A Training Programme for a Teacher Working with a Student with ASD: An Action Research

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Abstract

The qualifications of the educators who teach children with Autism Spectrum Disorders (ASD) may affect the outputs of the education. Qualified educators play an important role in skill development. Therefore, educators need to have special qualifications. Within this scope, it is important to organize well-designed training programs for the educators which aims enabling them to gain the skills and the knowledge specific to autism.In this action research, the problems of the educators working with children with ASD are described, with an aim to solve these problems and to provide training for meeting such needs and to analyze the results. Research data were collected through a variety of methods including observations, meetings, interviews, researcher reflections and artifacts. The data were analyzed via inductive analysis. The findings are interpreted into seven themes as follows: Teaching problems, behavioral problems, dealing with teaching and behavioral problems, educational needs, educational practices aimed at solving the existing problems and meeting the needs and changes in the process of implementation, changes in the performances of the participants, opinions of the participants on educational practices. Findings reveal that the participants did benefit from the educational practices offered. All findings are discussed in parallel with the relevant literature.

Key Words

Action Research, Applied Behavior Analysis, Autism Spectrum Disorders (ASD), Discrete Trial Teaching, Educator Training, Inductive Analysis, Qualitative Research, Special Education.

The qualifications of the educators who teach children with ASD may affect the outputs of the education. Qualified and competent educators play an important role in skill development and quality of life. Therefore, the educators need to have special qualifications (Billingsley, Israel, & Smith, 2011; Constable, Grossi, Moniz, & Ryan, 2013; Koegel, Matos-Fredeen, Lang, & Koegel, 2011; Özyürek, 2008; Scheuermann & Webber, 2002; Scheuermann, Webber, Boutot, & Goodwin, 2003; Simpson, 2004). Although there are not sufficient data regarding the qualifications of the educators, there is a consensus about the following standards for qualified educators in special education and ASD field: (a) using evidence-based teaching methods, especially applied behavior analysis (ABA). Because many of these methods based on the ABA (for example, Discrete Trial Teaching (DTT), incidental teaching, errorless teaching, activity schedules). ABA methods can produce important and lasting improvements for a large number of children with ASD(Billingsley, 2004b; Eikeseth, 2009, 2010; Kırcaali-İftar & Tekin-İftar, 2012; Klintwall & Eikeseth, 2012; Koegel et al., 2011; Kurt, 2012; Leaf et al., 2013; Lerman, Vorndran, Addison, & Kuhn, 2004; Lovaas, 2003; National Autism Center [NAC], 2009; Roxburgh & Carbone, 2013; Virue´s-Ortega, 2010), (b) having sufficient level of knowledge

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regarding ASD (Eikeseth, 2010; Koegel et al., 2011; Kırcaali-İftar, 2007; Lovaas, 2003; Scheuermann et al., 2003), (c) being able to prepare and implement an individualized education program (IEP) (Özyürek, 2008; NAC, 2009; Thompson, 2011), (d) being able to evaluate the student and the program (Eikeseth, 2010; Özyürek, 2008; Scheurmann & Webber, 2002; Sucuoğlu, 2012), (e) being able to implement curriculum that covers core areas affected in children with ASD (Eikeseth, 2010; Kırcaali-İftar, 2007; Lovaas, 2003; Scheuermann et al., 2003) and (f) having the knowledge and skills to deal with behavioral problems (Anderson & Romanczyk, 1999; Eikeseth, 2010; Koegel, Matos-Fredeen, Lang, & Koegel, 2011; Scheuermann et al., 2003). However, unfortunately very few educators have these qualifications and most of them lack the necessary skills and knowledge. Within this scope, well-designed and specialty-focused educator training programs will enhance their quality and competency. In other words, the educators need to receive training and need to be supported in aspects in which they need support. This is especially more important for the educators just starting the profession (Barnhill, Polloway, & Sumutka, 2011; Billingsley, 2004a; Billingsley et al., 2011; Dempsey, Arthur-Kelly, & Carty, 2009; Koegel et al., 2011; Nougaret, Scruggs, & Mastropieri, 2005; Scheuermann et al., 2003; Simpson, 2004; Syriopoulou-Delli, Cassimos, Tripsianis, & Polychronopoulou, 2012). At this point, to enhance training effectiveness, training should: (a) be aimed at the needs of the educators, (b) be provided by specialists, (c) be not limited to theoretical knowledge only and be implemented as applied, (d) be extended over a period of time so that the subject matters can be addressed comprehensively instead of short term training such as workshops lasting one or two days, (e) be implemented in small groups, (f) include consulting service following training, (g) cover the methods for teaching skills and managing with problem behaviors. Therefore, it is very important to take these elements into consideration while planning and conducting training (Billingsley, 2004a; Eikeseth, 2010; Kaff, 2004; Koegel et al., 2011; Scheuermann et al., 2003).

Because of the research on training of the educators working in special education field and especially ASD is limited, new research is needed in this respect (Barnhill et al., 2011; Koegel et al., 2011; Lerman et al., 2004; Probst & Leppert, 2008). The majority of the research on educators working with students with ASD introduces a determined teaching method based on the decision of the

researchers, without seeking the opinions of the educators. In other words, in the existing researches in the literature, the researcher determines the needs of the educators and prepares the training program aimed at preparing educators in teaching methods. Also, the effects of the training are examined using quantitative research methods. Just to address a few exemplary studies; Lerman et al. (2004) examine the effects of a training program aimed at teaching evidence-based practices (preference assessment, direct teaching, and incidental teaching) to teachers working with individuals with ASD. Erbas, Tekin-İftar, and Yucesoy (2006), offered training aimed at functional analysis method to the special education teachers, who also work with children with autism, investigating the effectiveness of this training quantitatively. Probst and Leppert (2008) quantitatively examine the effects of a training program based on structured teaching that derived from the TEACCH-approach aimed at teachers of individuals with ASD. In another study, the effects of training aimed at providing the educators with the skills for DTT are examined (Catania, Almeida, Liu-Constant, & DiGennara Reed, 2009). Also, Vuran and Olcay-Gül (2012) analyzed the effectiveness of staff training on DTT via multiple baseline design. Findings of the all researchs showed that the training programs were effective in teaching skills of special education staff. The programs have been useful for the participants to conduct effective and qualified educatonial practices. However, it is very important for increasing the effectiveness of training program to determine the needs of the educators together with the educators and researchers. Also, these needs should be considered to prepare the training programs (Alber & Nelson, 2002; Boardman, Argüelles, Vaughn, Hughes, & Klinger, 2005; Scheuermann et al., 2003). Moreover, there is a need for qualitative research especially to deeply comprehend the results of the quantitative measurements (Carpenter, 2007; Dymondet al., 2006). It is especially very important to conduct action research that enables cooperation between the researcher and the educators aiming to deeply analyze the impacts of the offered training and how it should be and examining the actual problems of education. Action research is a useful method for determining real problems and for improving solutions to these real problems in an educational setting. Moreover, by means of such research, higher quality education programs can be developed (Dymond et al., 2006; Mertler, 2006; Mills, 2003; Uzuner, 2005). When the literature relating to training for educators of children with ASD is

