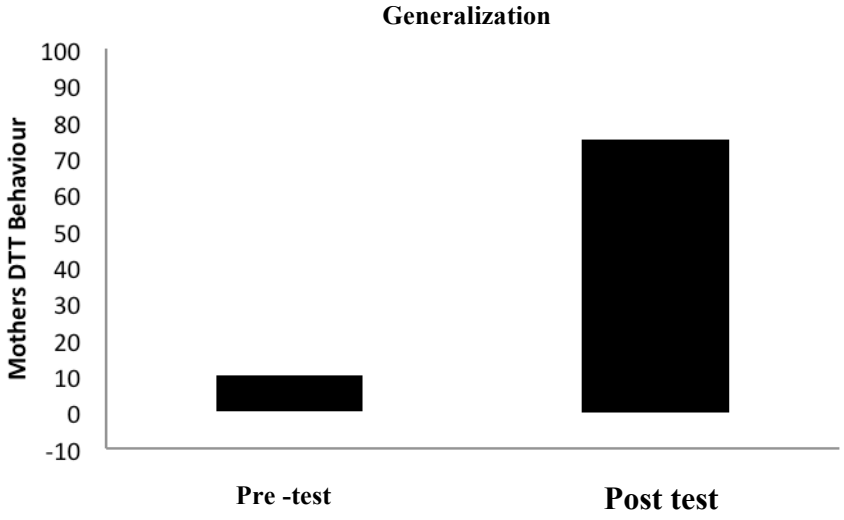

Figure 2. The generalization graphic regarding mother's performance of presenting DTT in generalization sessions with her child at home

The participant mother said the program had been beneficial and thanked in the social validity interviews. The mother also stated that she had shared what she had learned that day in the sessions and she had tried to teach her husband the content, too. She said that she had less knowledge about many of the issues described in the theoretical sessions using statements like "I learned many things from the lessons and applying the lessons helped me while learning". She expressed that she had benefited from the role-play activities but at first, it had been difficult for her to see somebody she did not know acting like a child. She also stated that she wanted to participate in similar studies and she was happy to actively take place in her child's education.

Conclusions and Recommendations

In this study, it is seen that DTTPEP is effective on mother's behavior of presenting DTT. The findings of the study are similar to those of previous studies regarding teaching parents to present discrete trial teaching method (Meadan et al. 2009; Thomson et al., 2009). In the similar family education studies, it is seen that families have learned how to present discrete trial teaching and used it effectively. In other studies, in which methods other than discrete trial teaching were studied, it was found that parents used the techniques effectively taught them (Meadan et al., 2009). When examining the data obtained from this study, there appears to be a significant increase after the first three sessions. Here, it is thought that the reason of this significant increase is because of the DTTPEP's sample demonstration of the last 4 sessions and role-playing. However, mother's indication that there were theoretical shortcomings of the program and she benefited from it shows the importance of the first three sessions.

It is observed that, although a few, the mother demonstrated incorrect responses often while data was being recorded and on the steps of reinforcement. It can be considered that showing more focused examples and role-play activities on these sections will reduce these errors. The work carried out is significant in terms of being a special education program prepared for the families of children with autism disorder. This study can be considered as a guide to other studies, especially in Turkey where there is a limited number of studies for families of children with autism disorder.

In studies of the future, the independent variable DTTPEP might be applied to larger groups. In addition, as recent similar studies in the literature show that they have mainly been conducted with mothers; the quality of the studies will improve if fathers also take part in programs. In the light of the findings of the study, the renewal of the program content and implementation through modifications might be considered.

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