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From the editors,

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Dear INT-JECSE readers and contributors,

We are excited to be with you with the second issue of the tenth volume of the INT-JECSE. We would like to extend our appreciations to all who contributes by submitting or reviewing manuscripts or have been readers of the INT-JECSE. In our second issue of the tenth year, you will find five articles on various topics of young children with special needs and their families or professionals.

The first manuscript was written by Rende-Berman, entitled "Increasing the Social Interaction of Two Children with Autism Spectrum Disorder and Their Peers", examined the effect of the Group Affection Activities (GAA) on social interaction of two preschool-aged children with Autism Spectrum Disorder (ASD) and their same aged peers. In addition to the music group activities, the main component of the GAA game learning activities and peer-training were integrated into the intervention. This including initiation of and responding to initiations through means of both verbal and nonverbal communication acts during free play. This study utilized a case study design with an ABAB model revealed that improved rates of social interactions were associated with the presence of the intervention. The findings agree with those reported by previously conducted studies, however the maintenance and generalization of improved interaction skills remain to be of a great concern. This intervention combining the Group Affection Activities with peer-training should be systematically integrated into early childhood curriculum and implemented for all to benefit.

Meacham and Almalki in the second manuscript studied Teachers' interactions with a young child. The purpose of this study was investigating teachers' interaction with a young child with ASD when they were using iPad to support language and communication skills development. A case study method was applied. Business-as-usual classroom interaction was analyzed. Utterances were divided into two conditions (iPad-use and non-iPad use) to compare effectiveness on supporting the child's engagement in teacher-child interaction. Results of the study indicate that child-teacher joint attention and teachers' verbal assistance happened more frequently when iPad was not used. In addition, surprisingly, teachers put a minor emphasis on iPad use for targeted instruction for language and communication skills development, different from their initial claim. These findings suggest that more professional development for teachers' iPad use in language and communication skills development should be provided.

In the third manuscript, Ozokcu investigated peer relationships of children with and without special needs in the preschool period. The aim of the study was comparing the peer relationships of preschool children with special needs with their peers without

special needs, to determine whether the special needs variable predicts the peer relationships of children or not, and examine the peer relationships of children with special needs in terms of gender and age variables. 56 preschool teachers and a total of 112 children, 56 with special needs and 56 without special needs, were enrolled in the study. The data were collected by using the Information Form and the Child Behavior Scale (CBS). The results of the study indicated that there were statistically significant differences between the children with and without special needs in prosocial behaviors, asocial behaviors, anxious-fearful behaviors, and hyperactivity behaviors subscale scores. However, there was no significant difference between aggression and exclusion behavior subscale scores. It is observed that being with special needs significantly predicts prosocial behaviors in favor of children without special needs, and asocial, anxious-fearful and hyperactivity behaviors in favor of children with special needs. The findings of the study support the requirement to develop effective intervention programs which will increase the peer relationships and peer acceptance of children with special needs in preschool inclusive classes.

The fourth manuscript written by Aktas and Ciftci-Tekinarslan aimed to determine effectiveness of the parent training program that was designed for the mothers of children with Autism Spectrum Disorders in enabling them to use the mand-model procedure. The study was conducted with the participation of 3 boys with Autism Spectrum Disorders and their mothers. As part of the study, the mothers were taught the mand-model procedure, which is one of the milieu teaching techniques. As a research method, the present study employed the subject research models of between-subject and multiple probe design models. The findings of this study suggested that the parent training program designed with a view to teaching the mand-model procedure was effective and consequently the mand-model procedure used by the mothers was also effective in teaching new words to the children with Autism Spectrum Disorders and enabling them to maintain such words over time.

With the title of "Empowering Mothers of Children with Special Needs in Early Childhood Inclusion", Bayrakli and Sucuoglu examine the development and evaluation of a needs based training program designed for the mothers of children with special needs enrolled in inclusive preschools in North Cyprus. Aiming to support them in overcoming the difficulties they experience throughout inclusion by empowering them as partners, present study employs a mixed methods approach with a dominant qualitative strand. Findings of the study suggest the program have positive contributions to participating mothers and their children.

Yours Sincerely,

Ibrahim H. Diken, Ph.D.
Editor-In-Chief

CONTENTS

Increasing the Social Interaction of Two Children with Autism Spectrum Disorder and Their Peers

 Zuhar Rende Berman [1]

Abstract

This study examined the effect of the Group Affection Activities (GAA) on social inter-action of two preschool- aged children with Autism Spectrum Disorder (ASD) and their same-aged peers. In addition to the music group activities, the main component of the GAA game learning activities and peer-training were integrated into the intervention. Five peers were trained on how to interact with the target participants of the study. This including initiation of and responding to initaiations through means of both verbal and nonverbal communication acts during free play. This study utilized a case study design with an ABAB model revealed that improved rates of social interactions were associat-ed with the presence of the intervention. The findings agree with those reported by previously conducted studies, however the maintenance and generalization of im-proved interaction skills remain to be of a great concern. It is suggested that in order to address this important issue, an intervention program combining the Group Affection Activities with peer-training should be systematically integrated into early childhood cur-riculum and implemented for all to benefit.

Keywords: Social interaction; Group affection activities; Autism Spectrum Disorder; Peer-training.

Introduction

As one of the greatest challenges of Au-tism Spectrum Disorder (ASD), the varied degrees of social communicative compe-tencies of children on the spectrum has been studied extensively (Bellini, Peters, Benner, & Hopf, 2007; Goldstein, Kaczma-rek, Pennington & Shafer, 1992; Mathews, Vatland, Lugo, Koenig & Gilroy, 2018; McEvoy, et al.,1988; Prendeville, Prelock & Unwin, 2006). Due to the lack of or limited communication and social skills, children with ASD have difficulty initiating, respond-ing to, and maintaining relationships with their typically developing peers as demon-strated in their play behaviors (Prendeville, et al., 2006). Observing the play behaviors of children with ASD provides clues

regarding their social communicative skills; as characterized by great challenges dur-ing symbolic and social play development (Wolfberg, DeWitt, Young, & Nguyen, 2014). As valuable as these play experi-ences with their peers. Children with ASD are at great risk of being excluded by their peers due to their lack of social interaction skills.

Westby (1991) noted that a child's play behavior provides a window into how a child perceives the social world. Social play requires children at various degrees of social competencies to communicate their intentions in a way that is understood by others so that interaction begin. Additional-ly, play requires a child to communicate and negotiate meanings and roles, set-tings, and adjust their behaviors according to these interactions (Westby, 1991).

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Children play in different ways based on how and with whom they play. All children engage in various types of play behaviors at different settings and times. As stated by Wolfberg et al. (2015), when children play by themselves, it is referred to as isolate play whereas when they are watching from distance called onlooker-orientation. Another type of play happens when two children engage in different activities adjacent to each other. This is called parallel-proximity play (Wolfberg et al., 2015). During parallel play, children generally do not try to influence other's play but may show interest in what others are doing. Social or interactive play, known as common focus play can be observed when two children play with each other and are engaged in "reciprocal" or "back and forth" play (McEvoy, 1985; Wolfberg et al., 2015). Common goal/ cooperative play exists when two children are engaged and collaborate with a common purpose (Wolfberg et al., 2015, p.831).

As previous research identified diverse social-partners have been employed to interact with children with ASD including teachers, psychologists, parents, siblings and typically developing peers at various settings (McConnell, 2002; Radley, Jenson, Clark and O'Neil, 2014; Rogers, 2000). The type of the social- partner, adult vs. peer also reported to be a critical variable to consider in examining the effect of the interventions. Although children with ASD reported to be responsive to interventions geared toward increasing their engagement with both adults and peers, the use of adults as partners in social interaction reported to be not easily generalized to peer partners which makes involving peers in interventions critical (Roger, 2000, p.401).

Increased understanding of (1) social communicative characteristics and needs of children with ASD (2) the importance of teaching these skills in natural settings where opportunities for incidental teaching/learning and meaningful interactions with peers are present puts a greater value on including typically developing peers in social interaction interventions (Radley, McHugh, Taber, Battaglia, & Ford, 2017). Another important factor that makes the inclusion of peers vital is the fact that has been a dramatic increase in both the number of children being diagnosed with ASD and those included in regular education settings. If not addressed, the lack of social communicative skills may ultimately lead to increased maladaptive behaviors, which impede a child's overall well-being including having positive educational experiences, as well as healthy social/emotional development such as building positive peer relationships, nurturing and maintaining a sense of belonging.

Studies in the field included a range of interventions targeted to improve the social interaction between children with ASD and their peers (DiSalvo & Oswald, 2002; Matson et al., 2007; Prendeville et al., 2006; Sivaraman & Fahmie, 2018). To a great extent, these studies have been examined for their effectiveness (Bellini et. al., 2007; DiSalvo & Oswald, 2002; McConnell, 2002; Rogers, 2000) and were reported to be impacted by a number of various factors. These factors include the type of activities used (McEvoy & Odom, 1987, Radley et al., 2017); the interaction with a specific peer and the number of peers included (Belchic & Harris, 1994); the setting (Honig & McCarron, 1988; Radley et al., 2017); and the types and combination of strategies utilized (Radley et al., 2017).

Among many interventions including peers, peer-mediated interventions are reported to be effectively employed in increasing the social interaction of children on the autism spectrum with their typically developing peers (DiSalvo & Oswald, 2002; Mathews, et al., 2018) in inclusive education settings (Goldstein, et al., 1992; Rogers, 2000). These interventions included peers as social- partners with diverse roles assigned across studies, and peer-training as the main component of the intervention (Mathews, et al., 2018). The variations reported in the planning and the implementation of peer-training including type, duration, skills taught, the nature of assigned roles, expectations of and from the peers make this component the most critical variable that directly impacts the outcome of the intervention. For instance, in some studies, peers were taught to initiate a social interaction and/or were taught to respond to a social communicative initiation of a child with ASD whose initiation might have been prompted by another person (Rogers, 2000, p.399). Peer-training programs are also reported to include diverse types of modelling and reinforcement strategies (Matson et al., 2007). Although, generally they are reported to have positive outcomes, the maintenance of the improved social interaction skills and the generalization of these

skills to diverse social- partners (DiSalvo & Oswald, 2002), and to additional settings remain a common concern (Mathews et al., 2018).

Planning and implementation of social interaction interventions that employ peer-mediated approaches including peer training in early childhood settings require intentionally planned activities that align with the context, more specifically engaging, fun and inclusive in nature. The Group Affection Activities (GAA) used by Twardosz, Nordquist, Simon and Botkin (1983) were intrinsically reinforcing by engaging both children with autism and their peers and were also easy to integrate into the classroom activities (as cited in McEvoy et al., 1988, p.193). Another intervention model as suggested by Wolfberg et al. is the Integrated Play Group (IPG) that integrated peer-training as well interactive activities during play (2015). The IPG model promotes social communication, reciprocity and relationships through symbolic play (Wolfberg, 2015). In addition to improved social communicative skills, IPG aims to promote social-emotional gains such as awareness of diversity, knowledge of and acceptance of individual characteristics and differences as well as empathy toward others (Wolfberg et al. 2015, p.831).