examined, it is found that few researches examining the issue use qualitative methods. Also, the studies containing detailed descriptive information about training program are quite limited. Salisbury and Wilson (1997) conducted an action research in two schools, containing inclusion students with autism. The purpose of the research was to describe the practices that aimed to solve the problems experienced by the students and teachers and share the results of the practices. The practices include strategies that would encourage special education students to become more active participants in the classroom. Also, activities for developing academic success of students with disabilities in general education classrooms were used in this research. The findings of the study suggested that the interventions were effective in improving the quality of teacher practice and positive student outcomes. Vuran, Çolak, and Gürgür (2003) conducted a study at a special education center with different categories of disabled students in addition to students with ASD. The researchers first determined the needs of the center together with the staff. Then they planned and presented a training program covering behavior management and skill training. Different training procedures were used throughout training, for example, demonstration, videotaped examples discussing examples, role-playing, and feedback about participant's program samples. The qualitative analysis results are as follow: (a) there are issues that the participants on the implementation of special education, (b) the training program has been useful for the participants to conduct effective practices, (c) the problem behaviors of the participant's students were decreased and the skills (e.g., communication, self-care) were developed. The researchers pointed that new training program and new research is needed. Dymond et al. (2006), on the other hand, implemented action research in an inclusive high school with students with autism as well. The purpose of the research was to examine a redesign process, in which the necessary changes were made to ensure the students to participate in the general curriculum and make progress. The research was conducted with a general education teacher and two special education teachers in a science course section including only mentally retarded students. Research team and teachers worked collaboratively for increasing more effective lesson plans. As the school year began, weekly research team meetings were held to plan for the redesign process, share information about student needs and problems. At the conclusion, they made effective changes to

the course in the some areas such as curriculum, instructional delivery, learning environment, student participation, instruction materials and program assessment. With these changes, teacher interactions with the disabled student increased. Also, teachers began to make lesson plan and use instructional strategies more easily. In addition, social and academic skills of students with disabilities were developed. Students with and without disabilities learned how to work effectively together. The teachers believed that students without disabilities learned to display more caring behaviors towards their peers with disabilities. Finally, Ludlow, Keramidas, and Landers (2007) offered detailed descriptive information regarding a program that they implemented in order to enhance the qualifications of the educators in the field of ASD (Project STARS: Specialist Training for Autism in Rural Areas). Moreover, they also submitted the results of the initial outcomes of this program. This program is a distance education model that uses desktop audio conferencing for interactive classes with other online activities as well as online supervision of practicum experiences. This program includes courses about research-based and current best practices for ASD. The program provides opportunity to participants for practicing in areas such as preparing an IEP, implementing instructional activities or behavior supports. Initial outcomes reveal that the program is helpful to the educators and that the participants are pleased to participate in the program. Because, the program provides high quality of content presentations, highly interactive learner interactions and practicing opportunity. Also, this program is advantageous for special education staff working with students with ASD in rural areas.

As a result, there is a necessity for a qualitative research that aims to enhance the qualification of the educators working with students with ASD because of the limited qualitative research. Especially, the need of action research which provides the determination of real problems and conduction of educational programs based on these problems by collaboration with educators and researchers is the justification of this research.

Accordingly, the goal of this study was to describe the problems experienced by the educators working with students with ASD and to implement educational practices to solve such problems and to examine the results. Based on this main purpose, the answers were sought to the following questions: (a) what type of teaching and behavioral problems

are faced during teaching sessions with a student with ASD? (b) how are the teaching and behavioral problems dealt with? (c) what are educational needs of the educators? (d) what kind of educational practices are planned and implemented for the solution of the existing problems and for meeting the needs and what kind of changes have been made in the process of implementation? (e) has any change occurred in the participants of the research following educational practices? (f) what are the opinions of the participants of the research in relation with the educational practices?

Method

This study was implemented using action research, one of the methods of qualitative research, between September 2010 and August 2011.

Action research has been used by both the researchers and the educators especially during the recent years in order to systematically examine the problems arising in the process of education, offer solutions and improve the existing situation. In action research, there is a research cycle consisting of gathering information about the existing situation, developing and planning action to solve the problem, taking the action and evaluating the results of the action (Brydon-Miller, Greenwood, & Maguire, 2003; Creswell, 2005; Mertler, 2006; Mills, 2003; Uzuner, 2005).

Participants

The identities of the participants other than the researcher are kept confidential in accordance with the research ethics and their privacy right is respected.

The participants of the research are the manager of the special education center, where the research is conducted, a teacher working with a student with ASD, the researcher, a student with ASD and the student's mother. At the starting date of study, since there was only one special education center at the residential area where the researcher's working place, faculty of education was located and this center asked for educational support about ASD, this working group was chosen for this research. The reason for working with only one teacher is that the center has only one student with ASD and one teacher providing services to this student because the center is just starting to admit individuals with ASD.

The manager of the center is female, aged 27, who graduated from the department of Primary School Teaching and who has been the manager of the

institution for 3 years. She is now managing the center after the death of her father, who established the center.

The teacher is female, aged 42, who graduated from the department of Preschool Teaching. Moreover, she has a certificate from a special education training program. She has teaching experience of total five years. She has been working in the field of special education, especially with mentally retarded students for approximately three years. She has started to work with a child with ASD at this center, where she has been working for one and a half year.

A six-year-old girl was the participant of the study. She was diagnosed with Pervasive Developmental Disorder-Not Otherwise Specified (PDD-NOS) by a neurologist working at a university hospital. Soon after the diagnosis, at the age of three she began special education. She has been receiving education from this center approximately for three years by certain intervals. The education is provided as individually and as a group for total eight hours a week. She has no other disabilities. She does not use any medication. The general features of the participant were determined via researcher's class observations, interviews with teacher and mother, examination of IEP. These features at the time when the research started can be summarized as follows: She has problem behaviors such as crying when something she wants does not occur instantly, sometimes expressing her desires through inappropriate ways such as crying and hitting. She has a book (the book named "Lemon Girl") that is the object of obsession for her, she displays problem behaviors such as crying and hitting when that book is taken from her, especially during teaching sessions. She follows single-word commands, she uses sentences with one and rarely -when reminded-two words in order to ask for an object and/or food that she wants very much. She can maintain limited eye contact. She is capable of basic self-care skills. She has some fine motor skills, gross motor skills, cognitive and academic skills. However, in some areas she has difficulties and the education continue based on her goals in the IEP. For example, student matches three-dimensional (3-D) and two- dimensional (2-D) objects, colors, shapes and 3-D objects with identical 2-D representations. However, she can't match nonidentical 3-D and 2-D objects of the same dimension and sorting. She cannot communicate with her peers, she can only participate in some games with her cousins.

The other participant of the research is the student's mother. She is 37 years old and she's a housewife.

The researcher has Ph.D. in Major of Teaching Mentally Retarded under the Department of Special Education. The researcher worked as a practitioner in the field of special education, especially including ASD for 12 years. For the last two years, she has worked as an academic member in the university.

Setting and Materials

The study was conducted at special education center for children with developmental disabilities. The teacher's classroom was used for training process, teacher interviews and classroom observations. These classrooms contained a table, three chair, two cabinet, one shelf, education materials like books, toys. Also, meeting room and administration room were used for interviews and meetings with the manager of the center and mother. There were a table, chairs and some materials such as flag, books. A video camera, voice recorder, data sheets, evaluation forms, pencil and paper were used. In addition, teaching materials (e.g. spoons, socks, shape sorters) for matching, receptive language and play skills were used by teacher during the working with student. Teacher used different types of these materials (e.g. different types of shape sorters) generalization across materials. Also, relevant reinforcers (e.g. books, chips) for the child were used.

Implementation Process

Researcher conducted the research procedures in cyclical actions based on action research cycle. Considering to conduct research relating to training the educators working in the field of ASD, the researcher first reviewed literature in order to identify and limit the research topic. Also, the researcher asked the views of the experts about research topic and research methodology. At the same time, a special education center, where the research is conducted, asked for educational support with respect to ASD. After this stage, the researcher decided to work for the solution of the problems faced by the educators concerning children with ASD. Clarifying the research questions in parallel with this basic purpose, the researcher collected data to evaluate existing situation and plan the first action plan (March-April-May 2011). Analyzing the data obtained as a result of data collection stage, the researcher prepared the first action plan. After the researcher asked the views of the ASD experts, the participant teacher and manager about action plan, she started to implement these plans in May 2011. The practices in the action plan took place

regularly every week. The effects of the action plan were monitored in parallel with the evaluations and reflection meetings and new action plans were prepared and implemented.

Before and during implementation process, the opinions and guidance of the national and international experts who study in the field of ASD and qualitative research methods were asked for determining the trustworthiness of the research subject, action plans, data collection and analysis process.

The research ended in August 2011 in accordance with the results of the evaluations.

Data Collection Methods and Analysis

Data were collected through a variety of methods including observations, meetings, interviews, researcher reflections and artifacts.

Classroom Observations: The researcher observed the classroom before, during and after the research. Observations were recorded by video recording. Three observations of total 60 minutes were made during the assessment process before the implementations. Total eight recordings of 360 minutes were made during and after the implementations. Moreover, informal class observations were made when considered necessary as a result of reflection meetings or during additional work taking place in parallel with the requests of the teacher, and field notes were taken.

Observations of the Teacher: Teacher informed the researcher verbally about her observations related the general condition of the student, her own performance and her own practices throughout the implementations. All these observations are included in video recordings. Moreover, the teacher also noted her observations when video recording was not taking place.

Meetings: Before, during and after the implementations, the researcher held meetings with the teacher, manager of the center and the mother. Notes were taken for such meetings.

Moreover, brief reflection meetings of 10-15 minutes were held with the teacher before and after each implementations day. The aim of the reflection meetings is to evaluate effectiveness of the actions. These meetings were held constantly based on the experiences of the teacher regarding the practices of the week before, her questions and her suggestions related to the next week. The data gained through video recording and/or in meetings recorded in

the journal of the researcher served the purpose of forming new action plans and revising action plans.

Interviews: Interview of 35 minutes were held with the teacher for assessment before the implementations. In this interview in order to determinate the existing condition, 12 questions were asked. Some examples for these questions are following: "What kind of methods do you use when teaching students with autism? What kind of educational and/or behavioral problems do you encounter while teaching students with autism?, What are the reasons of these problems according to you?, How do you cope with these problems?, What kind of educational supports (seminar etc.) do you think you need about the issue of solution of the problems you encounter?". After the implementations, interview of 20 minutes were conducted to determine her opinions about the practices. In this interview eight questions were asked. Some examples are following: "What are your opinions about DTT? Can you be able to use what you have learned while working with your students?" Moreover, an interview of 40 minutes was made with the mother before the implementations in order to gather information about the participant student features, behavior problems, educations, etc.

Interview questions were prepared by researcher with reference to literature review (Burton-Smith, McVilly, Yazbeck, Parmenter, & Tsutsui, 2009; Desai, Divan, Wertz, & Patel, 2012; Ergenekon, 2005; Kodal, 2006; Ryan & Hemmes, 2005; Scheuermann et al., 2003) and the practical experiences of the researcher. The opinions of the experts who study in the field of ASD and qualitative research methods were asked for determining the appropriateness of the questions for participants. The interview was conducted by the researcher. Tape recordings of interviews were gained.

Researcher Reflections: Researcher documented informal conversation and self impressions during research process.

Artifacts: The notes which are aimed at taking experts views, e-mails, and student files containing information of the students and IEP are the other sources of this research.

During data collection and analysis, some strategies were used to establish trustworthiness: (a) triangulation of multiple sources of evidences; (b) member checking; (c) peer debriefing during data coding, and theme development; (d) disconfirming evidence; (e) researcher reflexivity; (f) behaving

according to ethical principles, (g) collaborative work (Brantlinger, Jimenez, Klingner, Pugach, & Richardson, 2005; Creswell, 2005).

The data were analyzed via inductive analysis. All data were organized and examined continuously for constitution of themes. Data from every data sources were structured thematically. Finally, all themes have been arranged and reported in an interrelated manner as a meaningful whole.

Moreover, quantitative data were also gathered during the research process. As a part of action plan, the researcher provided the teacher with training on DTT. Measurement of teacher's DTT skills was performed with a checklist that includes eight DTT skills. These skills were: (1) arrange environment, (2) arrange teaching materials, (3) secure child's attention, (4) discriminative stimulus, (5) present prompts, (6) provide consequence for the child response, (7) pause for inter-trial interval, (8) data recorded. The researcher prepared the checklist containing such skills (DTT Skills Assessment Checklist) and a form containing the descriptions of these skills (Behavioral Descriptions of the Target Behaviors in DTT Skills Assessment Checklist) in parallel with her knowledge in the literature (Babel, Martin, Fazzio, Arnal, & Thomson, 2008; Fazzio, Martin, Arnal, & Yu, 2009; Leaf et al., 2013; Roxburgh & Carbone, 2013; Ryan & Hemmes, 2005; Smith, 2001). The researcher recorded the teaching sessions planned for the teacher to use such skills in order to find out whether the teacher used the DTT skills according to the respective descriptions or not. The researcher scored DTT skills of the teacher using DTT Skills Assessment Checklist for each trial in these records. On a given trial, a "+" was scored if the skill was demonstrated. A "-" was scored if the skill was not demonstrated. The overall percentage of correct DTT was calculated by dividing the total number of steps performed correctly, scored as +'s, for each session (10 trials), by the total number of steps, multiplied by 100%.