Twardosz et al., (1983) utilized the GAA to increase the peer interaction of 3 preschool-aged children who had developmental delays. The implementation of the GAA included discussions on the importance of friendships as well as showing affection and included preschool games and songs which were fun and engaging. Researchers reported that participants of the study who were previously isolated, during the intervention participated in activities and interacted with their peers during free play. Twardosz et al., (1983) asserted that the GAA provided the participants with opportunities to interact with their peers during pleasurable experiences, which in turn may have contributed to the development of new skills through facilitation during free play.

McEvoy et al. (1988) systematically replicated the Twardosz et al., (1983) study, assessing the effectiveness of the GAA on promoting and increasing the social interaction of 3 children with autism with their typically developing peers in a kindergarten setting. The McEvoy et al. (1988) study did not have the same emphasis on "discus-

sions about friendship and showing affection" at the degree that was used in the original study. They expanded on Twardosz et al., (1983) implementation of the GAA by utilizing the intervention to children with more severe disabilities, and by including more comprehensive measures of peer - interaction including the type, duration and the nature of interactions. McEvoy et al. focused on increasing the reciprocal peer interaction of children with autism (1988). The GAA included playing games and singing songs such as "If you are happy and you know it" and "Duck-duck-goose". During these activities, participants were asked to show affection through following verbal prompts such as "hug a friend, give a high-five, and pat your friend on the back". Data was collected for any unprompted verbal/nonverbal contact that lasted at least for 3 seconds. Researchers reported that the GAA were effective in increasing the peer interaction of the 3 participants with autism and their typically developing peers during free play, however this impact of student interaction was not present when similar activities without the affection component were used (McEvoy et al., 1988).

Considering that limited and inadequate social communicative skills of children with ASD have a lasting impact on all aspects of their lives, and the importance of early intervention, this study aimed to investigate the effectiveness of GAA on increasing the social interactions of 2 children with ASD and their peers. The implemented GAA incorporated game learning activities and peer-training into the intervention program. The current study was a systematic replication and extension of the studies by Twardosz et al. (1983) and McEvoy et al. (1988).

Method

Participants
The participants of this study were 7 preschool-aged children enrolled in a half day intervention program that was conducted 5 days a week at a Speech and Hearing Foundation. They were receiving speech and language services provided by a speech language pathologist acting as their classroom teacher. Out of the seven children, two children, Mike and Ward who were diagnosed with ASD were identified as target participants while the other 5 chil-

dren were included in the peer-training program as social-partners.

Mike, 4 years 11 months old, had a normal, healthy appearance but exhibited significantly limited social communicative skills. More specifically, his speech was limited with single words, used echolalic speech and had limited vocabulary Mike exhibited neither an interest nor an attempt to engage with his peers. As reported by his teacher and the researcher, he demonstrated strong dislike for physical proximity with others, which is a crucial component for successful social interactions during play. He rarely showed interest to play with toys and lacked the ability to use materials appropriately without teacher prompting. Mike followed one-step instructions with adult verbal or physical prompts as needed. His teacher stated that, Mike reacted to minor changes in the environment with extreme distress. He had some repetitive body movements such as arm-waving and displayed poor eye-contact. Mike was able to read and write but was not, yet toilet trained. Mike's Test of Early Reading Ability score fell in the 94th percentile for his age. His recognition of sight words was at the first-grade level.

The second target participant of the study, Ward, 4 years 11 months old, also had the diagnosis of ASD and demonstrated similar characteristics that were exhibited by Mike. However, Ward's social communication was more severely impacted by his speech production and the lack of social skills. In addition, Ward's speech was less intelligible, and used fewer vocabulary than Mike. He demonstrated no interest to engage with his peers and required both verbal and physical prompts to participate in activities. While he could read and write some sentences and complete basic mathematical processes, he was also not toilet trained. Ward's word recognition was at second grade level. Ward exhibited severe signs of distress at times, signs of over stimulation, and difficulties communicating his frustration. He had meltdowns that lasted up to 20 minutes at times for no apparent reasons. Yes, Mike and Ward had a diagnosis ASD. Unfortunately, their scores on the Autism scale were not available to me.

Mike and Ward's peers were 5 male classmates also receiving speech and language services in the same classroom. Two of them had speech production (articula-

tion) difficulties and language delays, while the other three had only language delays. They ranged in age from 3 years 11 months to 5 years (mean being 4 years 6 months). Even though the targeted peers had speech production and language delays, none were at a degree that impacted either their social engagement or interest to play with others. The researcher observed the targeted peers initiating interactions, requesting and sharing toys, playing in a close proximity, and showing interest to participate in the group activities. A group of 6 children who were also receiving speech and language services at the Speech and Language Foundation shared the playground daily at the same time period, during free play. This group of untrained-peers' initiations and/or responses to initiations by Mike or Ward were also recorded as interactions (N=6).

Setting
For the purpose of this study, all participants were observed for their interaction, and the intervention implemented in either the classroom where all daily activities were conducted by the same teacher at the Speech and Hearing Foundation, or at the playground where free play took place. Group Affection Activities including game-learning activities, peer-training and musical group activities were conducted in the classroom. On sunny days, free play took place following the musical activities in the playground on sunny days or in the classroom during inclement weather. The classroom teacher was a speech language pathologist and was assisted by an instructional assistant at all times.

Experimental Design
Observation and data collection.
Prior to the baseline data collection, the researcher conducted an interview with the classroom teacher, and for two weeks, observed all participants focusing on their social interactions during play in both the classroom and playground. During this period, all participants were engaged in activities as part of their curriculum. No attempts were made to encourage them to engage or facilitate any social interaction during activities.

In this study, a case study design employing an ABAB model was used. As stated by Alnahdi (2015) through introducing and withdrawing the intervention, this de-

sign provides the means for the effectiveness of the intervention to be assessed reliably (p. 260). Participants were observed, and data was collected during both baselines and interventions during free play. Interaction behaviors of the participants were observed, and data was collected for baseline (1) for 8 days; intervention (1) for 9 days; baseline (2) for 3 days and intervention (2) for 4 days. The intervention program included the following components that were implemented daily for the periods noted: game learning activities were 15 minutes in length and were conducted for 15 minutes first 3 days of the implementation; musical group game sessions were 15 minutes in length; and peer-training sessions were 15 minutes in length. For the baseline phase(s) of the study, the intervention program was removed, and data collected during free play.

As part of the data collection, observed behaviors were scored as either (+) or (-) as defined by McEvoy et al. (1985). Sharing, organizing a play, assisting, receiving a share or assistance from another participant, speaking to or touching another participant as a nonverbal initiation act for interaction behaviors were scored as a plus (+). On the other hand, behaviors such as playing by himself, sitting with his back turned to his peers, observing other's behaviors and talking to himself were marked as a minus (-). Any social engagements with untrained peers were scored as a plus (+) (McEvoy et al., 1985).

Procedures
    Baseline.
Baseline observation and data collection of social interactions between targeted participants and their same-aged peers were obtained daily at the same time, during free play at the playground. Data was recorded by the researcher using score sheets and a timer. Participants were not provided with any types of prompts including verbal encouragement to play together. The baseline (1) data was collected for 8 days, while baseline (2) data was collected for 3 days. Mike was absent on the 3rd day of the baseline (2) data collection.

    Interobserver agreement.
Prior to data collection, the researcher and the teacher met and reviewed the interaction behaviors which were specifically defined and the descriptive criteria of scoring.

Both the researcher and the classroom teacher had similar advanced education and training in speech and language pathology. Therefore, they had a common understanding of the interactive behaviors from the social and communication perspective. They independently observed and recorded the data for the duration of each 10-minute session.

Inter-observer reliability is the consistency of data collection reports among independent observers. The coefficient of reliability is determined by the formula of dividing the number of agreements and multiplying by 100 (Alberto & Troutman, 1990). Each observation session was divided into 40 intervals. A partial interval recording system was utilized in which 10 seconds were taken to observe and five seconds to score utilizing a timer. Interobserver agreement counted for 62% of baseline (1) and 25% of intervention (1). Interobserver agreement for Mike during baseline (1) was 95%, and for intervention (1) determined to be 100%. For baseline (2), inter-observer agreement was 100% for both Mike and Ward. For Ward the agreement during baseline (1) and intervention (1) was 100%. Interobserver agreement was calculated for baseline (1-2) and intervention (1) using the same formula.

Intervention
During the implementation of the intervention, the researcher was assisted by a speech and language pathologist who was assigned as the classroom teacher. This study implemented the Group Affection Activities consisted of game learning activities, peer-training and musical group activities. These activities were planned and implemented in sequence to provide participants with ample opportunities for interaction and engagement. Activities were intentionally sequenced so that the newly introduced behavior would be reinforced and independently imitated/practiced with no time delay during free play. The GAA were utilized for the duration of 9 days for Intervention (1) and 4 days for Intervention (2) phases. Three days of structured game learning activities were implemented during first 3 days of the Intervention (1). The musical group activities were implemented during both Intervention (1) and (2) in a less structured manner right before the free play period.

Game learning activities.

Game learning activities were implemented for the first 3 days of the intervention, 15 minutes a day, prior to free play period. Game learning activities were planned and implemented by the researcher. During these activities, participants were provided with both verbal instructions and demonstrations on how to play together and also opportunities to practice the modelled behaviors. For example, all participants were instructed on how to play a ball game during which all participants were actively included. In this particular game, they were required to call each other's name prior to tossing the ball into the air for that participant to catch the ball. Through this game, social communicative skills such as name calling, eye contact, body positioning and proximity, responding, and requesting were taught, modelled and reinforced in a context of fun and engaging play.

Peer training.

During peer-training, 5 classmates of Mike and Ward were trained for 15 minutes a day on how to interact with Mike and Ward who were diagnosed with ASD. The purpose of the peer-training was to inform the peers on how to interact with others and to empower them to be able to show others how to engage in interaction "as little leaders" (McEvoy et al., 1985). Peer-training included teaching verbal and nonverbal acts of social initiation of interaction during play, adult modeling of initiations of interactions during play, and responding to any initiated interactions by targeted participants and encouraging them to participate in play. More specifically, any act toward a peer with an intent of social interaction such as touching, holding hands, asking for a toy or sharing, requesting attention, showing intent to engage were among desired target behaviors. During the training, the researcher utilized both verbal and physical prompting, modeling, role play with feedback and praising strategies. The training activity was conducted during a time period in the classroom when Mike and Ward were scheduled to participate in an activity in another classroom.

Musical group games.

The musical group games component of the intervention was implemented for 9 days during Intervention (1) and 4 days during Intervention (2) which also lasted 15 minutes a day. Two musical games were implemented by the classroom teacher including all participants of the study. These games were "Duck-duck-goose" and "London Bridge" as referenced by McEvoy et al. (1985). The song of six little ducks was played and sung during the "duck-duck-goose" game, and the "London Bridge" game was played by singing the song as well.

The desired social interactive behavior was defined as a verbal or nonverbal initiation or response to an initiation of an interaction by others. Even though, the participants were taught to initiate through use of verbal and nonverbal prompts, during the observation of the interactions among Mike, Ward and their peers, initiations and responses were not differentiated, and were not specifically recorded in this study, Verbal prompt is simply an instruction to the child telling him/her what to do (McEvoy et al., 1988). As appropriate in the context of play, prompts such as "it's your turn", "call Mike", "hold his hand" were also provided by the teacher. Reinforcement of the targeted social interactive behaviors was also another important component of the program. Social reinforcement such as verbal praise ("you did it" and "I am proud of you") and physical contact ("high five", "pats on the back" and "hug") were provided right after expected behaviors occurred. In addition to verbal prompts, modelling and physical prompts as means of demonstrating the appropriate way to initiate were employed. For participants who needed more support than modeling, physical guiding was provided by verbally explaining and physically assisting them through the appropriate behavior (McEvoy et al., 1988).