For the baseline session, the researcher gave the teacher a DTT Information Form for Baseline Level. This form consisted of a written list of the names of DTT skills. However, the form did not contain the behavioral descriptions of such skills. Moreover, the form also contained the name of target behavior for the child, discriminative stimulus and materials about target behavior. The teacher was also provided with DTT Recording Form. The teacher was not given details about how to conduct DTT session. The researcher gave the

operational definition of target behavior verbally and said, "Examine the form and do your best". During the baseline level sessions, the questions of the teacher were not answered and no feedback was provided for these sessions. Each session consisted of 10 trials. Sessions were videotaped and scored as also mentioned above.

During each session, the teacher conducted one of target behaviors. The target skills were determined with the teacher according to the student's IEP. These were; (a) matching skills/ matching nonidentical 3-D objects of the same dimension. In other words, the student is taught to match 3-D objects to their nonidentical counterparts, (b) play skills/ playing with shape sorters. The aim is to teach student insert block into a shape sorter (Kırcaali-İftar, Kurt, Güleç-Aslan, & Ülke-Kürkçüoğlu, 2009; Lovaas, 2003).

After those sessions, the DTT training sessions were conducted as explained following section. Different procedures were used throughout DTT training are as follows: (a) verbal instructions and Powerpoint presentations in a lecture format, (b) videotaped examples, (c) researcher's examples, (d) discussing examples, (e) role-playing between the teacher and the researcher, discussing about teacher's performance (f) feedback about baseline performance (g) the researcher gave the teacher written copy of training package (Fazzio et al., 2009; Ryan & Hemmes, 2005; Sarakoff & Sturmey, 2004).

Following a DTT training, posttraining sessions and two-month follow-up session are conducted. During these sessions, the researcher gave feedback on the score before next session. Feedback included positive comment or informative feedback depend on teacher performance. Also, rehearsal and modeling procedures were applied in feedback sessions that the teacher needed to practice (Fazzio et al., 2009; Sarakoff & Sturmey, 2004). Teacher's DTT performance was scored as also mentioned before.The criterion for completion of these stages was making 100% on one session.

Interobserver Agreement and Procedural Reliability

Interobserver agreement was assessed during 25% of all DTT skills assessment sessions. Percentages of agreement were calculated using the formula Agreements (Agreements + Disagreements) X 100% (Kircaali-Iftar & Tekin, 1997). The mean interobserver agreement was 95% (range = 86% to100%).

Procedural reliability was calculated for the DTT training. In this respect, one naive observer was asked to mark on the Procedural Reliability Form whether such recordings contained the issues included in the training package or not and whether training procedures were used or not while providing training. In other word, procedural reliability data were collected for assessing implementation of the DTT training package for all training sessions. Procedural Reliability Form include training subjects (e.g. autism) and training procedures were used throughout training (e.g. videotaped examples). The formula for calculating procedural reliability is: number of observed behaviors divided by number of planned behaviors multiplied by 100 (Tekin & Kircaali-Iftar, 2001). It was found that all the DTT training sessions took place with procedural reliability of 100%.

Results

The findings are interpreted and presented into seven themes: (a) teaching problems, (b) behavioral problems, (c) dealing with teaching and behavioral problems, (d) educational needs, (e) educational practices aimed at solving the existing problems and meeting the needs and changes in the process of implementation, (f) changes in the performances of the participants, (g) opinions of the participants on educational practices.

Teaching Problems

Research findings reveal that the teacher faces the following teaching problems during teaching sessions: (a) the teacher is unable to use a specific teaching method in a systematic and correct manner during skill teaching. Moreover, the teacher is unable to present prompts in a systematic and proper manner. She does not display any efforts to make the verbal prompts, which she uses intensely, to fade. For example, the teacher explains the methods she uses as follows: "when I will teach something, I tell the student what to do verbally and then I act as the model, used this method. I always tell the student what to do for this skill verbally", "… We also benefit from visual methods. For example, I tell her, pointing at pictures, look at it and tell me what you see there. I am telling the name of the objects…", (b) the teacher is having difficulty to respond appropriate to the response of the student. The teacher uses reinforcers rarely to reinforce the correct trials. For example; during the class observation dated 13/05/2011, the student

response correctly for 12 times without a prompt. The student reinforced four of these answers with well done, and one with well done plus clapping. The teacher did not reinforce the remaining seven. Also, the teacher responded inconsistently to the incorrect trials of the student. For example, after the incorrect trial, the teacher sometimes repeats the first direction in a different manner, sometimes moves on to a new skill and sometimes says "no" and repeats the direction. Thus, it can be said that the teacher does not have a consistent and systematic behavioral pattern in this respect, (c) the teacher does not record data. For example, the teacher said that she evaluates whether the student learned a specific skill or not by asking the student's mother only. She does not record student's data during teaching sessions, (d) certain problems were also found in the presentation of the discriminative stimulus. The teacher does not present clear, correct and brief discriminative stimulus. For example, during the classroom observation dated 06/05/2011, the teacher used discriminative stimulus for teaching shape sorting such as "let's repeat first, green square, yellow star, what was this? Throw it in", "what color is the star? Throw it in", "throw in the square". In another observation, it was found that the teacher used the following instructions when teaching colors: "what color, look dear, what color is this", "tell me the color of the flower" (e) the teacher is having difficulty to attract the attention of the student to the teacher, the skill and/or the materials. For example, when the student is paying attention to the object of obsession in her hand or when the student is sitting sideways in her chair and not facing the teacher, the teacher continued giving discriminative stimulus. Also, during classroom observation prior to teacher training, there were circumstances that created by the teacher causing distraction of student's concentration. For example, when the teacher was studying to tell the name of the object on the picture card and when the student was also paying attention to the picture card, the teacher suddenly started to talk about another subject matter and to work on another skill. Moreover, the teacher worked at the desk throughout the teaching sessions, there was no entertaining activities such as a game and song. Also, there was no short interval.

Behavioral Problems

The teacher faced various behavioral problems by the student during teaching sessions. These problems are found to be (a) not participating in the activity (facing away from the teacher and/ or materials, getting up from the desk, getting up and sitting down at her desk, throwing course materials and not responding to discriminative stimulus), For example, the teacher says "she always threw teaching materials", "she doesn't participate in lesson. She wants to go out of class". (b) self-stimulating behaviors like constantly being interested in the object of obsession, not leaving it, shaking it in her hands, crying, hitting and shouting when an attempt is made to take it. For example, during interviews, the teacher said, "she is crying and shouting", "she always want to object of obsession, the book named 'Lemon Girl'".

Dealing with Teaching and Behavioral Problems

When data are examined as to what kind of methods the teacher uses in order to deal with teaching and behavioral problems, no apparent method used systematically is found. Moreover, it was also observed that the teacher applied some methods incorrectly or insufficiently. Sometimes, it was found that some behaviors of the teacher started and/or reinforced the teaching and/or behavioral problem. For example, the teacher says "… When she is a little nervous, ill-tempered, I show love, and then I calm her saying come on, let's have some lesson", "when I hold and when I feel that she relaxes a little, I start the lesson…". In other words, the teacher reinforces the problem behavior by holding, kissing the student and/or giving her the object of obsession when the student is giving signals of a behavioral problem. In another example, it was not possible to make the student leave the object of obsession, the book named "Lemon Girl", in her hands, and so teaching started with the book in her hands and the student could not focus on the teaching activity. The teacher tried to take the book from the student throughout the teaching session, but the student did not want to give it, so she displayed problem behaviors such as crying. The teacher says that the fact that she is working with a student with ASD for the first time and she does not exactly know what to do could be causing or increasing the problems.

Educational Needs

As the manager of the center and the teacher had no prior experience with a student with ASD, they mentioned that they need knowledge about ASD, teaching and behavior management methods and to be very keen on developing themselves in this

respect. For example, during one interview, the teacher said, "until now I have always worked in categories other than autism, I am reading books about ASD, I consult with my colleagues but I do not have enough knowledge". During another interview, the teacher mentioned that she was trying to correct her deficiencies through her own efforts mostly. Both of them expressed that they want to learn the teaching and behavioral methods that they can use for their current student and the student whom they will admit to the ASD department that they intend to open in the center soon. The teacher also said that she needs feedback about her teaching skills.

Educational Practices Aimed at Solving the Existing Problems and Meeting the Needs and Changes in the Process of Implementation

Action plans are prepared in order to solve the existing problems and to meet the needs as also mentioned. Educational practices were implemented in accordance with these plans.

The researcher first decided to teach the teacher a teaching method as one of the educational practices so that she would be able to provide the student with systematic teaching. The researcher chose "Discrete Trial Teaching (DTT)" method. DTT is a teaching method based on applied behavior analysis in order to change behaviors and to gain new skills in children with ASD (Ferraioli, Hughes, & Smith, 2005; Kurt, 2011; Leaf et al., 2013; Lovaas, 2003; Roxburgh & Carbone, 2013; Smith, 2001; Ünlü, 2012).The important reason for choosing DTT among many existing teaching methods is that DTT is evidence-based method and used extensively for years. A lot of studies suggest that the method ensures positive developments in skills and a decrease in behavioral problems. It may be used as an element of comprehensive practices such as early intensive behavioral intervention program (e.g., Güleç-Aslan, 2008; Güleç-Aslan, Kırcaali-İftar, & Uzuner, 2009; Kırcaali-İftar et al., 2009; Klintwall & Eikeseth, 2012; Leaf et al., 2013; Lovaas, 2003) or it may be used just for teaching skills (e. g., Downs, Downs, Johansen, & Fossum, 2007). According to the results of the studies related to the training offered to teach this method to the educators, paraproffessionals and families, the participants can use DTT correctly and learn DTT easily (e.g., Dib & Sturmey, 2007; Ünlü, 2012; Ünlü & Vuran, 2012; Vuran & Olcay-Gül, 2012). However, practice and research about how DTT training for teachers should be and the results of the offered training is still limited. It is agreed that

new research is needed in this respect (Fazzio et al., 2009; Ferraioli et al., 2005; Knight, 2010; Leblanc, Ricciardi, & Luiselli, 2005; Lovaas, 2003; Ryan & Hemmes, 2005; Sarokoff & Sturmey, 2004; Smith, 2001; Vuran & Olcay-Gül, 2012). Based on all these reasons, once a decision was made to teach this method, opinion of the teacher and manager was sought after providing brief information about DTT. They stated that they considered DTT as a method to meet their needs. In addition, two field specialists were also consulted.They reported a positive opinion about applying this method. In addition to other reasons, approval of experts were played a role in the selection of DTT.

At the stage of implementation, first the teacher was provided with DTT training of total 4.5 hours in 3 sessions. The training was provided in accordance with DTT training package prepared by the researcher based on her knowledge in literature (for example; Downs et al., 2007; Fazzio et al., 2009; Leaf et al., 2013; Roxburgh & Carbone, 2013; Ryan & Hemmes, 2005; Smith, 2001) and approved by specialists in the field. The DTT training package included: (a) autism, (b) basic applied behavior analysis techniques like reinforcement, schedules of reinforcement, possible reasons of behavioral problems, basic methods that may be used for behavioral problems, (c) following DTT skills: arrange environment and teaching materials, secure child's attention,discriminative stimulus, present prompts, provide consequence for the child response, pause for inter-trial interval, data recorded.

The following training procedures were used throughout training: (a) verbal instructions and Powerpoint presentations in a lecture format, (b) videotaped examples, (c) researcher's examples, (d) discussing examples, (e) role-playing between the teacher and the researcher, discussing about teacher's performance (f) feedback about baseline performance (g) the researcher gave the teacher written copy of training package (Fazzio et al., 2009; Leblanc et al., 2005; Ryan & Hemmes, 2005; Sarakoff & Sturmey, 2004).