Free Play.

During free play period, the social interaction behaviors of Mike, Ward and their trained-peers were observed for 10 minutes and recorded as either a plus (+) or minus (-). In order to control any possible impact of an external factor, the participants had access only to balls to play with and the playground equipment. In addition to trained-peers, the presence of untrained-peers who shared the playground during free play provided Mike and Ward with additional opportunities to interact with others.

Results

Mike and Ward's social interactions with their peers were the primary dependent variable included in this study. Mike and Ward's number of interactions with their peers (trained- and untrained peers) during free play for the baseline (1-2), and intervention (1-2) are presented in Table 1. Both target participants of the study, Mike and Ward interacted more often with their peers during free play for intervention when the GAA (game learning activities, peer-training and musical group activities) were implemented than baseline when intervention was removed.

Table 1.
The Number of Interactions Mike and Ward had with their peers during free play

Participants	Baseline1 Expected-1	Intervention1 Observed-1	Baseline2 Expected-2	Intervention2 Observed-2	Total
Mike	15	78	5	24	122
Ward	0	31	2	7	40

In addition to Mike and Ward's interactions with trained-peers, Table 2 also shows the number of interactions Mike and Ward had with their untrained- peers during free play. Out of a total of 13 days of Intervention (1-2), Mike and Ward interacted with their untrained-peers only on 3 days during free play. Ward had a total of 5 interactions as he interacted on 2 separate days, while Mike had 4 interactions on the 8th day of the Intervention (1).

Table 2.
The Number of Interactions between Mike and Ward, and their Untrained-Peers

Intervention (1)	Targeted Participants	
	Mike	**Ward**
Days	**Number of Interactions**	
Day 2	---	3
Day 8	4	---
Day 9	---	2

Social interaction data of the targeted participants are presented in Figures 1 and 2. Figure 1 illustrates the frequency of the social interactions between Mike and his peers during free play. Mike's scores ranged from 0 to 28.

Figure 1.
The number of peer interactions Mike had during free play for baselines and interventions.

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DOI: 10.20489/intjecse.506844
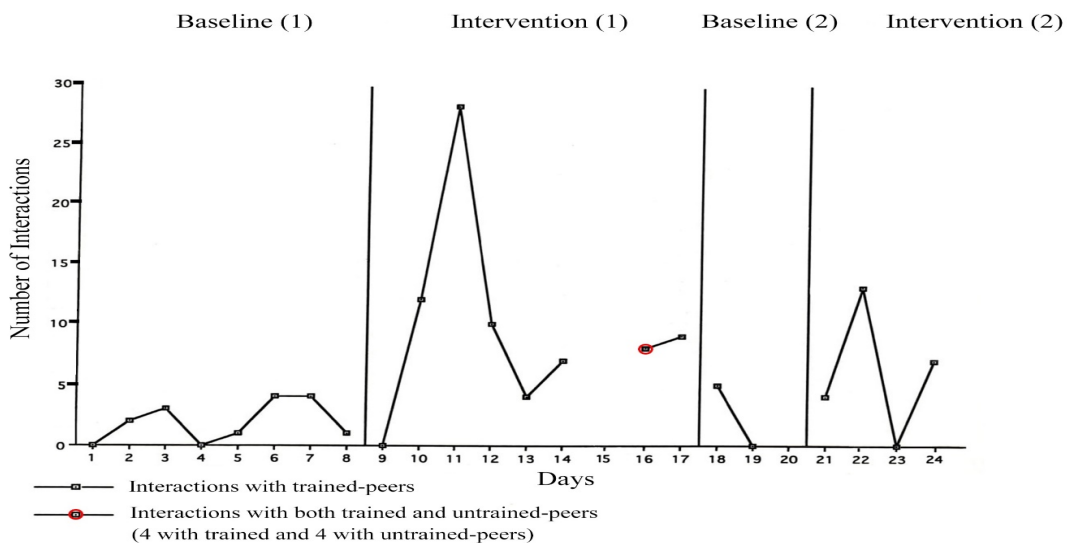
Ward's frequency of social interactions with his peers during free play is illustrated in Figure 2. Ward's scores ranged from 0 to 12.

Figure 2.
The number of peer interactions Ward had during free play for baselines and interventions.
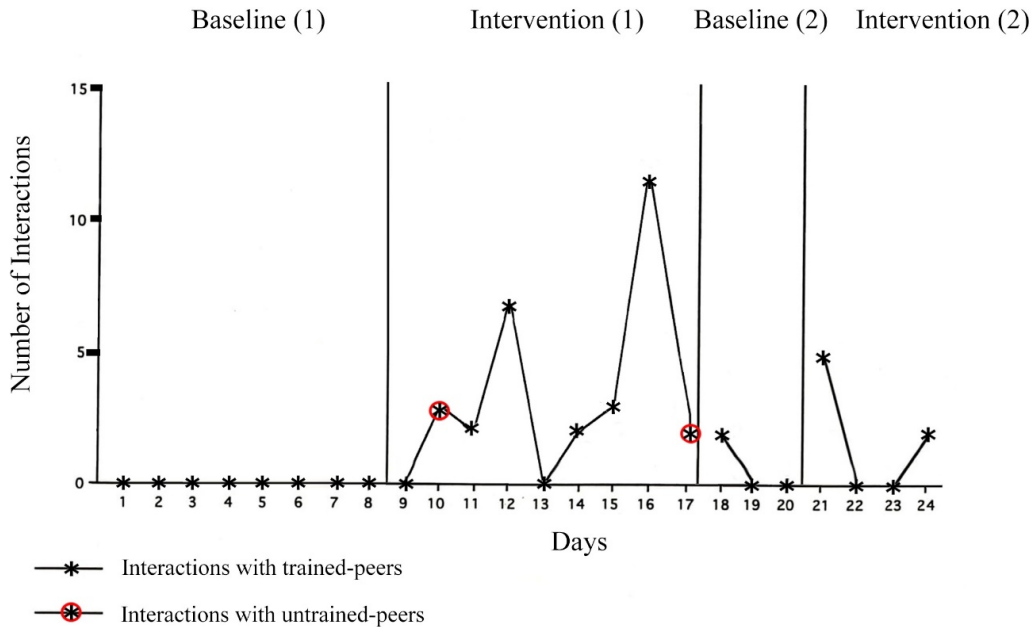
A Chi-square test of independence was performed to examine possible differences between the expected and observed data collected for the baseline and intervention phases on Mike and Ward's social interactions with their peers during free play. The test was performed for both within and across subjects to determine whether or not any difference in observed social interaction was at a significant level. Initially, within subject analysis was conducted including Mike's A1-B1 and A2-B2, and Ward's A1-B1 and A2-B2 expected and observed interaction data (see Table 3 and Table 4). For the purpose of determining whether or not the observed and expected data across participants was significantly different, the data was analyzed for A1-B1 and A2-B2 phases (See Table 5 and Table 6). The data was presented in both contingency and calculated expected frequency tables. An alpha level of .05 was used for all statistical tests.

The results of the Chi-square analysis are presented below. As seen in Table 3 and 4 the difference between Mike's expected (baseline) and observed (intervention) interactions was not significant at alpha .05, $X2 (1, N = 122) = 0.200, p < .05$.

Table. 3.
A 2 x 2 contingency table illustrating the frequencies of Mike's expected and observed social interactions with peers during free play for baseline and intervention phases

	Observed (Intervention)	Expected (Baseline)	
1	78	15	93
2	24	5	29
	102	20	122

Table. 4.

A 2 x 2 contingency table illustrating the calculated expected frequencies of Mike's social interactions with peers during free play for baseline and intervention phases

	Observed (Intervention)	Expected (Baseline)
1	77.8	15.2
2	24.2	4.75

(Chi-square = 0.200 E-01, df = 1, *p* = 0.888)

Table 5 and 6 presents Ward's data included in the analysis. The analysis revealed a significant difference between observed and expected values at alpha 0.05 $X2(1, N= 40) = 7.25, p<.05$. This difference was significant even at alpha .01 level, $p<.01$.

Table. 5

A 2 x 2 contingency table illustrating the frequencies of Ward's expected and observed social interactions with peers during free play for baseline and intervention phases.

	Observed (Intervention)	Expected (Baseline)	
1	31	0	31
2	7	2	9
	38	2	40

Table. 6.

A 2 x 2 contingency table illustrating the calculated expected frequencies of Ward's social interactions with peers during free play for baseline and intervention phases.

	Observed (Intervention)	Expected (Baseline)
1	29.4	1.55
2	8.55	0.450

(Chi-square = 7.25 E-01, df = 1, p = 0.007)

The data across participants was analyzed independently for the first (B1 & I1) and the second phases (B2 & I2) of the study. There was a difference on measured variables across participants. The difference between Mike and Ward's expected and observed number of interactions with their peers for baseline –1 and intervention -1 phase was significant at alpha .05 level, $X2(1, N=124) =5.69, p<.05$ (See Table 7 & 8). This difference was significant even at alpha .01 level, $p< .01$.

Table. 7.

A 2 x 2 contingency table illustrating both Mike and Ward's frequency of expected and observed social interactions with peers for baseline-1 and intervention-1 phases.

	Observed (Intervention1)	Expected (Baseline1)	
Mike	78	15	93
Ward	31	0	31
	109	15	124

Table. 8.

A 2 x 2 contingency table illustrating both Mike and Ward's calculated expected frequencies of social interactions with peers for baseline-1 and intervention-1 phases.

	Observed (Intervention1)	Expected (Baseline1)
Mike	81.8	11.2
Ward	27.2	3.75

(Chi-square = 5.69, df = 1, *p* = 0.017)

As seen in Table 9 and 10, there was no significant difference across participants on measured variables for baseline-2 and intervention-2 phase $X2(1, N= 38) =0.113, p>.05$.

Table. 9.
A 2 x 2 contingency table illustrating both Mike and Ward's frequency of expected and observed social interactions with peers for baseline-2 and intervention-2 phase.

	Observed (Intervention2)	Expected (Baseline2)	
Mike	24	5	29
Ward	7	2	9
	31	7	38

Table. 10.
A 2 x 2 contingency table illustrating both Mike and Ward's calculated expected frequencies of social interactions with peers for baseline-2 and intervention-2 phase

	Observed (Intervention2)	Expected (Baseline2)
Mike	23.7	5.34
Ward	7.34	1.66

(Chi-square = 0.113, df = 1, p = 0.736)

The baseline interaction data for Mike and Ward was consistent with the descriptive characteristics observed by the researcher prior to the baseline data collection. This data was reflective of the limited social communicative interactions Mike had with his peers, as well as more severe social communicative limitations - almost no interactions Ward demonstrated. As demonstrated in Figure 1 and 2, the increase in the Mike and Ward's interactions with their trained- and untrained- peers followed a similar pattern.