The findings about DTT implementation process and the changes occured are as follows: (a) no change was made in DTT training procedures. Only, a decision was made and implemented to include the examples provided by the teacher more extensively and to ask for the ideas about subject matter of the teacher before starting the training sessions, (b) some changes were made in the contents of the training while providing the training. Some subject matters not included in the PowerPoint presentation

were added or explained in more details according to the needs of the teacher. Moreover, the methods that could be used to handle the behavior problems of the participating student were also determined and discussed together with the teacher. For example, it was decided to ignore the behavioral problems of the student aimed at getting attention or obtain an object and to reinforce all the positive behaviors based on extinction and differential reinforcement principles. Extinction and differential reinforcement are the most important behavior management principles based on ABA. A common practice of the extinction is ignoring undesired behavior that is reinforced by attention. Extinction is much more effective when paired with differential reinforcement. Differential reinforcement used by providing reinforcement to desired behavior that contain providing reinforcement desired behavior (Lovaas, 2003; NAC, 2009). In another example, the teacher was told that the object of obsessions of the student, the book named "Lemon Girl", could be used as a reinforcer. Also, the teacher was asked not to give that book when the student displayed problem behaviors and not to start education when she had it in her hands, (c) practices were planned and realized in parallel with the new needs of the teacher arising in the DTT training. For example, the teacher asked what discriminative stimulus she should use in teaching imitation and matching. The discriminative stimulus that the teacher could use were explained. Moreover, the kind of activities the teacher could provide during brief intervals between the sessions were explained (e.g. songs and children's plays), and examples were shown through role-playing with the student, (d) after training, the use of DTT was monitored for teaching skills other than the target skills (for example, expressive language skills /answer the "what is your name?" question, receptive language/ showing the object named and displaying the action named) and feedback was provided. This process was not videotaped regularly; however, the notes were made in the journal of the researcher, (e) a list of reinforcers that could be used for the student was prepared with the teacher, as it was noticed that the reinforcers used by the teacher lacked diversity, (f) it had actually been planned to deliver the written copy of training package after training; however, it was provided at the beginning of the training upon the demand of the teacher.

After DTT training, a new action plan was prepared according to the needs of the teacher determined in advance and the new needs found during DTT training. So, the teacher was provided with training of an hour as other educational practices as follows: (a) basic information relating to addressing behavioral problems was summarized briefly and the questions of the teacher were replied. It was decided that the teacher and the researcher intervene together to the displayed behavioral problems by the student during class observations. When the data were examined, it was found that this decision was followed. For example, during a class observation, the student wanted to take the reinforcer from the teacher and hit the teacher as the teacher was late to provide the reinforcer. In this case, the teacher was provided with feedback instantly and was reminded that she should provide the reinforcer right after the behavior, (b) upon the request of the teacher, she was provided with the skill checklist containing the basic target skills which was prepared by the researcher based on her experience and various checklists prepared in the field (e.g., Kırcaali-İftar, 2007; Lovaas, 2003). It was stated that the skills could be taught with DTT and the performance of the teacher was monitored during the succeeding days, with feedback provided instantly. In this process, data were not recorded regularly; however, researcher made notes in her journal, (c) the teacher was provided with written notes containing such issues and exemplary practices.

The manager of the center was invited to both training but she was not able to attend as she was too busy. She was provided with the written materials.

In addition to such action plans intended for the teacher, some educational practices took place with the mother as well although this was not the aim of the research. Because during her interview, the mother said that she needed information about how to deal with the behavioral problems and what to pay attention to while providing education at home. Three meetings of total 5 hours were held with the mother. During these meetings, information was offered through verbal lecture method within the framework of the questions of the mother. Such information can be summarized as follows: (a) the mother was asked to follow the program provided by the teacher, continuing practices at home. As the mother had difficulty and got angry while working at the table, she was told that she could work on the skills with her child by including them in the daily life at home. For example, she was explained that if the teacher is working on "matching/classification skill", she can have matching/classification practices at home while loading the dishwasher. Or, she was told, if the teacher is working on "showing the named fruits/telling", she can sing songs about it and she can provide exercises about this skill while shopping for

fruits together, (b) as the mother always used verbal cues and as the child displayed dependency on verbal prompts, the mother was explained to reduce verbal prompts and to use other prompts. Also, she was explained how to make the prompts fade, (c) it was suggested that they played plenty of games at home together like puppet and finger games and the mother was shown some exemplary games, (d) as the mother reported that the child started to "swear", the reason for this behavior was found. It was found that the mother was the model for this behavior and that the child attracted attention by swearing when the people around paid less attention to her. The mother was asked not to display this behavior and not to be a model for this behavior. Moreover, she was also recommended not to pay attention to the child when she swore and to ignore this behavior, (e) with regards to the fact that the student sometimes used the words "give", "I want" or the "pointing" gesture, and sometimes displayed the crying behavior when asking for an object and/or food, the mother was taught how to apply differential reinforcement. It was recommended to reinforce the positive behaviors of the child and to ignore the behavior of crying, (f) in order to deal with the crying behavior of the student that she displays when it is impossible to provide her with an object and/or food that she wants at that moment, the word "later" was taught, aimed at enabling the habit of waiting, (g) the importance of consistent behavior of everyone at home was emphasized. The mother was provided with written material covering these issues. The father did not attend such training. In addition to the training, brief interviews were made with the mother following each class observation, monitoring whether she applied the information provided and offering consulting services about the issues of difficulty. The mother was told that support could be provided when she needed.

Changes in the Performances of the Participants

Changes Found in the Performance of the Teacher: Qualitative data show that the teacher learned the method of DTT and she managed systematic teaching by applying it properly. For example, during the first class observation following DTT training, it was found that the teacher prepared teaching materials and various reinforcers. Data two months after the DTT training revealed that the teacher used DTT method systematically to teach both target skills and other skills. For example, the researcher's journals and field notes include the following expressions: "The teacher uses the DTT method correctly and comfortably, there is no issue", "she seems to have learned it very well and she applies it correctly every time. I am very happy and surprised. I always say very good, very good, well done", "the teacher works on receptive language applying DTT, no mistakes", the teacher can use reinforcers. She becomes happier as the student succeeds", "a month later stil doing the right teacher applications". During class observations and interviews, the teacher said: "I was not working systematically before; with this method I work more comfortably now", "we can teach anything by discrete trial method…", "… I use this method easily and I am not making mistakes anymore".

Quantitative data about DTT performance of the teacher also support qualitative data. Data for the teacher, showing her use of DTT skills baseline and posttraining sessions, are presented in Figure 1. During the baseline session for matching and playing skills, the teacher showed low percentage. The teacher's percentages for baselines were below 50%. In the post-training sessions for these skills, the teacher rapidly acquired DTT skills and achieved the completion criterion in one or two sessions. During 2-months follow-up probe, the performances of the DTT skills were maintaned at 100%.

Also, the quantitative data gathered following DTT training of the teacher during work on "expressive language skills /answer the "what is your name?" question", which was not included in target skills. According to these data, the teacher was able to demonstrate high level of implementation accuracy as follows: Post-training Session 1: 100%, Post-training Session 2: 100%, Maintenance Session: 100 %. In a similar manner, during the teaching session of 10 trials regarding receptive language skill which was applied two month later, the teacher's performance was found to be 100%.

In addition to these findings, it was also evident in the data that the teacher started to deal with the problem behaviors. For example, the teacher said, "We do not have problems about Lemon Girl book during lessons like we used to have. Before, I could not take it from her, she always cried, I could never teach any lesson. Now I can use it as a reinforcer very comfortably, there is no problem". The researcher's notes, on the other hand, contained sentences such as "the student wanted to take the objects on the teacher's lap but the teacher prevented this behavior immediately and gave the student a shape instantly, making her continue studying. Problem behavior did not occur", "the teacher ignored the problem behavior displayed by the student".
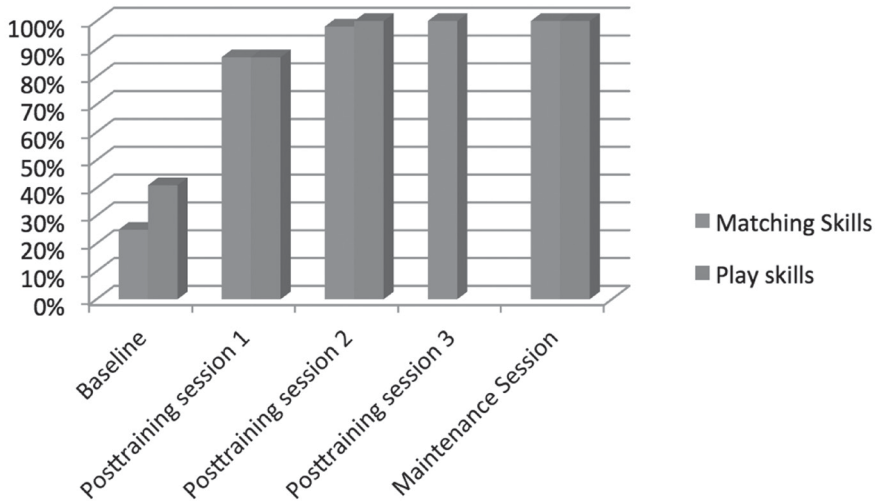
Figure 1.

Percentage of Discrete-trial Teaching Skills Implemented by the Teacher

In addition to all these, it was found that the teacher began to perform entertaining activities during sessions and between trials. Also, the reinforcers became more diverse. For example, data included expressions like "she is now playing with the student", "… the teacher played a game by making a puppet out of materials, the student did the same and they played", "the teacher uses different verbal and object reinforcers". Moreover, the teacher also stated that she used some of the information she learned (for example, use of reinforcers and cues) with mentally retarded students as well and that she benefited much from it.

Changes Observed in the Student: It was found that no problem behavior was observed in the student following implementation. She participates in the lesson and she does not display self-stimulating behaviors. Also, it was seen that the student participated in games played and tried to sing the song with the teacher. In addition, the data also point out that the student started to learn faster and easier. For example, the teacher said, "… she enjoys the lessons and wants to study", "you saw in the observations, too, there is no problem behavior left, we are relieved. We were unable to study especially because of her obsessions, now I can handle her obsessions comfortably. We can study more peacefully and happily, so she can learn faster and better", "she participates in lessons". Also, it was seen that the student improved in the target skills which are determined to teacher's DTT

training. For example, the teacher stated during the classroom observation that "look, began matching spoons", "very good, there is an increase incorrect responses "she insert all blocks into a shape sorter". Also, the teacher said that "I think she listens to me more carefully. She improves her IEP goals. For example, her receptive language skills progressing positively", "she looks so happy in the lesson". Also, the researcher's journal include the following expressions: "The student is very comfortable, there is no problem behavior.", "… The student started to communicate", "she participates in lessons", "the teacher asked to wait, she is waiting…".

In addition mother said that "… her attention to the surrounding has increased, her negative behaviors are decreased or disappeared. For example, she swears no more. When it is impossible to provide her with an object and/or food that she wants at that moment, she immediatelystart to cry. Now, she began to show the behavior of the waiting."

The Changes in the Mother: The mother, on the other hand, said that (a) she can study with her child without any strain and with pleasure at home, (b) she did not have any difficulty in deciding how to work with which skill, (c) she learned how to use the prompts and reinforcers, (d) she could engage in generalizing work including skills in the program given to her in daily activities. Moreover, she also mentioned that she could now handle problem behaviors in an easily. Some examples of mother's statements about these changes are

as follows: "Now I am working with my daugther easily at home, we both have started to have fun. In the past we used to study long time around the table and we got bored. My daughter started to show problem behaviors, I got angry. Now we are taking breaks periodically, we are making entertaining activities at the breaks, we are singing song. I am working mostly by embedding skills which they practice at the school, into her daily life activities". For example, if the teacher is working on "matching skills", I do matching practices at home while loading the dishwasher or organizing laundry drawers. Or, if the teacher is working on "showing the named fruits/telling", I can sing songs about it.", "she swears no more, because I ignore this behavior", "Now I am teaching with physical prompt. I am having something done by holding her hand, then I say well done. I bought muppets for home, we have started to play with them, it is very fun."

Opinions of the Participants on Educational Practices

The teacher stated that she learned much from the training, the contents of the training were aimed at her needs and met her needs. For example, the teacher said, "I can teach each skill easily and in a systematic manner now as compared to my former system of work", "There has been positive contributions of this education to me, other teachers should be informed too". Also, the teacher said that she can use what she learned with other students as well and she was pleased for participating in the training. Moreover, she mentioned that it is very useful that the provided training offered practice in addition to theoretical knowledge and the contents of the training were comprehensible and adequate. Finally, the teacher mentioned that this type of training needs to be widespread among more people benefiting from it. Some examples of teacher's statements are as follows: "I have started to use on my other students, I am more helpful thanks to this education", "applied education was very useful. More pratic, little theory. I think your presentation was very good. I think the information you gave was enough. Fortunately I attended, I am happy for attending in order to improve myself".

The manager of the center said that they were very pleased to have the opportunity to receive training within the scope of this type of research although she did not participate in training. For example, data included expressions like "I think this research is very useful for us. Thank you for all. Especially the teacher and mother learned many things. Seminars take place in big cities, we can't go all the time. We needed a face to face service like that. It was very good". Moreover, she also stated that this is the first time that a university offered this type of cooperation with them and she said "we are very happy about this cooperation".

The mother, on the other hand, said that the training offered to help her to develop herself, she learned information she did not know, some of the things she thought she knew were wrong and she had some incorrect practices before. In this way, she can work with her child more comfortably and with more pleasure at home and it became easier for her to deal with problem behaviors. For example, at the meeting held in June 2011 mother presented her opinions by saying "actually I learned how to work and how to behave with this education. I knew lots of things but I had difficulties in practicing them. It is more easy and fun now. I have benefitted from this education, but there are many things to learn."

Discussion and Conclusion

This action research addresses the educational practices arranged according to the problems and needs of a teacher providing education to a child with ASD and the effects of such educational practices. Moreover, the needs of the manager of the center and the needs of the participant child's mother are evaluated and practices took place.