Results of this study supported the findings of the study by McEvoy et al. (1988) findings that the GAA are effective in providing opportunities for children to interact which lead to increased social interaction of children with ASD and their same-aged peers.

Discussion

The results of this study provide strong evidence that the Group Affection Activities, in addition to game learning activities and peer-training were effective in increasing the social interaction of two participants with ASD and their -trained and untrained-peers. The results of this study supported previous studies by Kamps, Leonard, Vernon, Dugan, Delquadri, Gershon, Wade, and Folk (1992), McEvoy et al., (1988) and Twardosz et al., (1983) illustrating that social interaction can be increased through shared group affection activities. Stain et al. (1985) reported that through implementing programs embedding peer-training into the intervention, participants' peer interactions were significantly increased.

This study systematically replicated the study by McEvoy et al. (1988) and modified the intervention to maximize its effectiveness in order to increase the interaction of 2 preschool-aged children with ASD and their same-aged peers. More specifically, the GAA was modified with the addition of game learning activities that employed through the use of direct instruction strategies in a structured manner. These game learning activities were implemented for the first 3 days of the intervention and prior to the musical game activities. In addition to the GAA, the impact of the game learning activities is believed to have contributed to the increased social interactions during free play.

The observed increase in interactions among peers were reported to be results of interventions that (1) employed group activities that were engaging, (2) provided opportunities to interact, and (3) utilized strategies involving peer training, facilitation of language, modelling and reinforcement, therefore there is no question that these types of interventions are effective. Although other studies reflect variations in regard to procedures and behaviors observed, there are more similarities with respect to the settings and the type of activi-

ties observed. Despite these differences, these studies provide sufficient evidence on the characteristics required for an intervention program to be effective.

Although the targeted participants were similar to those included in the study by McEvoy et al. (1988), this study included targeted -peers who were not typically developing and instead exhibited speech and language delays. With these differences in mind, researcher suggests that the results obtained were encouraging and hold promise regarding the inclusion and training of peers with mild social communicative difficulties to act as social-partners to their peers with more severe social communicative competencies.

For baseline (2), the first day interaction data suggested a carry -on effect from the intervention (1) which dropped to no interaction on the second day as the intervention was removed. The interaction during intervention (2) followed somewhat a similar inconsistent number of interactions. These variations in Mike and Ward's interactions might be due to the fact that children with ASD exhibit inconsistent and varied degrees of interaction in social context. However, it is also important to note that the decreased or lack of interaction by Mike and Ward on the same day might be due to an external variable. This consistent pattern across participants includıng the absence of social interaction should be examined and any possible external variable should be controlled for.

It is important that the data for baseline 2 and intervention 2 is interpreted cautiously due to fewer days of baseline observation and intervention being implemented than the previous phases. The overall data regarding Mike and Ward's interactions with their trained as well as untrained-peers viewed as being inconsistent within the subjects, however consistent across subjects. During the intervention 1 and 2 the participants' interactions increased while on other days dropped or did not exist. The researcher does not have a clear explanation for this consistency across subjects regarding the variation; unless the intensity of the intervention might have created the peak points for both subjects at the midpoint of the intervention 1. It is unknown whether or not the similar pattern on interactions would have been observed if the intervention 2 was implemented for 9 days but not 4.

Likewise, patterns of persistence observed in interactions of both Mike and Ward during free play were consistent with those have been reported in previous studies, however the researcher shares the same concern of maintenance of these interactions after the removal of the intervention. In addition to the maintenance of the skills acquired, the generalization of these skills to other settings and peers needs to be examined. Related studies have been examining the interaction types, their duration and the quantity of the interaction, but neglected the quality of social interaction which has a greater impact on the overall social, communicative and cognitive development of young children during early years.

Limitations

Several cautions to the interpretations of the results of the study are in order. First overgeneralization should be avoided because of the small sample size of the study. Secondly, unlike many studies that implemented interventions that included typically developing peers in order to increase the social interactions of children with ASD, the findings of this study may be limited by the fact that trained-peers themselves had mild speech and language difficulties. Despite the fact that trained-peers were not typically developing, and the setting was not inclusive, the increased interactions reported in this study were very encouraging as they were similar to those reported by McEvoy et al. (1988). Thirdly, the data collected in this study was limited to whether or not an interaction was present. The observations did not differentiate the types of interactions such as: initiation of an interaction; response to an initiation by a peer; or if the social communicative act was verbal or nonverbal. This decision was made with consideration of the characteristics and needs of the target participants. The researcher asserts that the targeted skills of interaction were appropriate for the participants who had few to no interactions without adult prompting. In addition, the characteristics of the targeted- peers were also factored in this decision.

Conclusion

Regardless of the social, communicative and cognitive competencies of children,

most of them enjoy engaging in play behaviors, organizing games, holding hands, and dancing to a tune they hear. It is important to train peers to apply strategies that are naturally a part of their repertoire in order to maximize the acquisition of new social communicative skills and reinforce them through natural opportunities. It is in this way that they are internalized and become a child's own. The implementation of the GAA encouraged increased engagement and facilitated enjoyment through affection, which resulted in increased level of interaction for all participants. This impact can be explained by the fact that musical group games integrate music, movement, turn taking, fun, social interaction, sharing, touching which are integral part of early childhood development.

The decrease in interactions when the GAA was removed directed our attention to a more fundamental question: *Should these social communicative skills be taught through interventions or, through natural processes and opportunities of interaction in their daily environments?* The answer to this question creates an urgency to refocus and consider the nature of early childhood development. The acquisition of social communicative skills is developed through a process of engaging in opportunities of structured and unstructured activities in natural settings as they interact with their peers for years, rather than through implementation of short-term interventions.

As it has been studied at a great extent, it is important to continue investigating the effect of intervention programs that are easy to integrate into early childhood curriculum in order to improve and maintain the acquired social communicative skills following an intervention. Extending these short-term effective interventions conducted with a small number of children to a comprehensive early childhood curriculum as a critical embedded component, and their school wide implementation urgently needed. This shift in focus requires further dialogues and inclusion of training programs into special education and early childhood teacher preparation programs; infusion of well-coordinated, inclusive studies into early childhood curriculum; their experimentation at a larger scale as well as extending their benefits to both home and community settings.

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Teachers' Interactions with a Young Child with: Comparing iPad and non-iPad Use

Abstract

The purpose of this study was investigating teachers' interaction with a young child with ASD when they were using iPad to support language and communication skills development. A case study method was applied. Business-as-usual classroom interaction was analyzed. Utterances were divided into two conditions (iPad-use and non-iPad-use) to compare effectiveness on supporting the child's engagement in teacher-child interaction. In addition, interviews with teachers were conducted to collect more information about their own perspectives regarding iPad use with the student with ASD. Results of the study indicate that child-teacher joint attention and teachers' verbal assistance happened more frequently when iPad was not used. In addition, surprisingly, teachers put a minor emphasis on iPad use for targeted instruction for language and communication skills development, different from their initial claim. These findings suggest that more professional development for teachers' iPad use in language and communication skills development should be provided.

Keywords: ASD, iPad, Teachers' Interaction, Language Development.

Introduction

Technology has changed the way that children learn; many schools are using technology as a teaching tool to develop positive skills and interactions. Student with Autism Spectrum Disorder (ASD), too, can benefit from using technology to learn new skills or behaviors. iPad use, specifically, can make the education process efficient (Dhir, Buragga, & Boreqqah, 2013). The roles of classroom teachers, when it comes to utilizing technology tools with students with ASD, however, has yet to be discovered. In the current study, therefore, we emphasize teachers' language use, analyzing whether or not (and how) the child with ASD verbally interacted with the teacher. In addition, we analyze whether or not the joint attention between the child and the teacher was established, which is an important aspect of language for communication pragmatics. More specifically, we describe how teachers' language use is associated with iPad use when they work with the child with ASD in one-to-one sessions.

Conceptual Framework and Relevant Research

Social Interaction using technology support with children with ASD in classroom

Both the basic learning theory and curriculum adaptation theory provide an aspect of theoretical foundation for this study (Fernández-López, Rodríguez-Fórtiz, Rodríguez-Almendros, & Martínez-Segura, 2013). Successful learning requires well-designed and well-managed instruction, as well as the engagement of the students. Technology tools with well-designed and well-managed instructions can enhance engagement of all children because of their adaptability that allows differentiation to meet individual needs and abilities. Furthermore, augmentative and multimodal aspects of available technology tools such as iPads and tablet PCs can support communication needs, which is significant for children with ASD. In particular, iPad-enhanced augmentative and alternative communication (AAC) systems such as the

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Picture Exchange Communication System (PECS; Frost & Bondy, 2002) and Speech Generating Devices (SGD; American Speech-Language-Hearing Association [ASHA], 1997) can facilitate independent communication of children with ASD in learning-teaching contexts.

Sociocultural learning theory (e.g., Vygotsky, 1978) emphasizes social activity as an important vehicle for learning, which becomes the most important conceptual foundation for this study. According to Vygotsky (1978), interactions between a learner and the more capable other(s) in the zone of proximal development make learning happen. A school classroom is a main context under which children develop social relationships with their teachers and peers. In order to develop high quality classroom achievement, teachers should focus on the way they interact with children (Burchinal, Vandergrift, Pianta, & Mashburn, 2010; Howes et al., 2008). Specifically, when teachers are responsive and sensitive to children's needs, they can help children to perform well on social skills, academic skills and language skills (Mashburn et al., 2008; Prescott, Jones, & Kritchevsky, 1972). It is also a primary in providing opportunities for children to experience a sense of belonging, which is a main element in emotional and physical health (Madill, Gest, & Rodkin, 2014). Children achieve high intrinsic motivation for learning when they feel they are connected to their educators and classmates (Furrer & Skinner, 2003). Teacher-child interaction gives students a sense of security, when a teacher puts in effort and genuine interest in helping a child if he/she is struggling (Pianta, 2001), and engages children in activities (Myers & Pianta, 2008). Joint attention is an important requisite for learning-teaching interactions and for many aspects of human development (Moore & Dunham, 1995). Joint attention in interactions between a child with ASD and the teacher becomes one of many target skills addressed in educational settings, because joint attention is one of the main challenges of ASD (Bhat, Galloway, & Landa, 2010; Bruinsma, Koegel, & Koegel, 2004). As tablet devices like the iPad can increase general attention and motivation and can decrease challenging behaviors (Goldsmith & LeBlanc, 2004), they can be useful tools to develop joint attention between child with ASD and the teacher. While a few re-searchers (e.g., Dykstra, 2014; Peck, 1985) did studies about teachers' interactions with children without ASD, there are a limited number of studies about teachers' interactions with children with ASD.

Relevant Research about iPad Use for Language Development of Children with ASD
Impairment in language and communication is one of the main diagnostic criteria for ASD (Goodman & Scott, 2012; Kwok, Brown, Smyth, & Cardy, 2015; Paul, Campbell, Gilbert, & Tsiouri, 2013; Talay-Ongan & Wood, 2000). In early years of their life, before schooling begins, children with ASD get lower scores on receptive language (Chawarska, Klin, Paul, & Volkmar, 2007). The majority of children with ASD who experience early expressive language delays exhibit some remaining problems by the age of five years (Howlin, Mawhood, & Rutter, 2000). While children without ASD show normal growth in social peer communication during their school years, children with ASD exhibit weakness in social communication (Murdock, Ganz, & Crittendon, 2011). During their school years, for instance, children with ASD show weakness in understanding language, attention shifting, eye contact initiating and responding to peers, which affect their social interaction with peers (Perryman et al., 2013). Thus, impairment in receptive and expressive language is a hallmark feature of children with ASD (Kwok et al., 2015; Paul et al., 2013).