The findings of the research revealed that the teacher faced some teaching and behavioral problems during teaching sessions, which she had difficulty in dealing with. It was found that the teacher needed to gain knowledge and skills in order to deal with these problems. These findings are in consistence with the literature which mentioned that problems and needs of the educators (Barnhill et al., 2011; Dempsey et al., 2009; Ludlow et al., 2007; Scheuermann et al., 2003; Syriopoulou-Delli et al., 2012; Vuran et al., 2003). During the research, action plans are prepared and implemented in order to solve the existing problems and meet the needs. Accordingly, the teacher was provided with training on the use of DTT and on the methods of dealing with behavioral problems. Trainings were planned and implemented by paying attention to the qualifications of the well-designed training as emphasized in the literature (e.g., Eikeseth, 2010; Kırcaali-İftar & Tekin-İftar, 2012; Koegel et al., 2011; Scheuermann et al., 2003). The results of the evaluation of action plans revealed that (a) the teacher learned DTT method with easily and

was able to teach systematically, (b) the teacher was able to deal with the problem behaviors effectively, (c) and the teacher started to pay attention to the instructional elements such as entertaining activities during sessions.The literature emphasizes that the knowledge and skills of the teachers will improve when well-designed training is offered. Within this scope, well-designed educator training programs in ASD field should be be aimed at the needs of the educators, be provided by professionals, be implemented as applied, be extended over a period of time so that the subject matters can be addressed comprehensively instead of short term training and be covered the knowledge specific to ASD. Also, trainings include the evidence-based methods for teaching skills and managing with problem behaviors. In addition, training programs must have consulting service following training (e.g.,Constable et al., 2013; Dempsey et al., 2009; Eikeseth, 2010; Ludlow et al., 2007; Salisbury & Wilson, 1997; Scheuermann et al., 2003; Vuran et al., 2003). In this research, attention has been paid to these points. Therefore, the development of the teacher may be interrelated with the training provided in this research. In addition, as also emphasized in the literature, the fact that the efforts were based on the cooperation between the researcher and the teacher could also have contributed to the development of the teacher (e.g., Carpenter, 2007; Dymond et al., 2006; Mills, 2003). Moreover, the high motivation of the teacher for self-development and the attitude of the manager of the center supporting the teacher and the researcher may also have played a role in such developments.

When other findings are examined, it is seen that some changes (e.g. some subject matters such as definition of ABA, type of reinforcement were added or explained in more details according to the needs of the teacher) were made in the DTT training package when actions plans were being implemented. Thus, this package was made more qualified and comprehensive for further training in consistence with the goals of the action research. As shown by the findings of this research, action research enables education programs become more qualified by readjustment of them in accordance with the needs. Thus, qualifications of educators having qualifed education increase (Dymond, et al., 2006; Ludlow et al., 2007; Mills, 2003).

Moreover, brief training containing essential knowledge on how to deal with the behavioral problems and how to provide effective education was provided to the mother according to her needs.

The findings revealed that the mother benefited from this training and she could continue her work at home in a better systematic manner. Moreover, it was also found that she was able to deal with problem behaviors more easily. And indeed, the important role of the training provided to the families is also emphasized in the literature (e.g., Berger, 2008; Bibby, Eikeseth, Martin, Mudford, & Reeves, 2001, 2002; Cavkaytar & Pollard, 2009; Crockett, Fleming, Doepke, & Stevens, 2007; Ingersoll & Dvotcsak, 2006; Karaaslan, Diken, & Mahoney, 2013; Kolko, 1984; Lafasakis, & Sturmey, 2007; Olcay-Gul, 2012; Smith, Buch, & Gamby, 2000; Symon, 2005; Ünlü, 2012; Ünlü & Vuran, 2012).

It is also a finding that the problem behaviors are no longer observed in the student and that the child started to learn more easily and faster. The positive changes in the student may be attributed to the fact that the teacher became more qualified and that the student started to receive education with efficient and evidence-based methods in consistence with the literature. Researchs shows that positive results of special education are provided by qualified teachers of children with ASD. Appropriate and qualified education can produce important gains for a large number of children with ASD (Dymondet al., 2006; Eikeseth, 2010; Lovaas, 2003; Salisbury & Wilson, 1997; Scheuermann & Webber, 2002; Smith, 2001; Vuran et al., 2003). Moreover, the training provided to the mother could also have played a role in the changes observed in the student as emphasized in the literature (e.g., Bibby et al., 2001, 2002; Cavkaytar & Pollard, 2009; Coolican, Smith, & Bryson, 2010; Olcay-Gul, 2012; Smith et al., 2000; Ünlü & Vuran, 2012).

In addition to these findings, the teacher, manager and mother, who participated in the research, said that they benefited from the training and they expressed their pleasure over participating in this research as emphasized in the literature (e.g., Cavkaytar & Pollard, 2009; Dymond, et al., 2006; Ludlow et al., 2007; Ünlü & Vuran, 2012; Vuran & Olcay-Gül, 2012). In other words, it can be said that the training provided is socially valid as well.

One notices the fact that there are few studies examining the training and training outputs of the educators working in the field of ASD especially from a qualitative perspective. Also, there is a need for research examining the training prepared as based on the needs of the educators (Probst & Leppert, 2008; Scheuermann et al., 2003). Therefore, this study may be considered as a study aimed at filling this gap in the literature.

The strengths of the study are especially that (a) it is based on cooperation between the researcher and the teacher, (b) it takes the needs of the teacher and the family into consideration; (c) it analyzes the effects and contents of the offered training in depth; (d) it shows how the data guided educational decisions and how they were used in new educational planning, (e) it contains the effective elements of training as defined in the literature; (f) it is applied with a center and a teacher with no chance of receiving any other training and with a need for training in this respect.

However, the study has also limitations: (a) this research was conducted in a small sample, so the results cannot be generalized to larger sample; (b) the student outputs were not measured quantitatively; (c) the quantitative measurements, which were aimed at evaluating the pre- and post-training use of DTT skills by the teacher, took place only for two skills. Moreover, the criterion for completion of feedback stage was making 100% on one session. Although other qualitative data showed that the teacher could use the DTT skills after one and two months of training correctly, the criterion for feedback stage could have exceeded one session; (d) as the research is not an experimental study, no cause-effect relationship is available for the changes in the participants, (e) no results about long-term effects of training, (f) procedural reliability could have all of the action plans.

As a result, despite its limitations, it is considered that this research may be guiding for the researchers and educators in preparing, implementing and assessing the impacts of training to be provided to the educators working in the field of ASD.

Moreover, it is also anticipated that this research can provide an idea about research implemented based on the cooperation between the researcher and educators. In the light of the limited qualitative research in this respect, new research is needed. Future qualitative research may include a greater sample size and be run over a greater amount of time. Moreover, systematic and quantitative measurements are needed for the progress in children. Finally, experimental research can be designed to determine the cause and effect relationships among the different variables.

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