While studies about teachers' interactions with children with ASD focusing on receptive and expressive language are sparse, Perryman and her colleagues' (2013) study about parents' interactions with children with ASD can support an argument that teachers' interactions make differences. Perryman and her colleagues examined the relationship between parental follow-in comments and the receptive language level for 37 children with ASD (mean age = 21 months; range from 15 to 24 months) who exhibited difficulties in receptive language. The researchers measured students' receptive language before and after their parents provided follow-in comments. They found that parents' follow-in comments helped children significantly in early receptive language growth.

The Apple iPad has been a well-known technological tool for children with

ASD, specifically for decreasing problematic behaviors during instruction and for increasing academic engagement (Neely, Rispoli, Camargo, Davis, & Boles, 2013), increasing communication behaviors (Flores et al, 2012), supporting numeracy skills development (Jowett, Moore, & Anderson, 2012) and increasing compliment behaviors (Macpherson, Charlop, & Miltenberger, 2014). In terms of language and communication of children with ASD, the iPad was found to be an effective tool to improve the expressive language ASD (Perryman et al., 2013; Cardon, 2012) and to increase authentic dialogue in play with peers (Murdock et al, 2013). However, there are always risk factors in language and communication of children with ASD (Howlin et al., 2000). These difficulties include behavioral issues, attentional issues (Stevenson, Richman, & Graham, 1985) and cognitive and academic delays (Urwin, Cook, & Kelly, 1988).

In sum, the research on effective language development support for children with ASD has favored the use of iPads. This research has been advancing, as new studies have started focusing on nuanced within-differences (e.g., comparing different design elements or displays of different iPad applications) going beyond between-differences (e.g., comparing iPads and paper-based picture-card systems). We still found the lack of literature about classroom teachers' interactions with children with ASD. Studies frequently used an experimental design that did not provide detailed microanalysis of interactions among teachers and children. Moreover, the literature body has focused only on children's language use, while the children's teachers have potentially affected children's language use. Thus, we do not have enough information on how teachers use their language with children with ASD, specifically during iPad use. We need more information about how teachers use language with their students to provide better guidance to teachers and teacher educators.

Methods

The current study investigated utterances of one child with ASD and her two teachers. While it is a single case study, the microanalysis with an utterance as the unit of analysis (instead of an individual child as the unit of analysis) can increase the power. However, any attempts to generalize the results of the current study need caution. The current study is guided by the following research questions.

1. Does joint attention happen more frequently in one single case study when the iPad is used than when the iPad is not used during one-to-one sessions between the teacher and the child with ASD?

2. Does verbal assistance from the teachers happen more frequently in one single case study when the iPad is used than when the iPad is not used during one-to-one sessions between the teacher and the child with ASD?

3. What type of verbal assistance is associated with iPad use during one-to-one sessions in one single case study between the teacher and the child with an ASD?

4. Does one teacher use the iPad with the child with ASD more frequently than the other teacher in one single case study?

Participants
The participants were a 49-month-old child called Kayla (pseudonym, all participants' names and the school's name are pseudonyms henceforth) and her two teachers Ms. Oakley and Ms. Taylor. We obtained the consent of Kayla's caregiver and two teachers for the research participation. The research participants and the first author had discussed the research project in detail as well as their rights to discontinue the research participation and the researchers' responsibilities to protect the research participants' anonymity and confidentiality. Kayla was diagnosed with autism spectrum disorder. Kayla attended a developmental preschool called Learning Tree. She was selected as the research participant because she was the only child whose parent gave Learning Tree permission for research activity involvement. Kayla was fairly compliant with classroom directions and participated in classroom activities such as listening to read-alouds, sing along, language development activities, arts and crafts, learning area play, and physical activities. According to Ms. Oakley and Ms. Taylor's description of Kayla, however, she could be easily distracted from one-to-one interac-

tions between she and the teacher. Ms. Oakley stated:

> "*Have to do a lot of prompting. A cow says, a cow says, a cow says, and then she will get it. She push push pushes… she likes very fast pace… do this, do this, what do you do with this, how do you do this, ... for her to go. Cause if we stop, we will lose her.".*

Ms. Oakley and Ms. Taylor reported that Kayla's receptive language is better than expressive language. Based upon the results of Preschool Language Scale-5th edition (PLS-5; Zimmerman, Steiner, & Pond, 2011), her Auditory Comprehension score was 77 (SS), which is higher than the mean standard score of children with ASD (SS=67) from Zimmerman et al's study (2002) on PLS-4. On the other hand, her Expressive Communication score was 60 (SS), which is lower than the mean standard score of children with ASD (SS=66).

Ms. Oakley had a bachelor's degree in special education with five years of teaching experience in different settings for children with disabilities. Ms. Taylor was working on her bachelor's degree in special education at a local university. Ms. Taylor had two years of teaching experience with children with ASD.

Setting and Context
This study was conducted at a developmental preschool for children with a wide variety of disabilities in the United States, called Learning Tree. Although typically-developing children (without known disabilities) could be enrolled when space was available, according to the policy of Learning Tree, all enrolled children including Kayla had a wide variety of disabilities. Therefore, the setting operated as a special education school rather than an inclusion setting. The ratio of teachers to children was 1-to-1. In addition, a physical therapist, an occupational therapist, and/or a speech language pathologist regularly visited their classrooms to work with the teacher and specific children. Learning Tree had various learning areas to encourage children's play and social interaction. These learning areas were designed to facilitate individual activities for music, math, art, language development, and physical activities.

Kayla's teachers often used paper-picture cards to increase interactions with Kayla. These cards displayed various pictures of animals, foods, and Learning Tree teaching staff. Each picture card had one specific object on as Kayla's speech prompt. The teachers spoke a prompt on each picture card such as "what is this?", "who is this?", or "what does this say?" When Kayla's teachers were interacting with her via the picture cards, they kept the records of Kayla's responses to indicate whether or not they were accurate and on target. For instance, when Ms. Taylor asked Kayla, "what is this?", referring to the picture of a monkey on one of the picture cards, the target answer was monkey. If Kayla responded with the sound a monkey makes as "moo", Kayla did not earn the point.

Each teacher in Learning Tree was given an iPad (4th generation Wi-Fi only model with 16GB flash memory storage); there was no particular training or policy regarding how the teachers used the iPads with the children. The teachers made their own decisions when or how to use iPads; there was no particular applications recommended by the school administration. The administrators mentioned that Learning Tree used iPad as a language development tool. Each teacher's iPad had different iPad applications (apps, henceforth) including letter tracing apps, interactive eBooks, phonics apps and coloring apps. There were a few apps that were particularly popular among the teachers and the children, such as Toca Boca Hair Salon and Mr. Potato Head. Toca Boca Hair Salon is an app that allows the player to change the hairstyle of the doll on the screen by brushing the hair, putting accessories on the hair, or coloring the hair. The player can also wash and dry the doll's hair. Mr. Potato Head is an online version of a popular toy for young children. Children combine the empty potato with various facial parts as they do with the physical toy. Among all the possible apps on Ms. Oakley's and Ms. Taylor's iPads, Kayla frequently chose Toca Boca Hair Salon. While apps of language development tools designed particularly for children with ASD (e.g., PECS Phase III or Niki Talk) were available in iTunes store, these apps were not observed in Learning Tree teachers' iPads. However, according to interviews with Ms. Oakley, she once used an app for Kayla's receptive language. Each scene had six pictures that Kayla could choose from for the verbally given word. Because Kayla wanted to just touch

wherever she wanted to, Ms. Oakley could not have Kayla's cooperation for her goals. Then Ms. Oakley did not use educational or functional apps for Kayla. Kayla did not receive any explicit instruction from Learning Tree teachers for using iPads or any specific apps. Kayla's parent reported that Kayla regularly used iPads at home.

Research Design
A case-study design is applied in this study. There have been criticisms against experimental conditions, as results are often distorted by research participants with ASD (Cabay, 1994). The case-study design allowed us to avoid ethical issues (e.g., retaining intervention for the establishment of baseline; Goodisman, 1982). Ms. Oakley and Ms. Taylor did not receive any instructions from the researchers. Their business-as-usual classroom interactions with Kayla were observed and videotaped for analyses. The interviews with these teachers were supplemented. Therefore, primary data collection for research relates to qualitative research design (Lincoln & Guba, 1985). Meanwhile, qualitative data without controlled analytic procedures is challenged in terms of lack of validity and credibility (Cabay, 1994; Prior & Cummins, 1992). We employed structured analytic procedures suggested by researchers in language development (Dickinson, Hofer, Barnes, & Grifenhagen, 2014). The results are to be used to improve professional practice in the chosen single context.

Data Collection
Teacher-child interaction data
We collected teacher-child dyad interaction data for quantitative analysis. Weekly audiovisual data collection of teacher-child dyad interaction sessions (10 to 20-minute-long each) occurred within the three-month period of January, February, and March. All audiovisual data was transcribed and parsed into utterances for coding.

Teacher interview data
Two interviews were conducted per teacher. The interviews were audiotaped and transcribed. Memos and field notes during and after each interview were generated as another set of qualitative data (Lincoln & Guba, 1985). Memos and field notes related to the researchers' reflections on what had occurred during the interview and the observation of the teachers. The research-ers' questions, thoughts, concepts, assumptions, and ideas for analysis and writing were included in the memos and field notes (Strauss, 1987). The first interviews were semi-structured with the same prepared questions about the teachers' perspectives regarding iPad use with children with ASD and with Kayla specifically. The same list of questions were used for both teachers for coherent data collection in the first interviews. The second interviews were conducted based on the memos and field notes about the first interviews. The second interviews were more conversational and open-ended than the first interviews, which were quite different between two teachers in the second interviews. The second interview with Ms. Oakley was focusing on her difficulties expressed distinctively in the first interview. Ms. Taylor mostly talked about different iPad apps that she used with her students including Kayla.

Data Analysis
Quantitative analysis of the teacher-child interaction data
An utterance was the unit of analysis for the teacher-child interaction data. Utterance is a unit of speech bounded by silence, which is not necessarily a complete sentence. Sometimes a single word is considered as an utterance. Other times, a couple of sentences can be considered one utterance based on the interlocutor's accent or the length of breath. Whereas a sentence is a unit of written language, an utterance is a unit of oral language (MacWhinney, 2000; Miller & Chapman, 1996). Researchers of oral language use an utterance as the unit of analysis instead of a sentence (e.g., Bowers & Vasilyeva, 2011; Combs, 2010; de Rivera et al, 2005; Hoff, 2003; Justice, Weber, Ezell, & Bakeman, 2002). However, at an interaction turn, when non-verbal actions instead of a verbal utterance were used, the interaction change was considered to be a unit of analysis.

There were four main coding schemes: child's verbal response (observed and not observed); attention (joint and disparate attention); teachers' verbal assistance (observed and not observed); teachers' verbal assistance (closed-ended question, open-ended question, reinforcement, transition reminder, and verbal correction). Definitions and examples of codes are provided in Table 1. The co-authors analyzed the 25% of the data together to establish

the coding schemes. Then the second author independently coded the entire data four times (one coding scheme each time). For the inter-coder reliability testing, the first author independently coded the 25% of the entire data, following the same coding procedures of the second author's analysis. ReCal2, a web-application, calculated the inter-coder reliability for each coding scheme. The Kappa scores that reflect correction for chance agreement score were .954, .851, .965, and .817 respectively for four coding schemes. These scores met the benchmarks suggested as substantial agreement by Landis and Koch (1977).

Table 1.
Examples and definitions of categories for coding teacher and child interaction

Code	Definition	Example
Verbal Response observed	Child's verbal utterance occurred adjacent to the teacher's utterance	The teacher asks the child, "who says Mooo?" The child answers, "a cow."
Verbal Response not observed	Child's verbal utterance did not occur after the teacher's utterance	The teacher asks the child, "who says ho ho?" The child does not answer verbally.
Joint Attention	A pair of utterances of the teacher and the child can be referred to the same shared topic.	The teacher and child are playing together. The teacher looks at and points to a horse toy and says "look at this horse." The child responds by following the teacher's gaze and point, and so looks at the hours.
Disparate attention	A pair of utterances of the teacher and the child cannot be referred to the same shared topic.	The teacher holds a horse up and asks the child, "what is this?" The child does not look at the horse or the teacher, without responding to the teacher's question
Teacher's Verbal Assistance	Teacher verbally interacts with the child for assisting the child's engagement in the conversation.	When the child is not responding to the teacher's question, "what is this (pointed on her nose)?", the child is not responding. Then the teacher provides a verbal assistance by saying "no (the first two morphemes of nose)" with a raised accent at the end. Then the child says the word nose.
Teacher's Verbal Assistance: Closed-ended Question	Teacher's question that requires a simple one-word response such as yes or no	Teacher asks student: do you want help (yes/no question).
Teacher's Verbal Assistance: Open-ended question	Teacher's question that allow the student to express an opinion without being influenced by the teacher	Teacher asks student: "what happened to your animals?"
Teacher's Verbal Assistance: Reinforcement	Teacher's verbal assistance used as a reinforcer to increase certain behaviors or actions in rate, or is otherwise strengthened	Teacher is showing a picture of a tree and ask what it is. The child answers, "it is a tree." Then the teacher reinforces the answer by saying "good job."
Teacher's Verbal Assistance: Transition Reminder	Teacher's verbal assistance used to remind the child of what will happen next	Teacher says "one more min and then we are all done."
Teacher's Verbal Assistance: Verbal Correction	Teacher's verbal assistance that recognizes erroneous response and to initiate some effort to improve or correct it	Teacher shows a picture of a hand and ask what it is. The the child answers "it is a nose." The teacher corrects the answer by saying "no, it is a hand.'

We conducted χ^2 analyses to determine associations between iPad use and other variables (e.g., joint attention, teachers' verbal assistance). A χ^2 analysis is also employed to discover the teachers' individual preference difference regarding iPad use. For the analyses regarding joint attention and teacher's preference for iPad use, we used 1315 utterances that include the teacher's and the child's. We only analyzed the teacher's utterances (N = 659) for the teachers' verbal assistance variables. The continuity correction was not applied for χ^2 analyses, because it causes significance values to become too conservative (Camilli & Hopkins, 1978; Howell, 2002).

Qualitative analysis of the teacher interview data and field notes
The interview transcripts and the first author's field notes were read several times by the first author and another researcher. By doing so, we could earn additional insight. In addition, the constant comparative approach (Merriam, 1998) was used during the repetitive reading of the data. After the initial key-words were identified, they were organized into clusters of super-ordinate themes. We continued to refer to the original interview transcripts and field notes throughout the analysis process to ensure that the findings were grounded in the data. Themes were reviewed by another researcher and discussed with the teachers for the respondent validity check. NVivo10 was used for the qualitative data organization. Excerpts for each theme in this manuscript were selected from the coding summary extracted from NVivo10. The first author and a research assistant analyzed the same interview transcripts using NVivo10. Based on the results from the inter-rater reliability coding comparison query in NVivo10, we determined that the three salient themes (Differentiating educational use and non-educational use of iPads; Considering the child's developmental level in using iPads; Teachers' individual preferences of iPad use with Kayla) were attainable with a high agreement rate (89.22%).

Results

iPad Use and Joint Attention between the Teacher and the Child with an ASD
Does joint attention happen more frequently in one single case study when the iPad is used than when the iPad is not used during the one-to-one session of the teacher and the child with an ASD? To answer this question, we conducted a 2 x 2 χ^2 analysis. We categorized 1315 utterances into non-ipad or ipad conditions, which became the independent variable titled iPad Use. Then we analyzed the same set of 1315 utterances by coding either disparate attention or joint attention, which became the dependent variable titled Attention. The continuity correction was not applied because it causes significant values to become too conservative (Camilli & Hopkins, 1978; Howell, 2002), although the chi-square value was significant in either way. Table 2 presents the 2 X 2 contingency arrangement between the independent variable (iPad Use) and dependent variable (Attention). Results indicate statistically-significant association in the contingency arrangements (χ^2 = 101.150, df = 1, p = .001) with a medium-to-large effect size (Cohen's 1988, d = 0.58). Absolute values of standard residuals of all associations were significant as they were above the conventional benchmark (1.96), which means the observed value of each association was significantly different than the expected value. The standard residual analysis of each association is as follows. Joint attention was more frequently observed than expected in utterances without iPad use, whereas it was less frequently observed than expected in utterances with iPad use. In addition, disparate attention was less observed than expected in utterances without iPad use, while it was more observed than expected in utterances with Ipad use.

iPad Use and Teachers' Verbal Assistance
Does teachers' verbal assistance happen more frequently in one single case study when the iPad is used than when the iPad is not used during the one-to-one session of the teacher and the child with an ASD? To answer this question, we conducted a 2 x 2 χ^2 analysis only using teachers' utterances (N = 659). We categorized teachers' utterances into non-ipad or ipad conditions, which became the independent variable titled iPad Use. In the same set of teachers' utterances, teachers' verbal assistance was analyzed for the dependent variable. We coded 1 for the teachers' utterances where verbal assistance was observed. All leftover utterances of teachers' were coded as 0 where no verbal assistance was observed. As aforementioned in the attention analysis

section, the continuity correction was not applied, although the chi-square value was significant in either way. Table 3 presents the 2 X 2 contingency arrangement between the independent variable (iPad Use) and dependent variable (Teachers' Verbal Assistance). Results indicate statistically-significant association in the contingency

arrangements (χ^2 = 15.421, df = 1, p = .001) with a small-to-medium effect size (Cohen's 1988, d = 0.31). A notable observation in standard residuals indicates that teachers were unlikely to provide verbal assistance when the iPad was used, which is significantly different than the expected level.

Table 2.
Cross Tabulation Between iPad Use and Attention

iPad Use		Attention Coding	
		Disparate Attention	**Joint Attention**
Utterances without iPad Use	Count	296	701
	Expected Count	371.5	625.5
	Percent within the category	29.7%	70.3%
	Standard Residual	-3.9	3.0
Utterances with iPad Use	Count	194	124
	Expected Count	118.5	199.5
	Percent within the category	61.0%	39.0%
	Standard Residual	6.9	-5.3

Table 3.
Cross Tabulation Between iPad Use and Teacher's Verbal Assistance

iPad Use		Verbal Assistance	
		Verbal Assistance not observed	**Verbal Assistance observed**
Utterances without iPad Use	Count	77	422
	Expected Count	93.9	405.1
	Percent within the category	15.4%	84.6%
	Standard Residual	-1.7	0.8
Utterances with iPad Use	Count	47	113
	Expected Count	30.1	129.9
	Percent within the category	29.4%	70.6%
	Standard Residual	3.1	-1.5

As verbal assistance is a broad term that includes various types, we further analyzed the teachers' verbal assistance variable into six categories: No Assistance, Closed-ended Question, Open-ended Question, Reinforcement, Transition Reminder, and Verbal Correction. We conducted 2 X 6 χ^2 analysis only using teachers' utterances (N = 659). The independent variable was iPad Use. The continuity correction was not applied, although the chi-square value was

significant in either way. Table 4 presents the 2 X 6 contingency arrangement between the independent variable (iPad Use) and dependent variable (Teachers' Verbal Assistance). Results indicate statistically-significant association in the contingency arrangements (χ^2 = 35.431, df = 5, p = .001) with a small-to-medium effect size (Cohen's 1988, d = 0.48). Significant standard residuals were observed only in the associations with open-ended question use. Teachers'

open-ended question use was more frequently observed than expected in their utterances without iPad. Alternatively, teachers' open-ended question use was less frequently observed than expected in their utterances with iPad.

Table 4.
Cross Tabulation between iPad Use and Teachers' Verbal Assistance

iPad Use		No Verbal Assistance observed	Closed-ended question	Open-ended question	Reinforce-ment	Transition Reminder	Verbal Correction
Utterances without iPad Use	Count	77	99	184	98	36	5
	Expected Count	93.9	103.0	156.7	100.0	40.9	4.5
	Percent within the category	15.4%	84.6%	36.9%	19.6%	7.2%	1.0%
	Standard Residual	-1.7	-0.4	2.2	-0.2	-0.8	0.2
Utterances with iPad Use	Count	47	37	23	34	18	1
	Expected Count	30.1	33.0	50.3	32.0	13.1	1.5
	Percent within the category	29.4%	23.1%	14.4%	21.3%	11.3%	0.6%
	Standard Residual	3.1	0.7	-3.8	0.3	1.4	-0.4

Teachers' Preference in Using iPads with the Child with an ASD

Does a teacher use iPads with the child with an ASD more frequently than the other teacher in one single case study? To answer this question, we conducted a 2 x 2 χ^2 analysis using all utterances of two teachers and Kayla (N = 1315). The iPad use variable became the dependent variable of this analysis. The teacher variable (Ms. Oakley and Ms. Taylor) became the independent variable. As aforementioned in the attention analysis section, the continuity correction was not applied, although the chi-square value was significant in either way. Table 5 presents the 2 X 2 contingency arrangement between the independent variable (Teacher) and dependent variable (iPad use). Figure 1 exhibits the differences of two teachers' utterances with iPad use and without iPad use. Results indicate statistically-significant association in the contingency arrangements (χ^2 = 107.424, *df* = 1, *p* = .001) with a medium-to-large effect size (Cohen's 1988, *d* = 0.60). The observed value of each association was significantly different than the expected value. The standard residual analysis of each association is as follows. In Miss Oakley's session iPad use was less observed than expected, whereas iPad use was more frequently observed than expected in Ms. Taylor's utterances.

Table 5
Cross Tabulation Between Teacher and iPad Use

Teacher		iPad use	
		iPad was not used	iPad was used
Ms. Oakley's sessions	Utterance Count	458	43
	Expected Utterance Count	379.8	121.2
	Percent within the teacher variable	91.4%	8.6%
	Percent within the iPad use variable	45.9%	13.5%
	Standard Residual	4.0	-7.1
Ms. Taylor's sessions	Utterance Count	539	275
	Expected Utterance Count	617.2	196.8
	Percent within the teacher variable	66.2%	33.8%
	Percent within the iPad use variable	54.1%	86.5%
	Standard Residual	-3.1	5.6

Figure 1.
Comparisons of two teachers' utterances when iPad is used and when iPad is not used
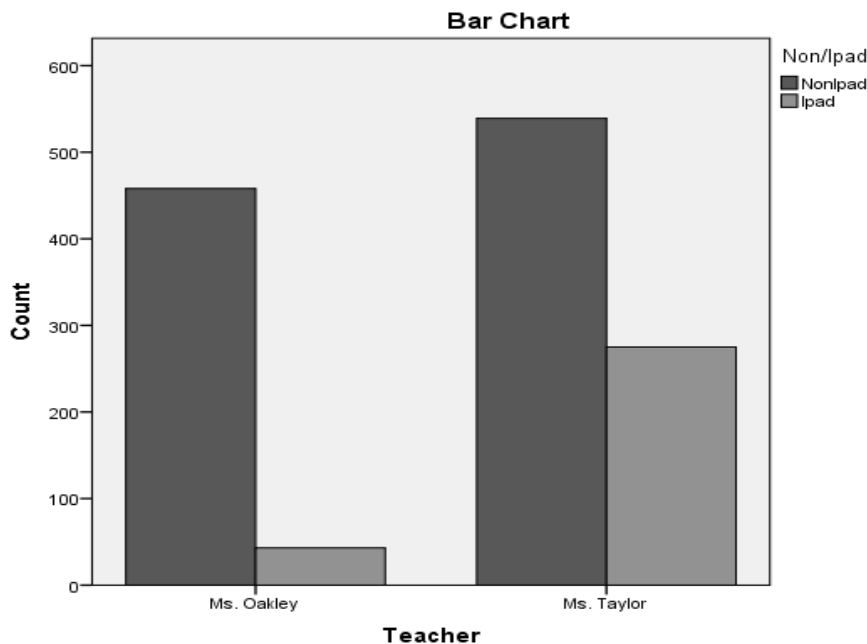
Teachers' Perspectives about Using iPads with the Child with an ASD
As a method of methodological triangulation (Creswell & Plano Clark, 2011), individual interviews with the teachers were conducted for us to learn their perspectives and preferences about iPad use with Kayla. For clarity of presentation, we organized the data in three salient themes: differentiating educational use and non-educational use of iPads; considering Kayla's developmental level; teachers' individual preferences of iPad use with Kayla. These themes are not mutually exclusive and there is a dynamic interaction among them.

Differentiating educational use and non-educational use of iPads.
Both teachers were distinguishing functional or educational use of an iPad from non-

functional use. Functional or educational use when the teachers chose the iPad app that are designed for receptive language and expressive language activities. For instance, after being given a verbal prompt of a word, the child is required to choose a picture of the prompt in the receptive language activity app. In an expressive language activity app, on the other hand, the child is required to say a word to the teacher on the picture prompt on the screen. These behaviors needed to happen with the joint attention between the teacher and the child. On the other hand, non-functional use was when Kayla was using the iPad for her own will without the teacher's engagement with her. Any type of iPad apps could be used non-functionally. Even iPads considered to be educational by the teachers could be used for Kayla's steaming off. Kayla could touch any part of the screen from any iPad apps. She could go back to the main page to pick another iPad app.

Both teachers mentioned some educational topics such as animal sounds, letters, and numbers:

Ms. Oakley: Now we are working on making requests. We just wanted to introduce something functionally and developmentally that might go along with public schools. So maybe we will start with letters.
(Excerpt from the first interview with Ms. Oakley)
Ms. Taylor: She might say number one number two and number three. But she might not know what number one number two and number three are. You know that might be a good place to start for her. The functionality of them.
(Excerpt from the first interview with Ms. Taylor)
Soh: Do you see any possibility to use iPads for expressive language?
Ms. Oakley: I am trying to think of the situation that we could… Yeah we could probably, … maybe with animal sounds? I think she might do well with that. Maybe hearing the cow and you know … touching the animal and ask some questions… Yeah… I think she might do well with that.
(Excerpt from the second interview with Ms. Oakley)
Meanwhile, neither teacher was addressing functional language use (e.g.,

instrumental, regulatory, interactional, personal, heuristic, imaginative, informative; Halliday, 1975) using iPads with Kayla. Ms. Oakley briefly mentioned Kayla's level of functional language use responding to Soh's question regarding Kayla's communication with her. However, she did not make any connections between iPad use with Kayla and functional language development. She stated:

Ms. Oakley: Absolutely not functional language. Well, she can distinguish what she wants. If she wants to play with a horse, she would say horse. If she wants more sandwich, she will say more. More what? Then she would not say sandwich.
(Excerpt from the second interview with Ms. Oakley)

Considering Kayla's developmental level
The teachers used iPads as a reinforcer for Kayla, which is different from their educational or functional use of it. This observation is evidenced in the following excerpt.

Ms. Oakley: I think what I learned is, even though she doesn't use it functionally, it's still reinforcing for her. So I just decided to use it as reinforcement for her. We're using some book things in iPad. Her attention span is so short when it comes to that. She's touching things before she can even do it. So if her reinforcement is just being in her own world kind of steaming off with the iPad, that's what I use it for, (be)cause that's what is working for her now.
(Excerpt from the second interview with Ms. Oakley)
iPad is perceived as a content to learn how to use for these teachers. They believed that the functional or educational use of ipad is not yet developmentally appropriate for Kayla. She interpreted the current iPad use as a reinforcer with Kayla to be transitional to more structured way that can be applied in the future.

Ms. Oakley: I think there were six pictures on a page in that app. Will she do it correctly? No way. It will be a huge step for her.
(Excerpt from the second interview with Ms. Oakley)

Ms. Taylor: I did some research about language apps. I found an app about farm animals. She will be good with that. Maybe for next year? Absolutely not for this year.
(Excerpt from the first interview with Ms. Taylor)
Soh: Sometimes when Kayla was using the iPad for steaming off, you were talking with her.
Ms. Oakley: Just to see if I can get into her world. And I like to talk to her when she is doing it sometimes. She's never gonna be able to use it with someone. But I can talk to her a little bit here and there when she uses it. Then eventually I can work with her on iPad some day.
(Excerpt from the second interview with Ms. Oakley)

Teachers' individual preferences of iPad use with Kayla.
Ms. Oakley considered iPad use with Kayla to be difficult. The analysis of her word use indicated that "hard", "frustrated" and "uncomfortable" were frequently used adjectives when she talked about iPad use with Kayla.

Ms. Oakley: When she was first time using it, we were doing selecting one of two (pictures). Nine out of ten times, before the prompt was finished, Kayla was touching the screen. She didn't understand she had to listen and comprehend what was asked. She was just touching the cow before she even heard cow. She has gone a lot better with that, but I have hard times using it workwise. I use it as a reinforcer.
(Excerpt from the second interview with Ms. Oakley)

Alternatively, Ms. Taylor did not show any evidence of her difficulty. She liked the fact that Kayla enjoyed touching things on the iPad. This qualitative finding is relevant to the quantitative finding with regards to the two teachers' difference of frequency of utterances with iPad during the sessions with Kayla.

Discussion

The professional literature on iPad's use with children with ASD has rarely addressed teacher's individual differences in providing instruction and intervention. Our study compared two teachers' interactions with the same child with an ASD, quantifying different aspects of their utterances and actions (e.g., iPad use, joint attention, and verbal assistance). We supplemented the quantitative data with the interviews with the teachers to learn about the teachers' own perspectives. By doing so, we discovered the teachers' individual differences in preferences and frequencies of iPad use. While, for children with autism, the effectiveness of early intervention on their social and communication skills has been supported by research (Rogers & Vismara, 2008), children's differences in responses to the intervention have been observed (Sallows & Graupner, 2005; Smith, Groen, & Wynn, 2000). This observation requires more information about various factors that account for children's differences in responses to the intervention (Ruble & McGrew, 2013; Stahmer, Schreibman, & Cunningham, 2011). Amongst possible factors, some teacher factors such as years of teaching, administrative support, stress level, and emotional exhaustion have been investigated in research (Ruble & McGrew, 2013). However, teachers' interaction styles including different functions of language use and verbal assistance types have rarely been explored as a factor for affecting the language outcomes of children with ASD. The current study can serve as a catalyst for future studies that explore various teacher variables.

Both teachers described iPad use for Kayla as a reinforcer, although their school administrators described that the iPad was used for language development activities. Teachers' interactions with Kayla were significantly less frequent when they were letting Kayla use an iPad than when an iPad was not used. For instance, Ms. Oakley could not interact with her on her planned language activities while she was on the iPad; she ended up letting Kayla "steam off" with the iPad. Our data does not allow us to argue Ms. Oakley and Ms. Taylor's planned language activities on the iPad relate to research-supported quality instruction particularly for the language development of children with ASD. However, when teachers apply hands-off policies about children's iPad use, the children have limited opportunities to hear the teachers' advanced language and to improve their language use with the teacher's' scaffolding in the context of iPad use. More simply,

children will have less opportunities to experience joint attention. In our data, joint attention between the teacher and the child was established more often when an iPad was not used than when an iPad was used. Joint attention is an important foundation for communicative language. As Flores and her colleagues (2012) cautioned, there is a challenge involved in iPad use regarding joint attention. Because the device is designed for touching, children are very likely to touch different elements on the screen for exploration and for fun (Geist, 2012). Future research has to address how the teachers still can interact with the children to provide language modeling and language facilitation without hindering their exploration and play on iPad. Parallel talk or self talk use (Paul & Chapman, 2007) can be investigated for this purpose.

Is iPad use with children with ASD a developmentally appropriate practice? Published research about iPad use for children with ASD has not addressed issues regarding developmental appropriateness. In the interviews with the teachers in our study, however, both teachers mentioned that the functional use of iPad seemed to be developmentally inappropriate for Kayla. Both teachers still tried to interact with Kayla regarding what was happening on the iPad screen. This type of interaction, based on the first author's observation, was more naturalistic and authentic than scripted and teachers' pursuing communication with Kayla. It is a fair statement that teachers have to provide developmentally appropriate educational experiences for all children (Campbell et al, 1998). When the pre-planned scripted approach is not developmentally appropriate, teachers should still find developmentally appropriate ways to use iPads to support children's language development. Studies about naturalistic or hybrid strategies, which avoid scripted approaches, to enhance children's language productivity have been accumulated (Fey, Cleave, Long, & Hughes, 1993; Girolametto, Pearce, & Weitzman, 1996; Weismer & Robertson, 2006). While these strategies could be considered, the teachers were not aware that the naturalistic interaction that they attempted during Kayla's iPad use could be used for language development.

The results of this study regarding teachers' verbal assistance are providing implications for teachers' questioning. Questioning is considered to be one of most frequently used teaching strategies (de Rivera, Girolametto, Greenberg, & Weitzman, 2005; Harlen, 1999). Open-ended questions, while there are other types of questions (e.g., closed-ended questions, prompting questions), are generally favored amongst educationists and suggested for teachers' use with their students (Author; Lee, Kinzie, & Whittaker, 2012). Interestingly, in this data, open-ended questions were more frequently observed when iPads were not used. It is unlikely, however, that the teachers were purposefully using open-ended questions for language development support when they allowed Kayla to use the iPad. As a matter of fact, the literature about intervention strategies for children with ASD has rarely addressed open-ended questions, which is surprising compared to other education literature that emphasizes teachers' open-ended question use. Future studies can provide the teachers with knowledge about adequate question use for their students with ASD.

Implications

The results of the current study provide insight about how teachers' iPad use with a child with an ASD is related to joint attention with the child, verbal assistance for the child, and the teachers' own preference. A notable finding is that joint attention and verbal assistance took place more frequently when iPads were not used than when an iPad was used. The results of the study provide implications for future research and practice.

Research
Research has to consider teachers' individual differences as an important factor for the language development of children with ASD. We focused only on two teachers. Future studies with larger sample sizes can facilitate the development of adequate research methods for instructions and interventions for children with ASD considering teachers' individual differences.

Practice
The results imply that professional development of teachers for children with ASD needs teacher educators' attention in regards to iPad use for the language development of children with ASD. The participating teachers rarely considered the de-

velopment of authentic communication abilities for children with ASD (Cabay, 1994) regarding language development using iPads.

Limitation

There are limitations to be addressed when considering the findings of this case study. The limitations of this study can be discussed in terms of sample size and participant selection as follows.

We had a small number of participants. In fact, our unit of analysis was individual utterances instead of individual person. So our sample size based upon the number of utterances can be still appreciable. However, adding utterance samples from more participants can potentially provide different results from ours.

This study was conducted at a special education school and all the students in this school are considered to have severe disabilities. Teachers and children with ASD in an inclusion classroom can potentially provide different results from ours.

There was a selection bias with regards to the participants. The researcher could not get involved in choosing the target child because of the strict rules of the school to protect the child's identity, so the school administrators and the teachers were responsible for finding the participant for the study.

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Investigation of Peer Relationships of Children with and without Special Needs in the Preschool Period

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Abstract

This study aimed to compare the peer relationships of preschool children with special needs with their peers without special needs, to determine whether the special needs variable predicts the peer relationships of children or not, and examine the peer relationships of children with special needs in terms of gender and age variables. 56 preschool teachers and a total of 112 children, 56 with special needs and 56 without special needs, were enrolled in the study. The data were collected by using the Information Form and the Child Behavior Scale (CBS). The results of the study indicated that there were statistically significant differences between the children with and without special needs in prosocial behaviors, asocial behaviors, anxious-fearful behaviors, and hyperactivity behaviors subscale scores. However, there was no significant difference between aggression and exclusion behavior subscale scores. It is observed that being with special needs significantly predicts prosocial behaviors in favor of children without special needs, and asocial, anxious-fearful and hyperactivity behaviors in favor of children with special needs. Furthermore, it was determined that gender and age variables do not create a statistically significant difference in the peer relationships of children with special needs. The findings of the study support the requirement to develop effective intervention programs which will increase the peer relationships and peer acceptance of children with special needs in preschool inclusive classes.

Keywords: Early childhood education, precshool period, inclusion, peer relations, children with and without special needs.

Introduction

Peer relationships can be defined as a whole of interactions and actions that show continuity between individuals who have reached the same age, level of development or maturity and share a similar life history, value, lifestyle and social context (Gülay, 2010). Peer relationships differ in the way of friendship, being accepted and being rejected by peers, and exposure to the violence of peers (Salı, 2014). The social environment in which children are involved, individual characteristics (social skills, aggression, bullying) and interaction with each other shape the structure of peer relationships (Gülay, 2009). In addition to the individual characteristics of children, peer support and power balance/imbalance also shape the structure of peer relationships. On the other hand, peer groups of children are both affected by adults and have the ability to influence them (Gülay,

2009; Rodkin & Hodges, 2003). It is stated that the positive relationships of children with their teachers have a positive effect on peer relationships (Gülay-Ogelman, Körükçü & Ersan, 2015).

Peer acceptance is defined as the child's being accepted and loved by the peer group in which he/she is included. Children accepted by their peers in the preschool period are more liked and preferred by their peers, exhibit fewer behavioral problems, have more friends and are more willing to participate in school activities (Gülay, 2010; Ladd & Profilet, 1996; Salı, 2014). While children accepted by their peers are not exposed to peer violence, children rejected by their peers may be exposed to peer violence more (Gülay, 2010). It was determined that children who were not by their peers were neglected and rejected by their peers more (Harrits, Zaia, Bates, Dodge & Petit, 1997). It was

determined that children with prosocial be-haviors were more loved and accepted by their peers (Ladd & Profilet, 1996). On the other hand, children who exhibit aggressive behaviors are less accepted by their peers (Beyazkürk, Anlıak & Dinçer, 2007).

Farmer (2000) defined peer rejection as the child's not or little being loved by the peers. Children rejected by their peers in the preschool period are excluded by their peers, and they are not liked very much (Gülay, 2011a). In children rejected by their peers, many behavioral problems such as aggression, being fearful and anxious, non-social behaviors, bullying, etc. can be ob-served (Gülay, 2009). In children who are rejected by their peers in the preschool period, problems such as dropping out the school, academic failure, and continuation of peer rejection in later years may be ob-served (Beyazkürk et al., 2007; Parker & Asher, 1987; Roberts & Zubrick, 1992).

Characteristics related to the child are the leading ones among the factors which affect the friendship relationships of presc-hool children. The age, gender, being with or without special needs, cognitive, linguis-tic and emotional skills of children affect their peer relationships (Gülay, 2010). Be-ing with special needs is argued as one of the important factors affecting the peer rela-tionships of children. Guralnick, Connor, Hammond, Gottman & Kinnish (1996a; 1996b) stated that when children with spe-cial needs are compared with their peers without special needs, they are involved in less social interaction and exhibit more ne-gative interaction styles. As a result of the study which was conducted by Guralnick, Hammond, Connor & Neville (2006) and in which they monitored the peer relationships of 4-6-year-old children with special needs for two years, they revealed that children with special needs experienced social com-petence problems, could not interact with their peers, and had deficiencies in the so-cial knowledge process and emotional or-der skills. Children with special needs may be deprived of the most basic social skills depending on the type and degree of defi-ciencies they have, and this may cause children with special needs to experience difficulties in peer relationships (Gülay, 2010). As a result of this, children with spe-cial needs experience problems such as rejection by their peers, inability to make friends and exposure to peer violence (Çifci & Sucuoğlu, 2003; Gülay, 2010). Therefore,

a successful inclusive program in the preschool period is important for children with special needs in terms of their being together with their peers, interacting with them and developing their peer relations-hips in this way. One of the variables that play a role in peer relationships in the preschool period is the genders of children. The effect of gender on peer relationships is observed on the aggressive behaviors of children. There are differences between boys and girls in terms of the type and frequency of aggressive behaviors. Boys are more aggressive when compared to girls (Bierman, 2005; Gülay, 2011b; Kostil-nek, Whirlen, Soderman & Gregory, 2005). Furthermore, age differences are another variable affecting peer relationships. With the growth of children, their problem beha-viors decrease, and their social skills deve-lop. Age-related experience and increased maturation can lead to successful peer rela-tionships in children (Gülay, 2011b). In ad-dition to the variables related to children (social skills, problem behaviors, self-regulation, temperament, and preschool education duration) that may affect the peer relationships of preschool children, the va-riables related to the teacher, school and the family also have an influence on peer relationships (Gülay, 2010).

To receive education together with their peers without special needs in the preschool period is observed as a unique opportunity for children with special needs that will ensure significant acquisitions (Bruder, 2010; Henninger, Gupta & Vinh, 2014). Preschool inclusive environments are important regarding the integration of children with special needs into society (Both & Ainscow, 2002), support of their development in the early period (Odom, Vitztum, Wolery, Lieber, Sandall, Hanson & Horn, 2004), normally developed peers' becoming a model for skills (Guralnick, 2001), the establishment of qualified inte-ractions with adults and peers in order for children with special needs who participate in inclusive practices to benefit from presc-hool education in the best way (Bakkaloğlu, Sucuoğlu & Özbek, 2017; Odom et al., 2004;). Moreover, children without special needs develop positive attitudes towards their peers with special needs with whom they are found in the same environment and get information about developmental disabilities (Diamond & Huang, 2005).

When the literature was examined, it was determined that children with special needs were less accepted and more rejected in preschool inclusive environments in comparison with their peers without special needs (Baydık & Bakkaloğlu, 2009; Çulhaoğlu-İmrak & Sığırtmaç, 2011; Eratay & Sazak-Pınar, 2006; Küçüker, Erdoğan & Çürük, 2014; Odom, Zercher, Li, Marguet, Sandall & Brown, 2006; Roberts & Zubrick, 1992; Stone & La Greca, 1990; Şahbaz, 2004; Vuran, 2005). Research also displays that in inclusive environments children with special needs tend to make fewer friends or even not to make any friends, have negative experience in peer relationships, are excluded and left alone, and tend to interact with other children with special needs (Guralnick, 1995; Kemp & Carter, 2002; Larrivee & Horne, 1991; Pijl, Frostad & Fleming, 2008).

The first laws and practices related to preschool inclusive education in Turkey started in 1983, and since then, the placement of children with special needs in general education classes has been accelerated (Sucuoğlu, 2004). In 1997, with the Special Education Law No. 573 (Ministry of National Education, 1997), 37-66-month-old preschool period children with special needs were obliged to be placed in schools, where their peers without special needs were educated, and there was a rapid increase in the number of children with special needs in general education schools (Ministry of National Education, 2013). Despite all these legal regulations, important problems in preschool inclusive practices both in terms of quality and quantity are experienced in Turkey. Preschool children with special needs are found in the same environment with their peers without special needs only physically, and this does not provide social acceptance of children with special needs, prevents them from learning together with their peers and also from learning from their peers, which is the main aim of inclusion, and therefore affects the achievement of inclusion adversely. Hence, to examine the peer relationships of children is considered important in terms of the studies that aim to increase the effectiveness of inclusive practices.

It is observed that some studies on the peer relationships of preschool children were conducted in Turkey (Gülay, 2008; Gülay 2009; Gülay, 2011a; Gülay, 2011b; Gülay-Ogelman & Erten, 2013; Salı, 2014; Seçer et al., 2012; Yüce, 2015; Uluyurt, 2012). However, there were only two studies that examined the peer relationships of children with special needs in the preschool period (Çulhaoğlu-İmrak & Sığırmaç, 2011; Yüce, 2015). Therefore, the aim of this study is to examine the peer relationships between children with and without special needs, who are educated in the inclusive environment in the preschool period. Depending on the general aim of the study, answers to the following questions were sought.

1. Do the peer relationship scores of children with special needs demonstrate a difference according to their gender?
2. Do the peer relationship scores of children with special needs demonstrate a difference according to their age?
3. Is there a significant difference between the peer relationship scores of children with and without special needs?
4. Does the state of being with special needs significantly predict the children's peer relationships?

Methods

Research Design
This research is a causal comparative study which examines the peer relationships of children with and without special needs in the preschool classes where inclusive practices are carried out according to the variables of being with special needs, age and gender. Causal comparative studies are the studies which aim to determine the causes or consequences of the difference between the groups of people (Fraenkel, Walleyn & Hyun, 2012). This research is also a correlational study in terms of determining the relation between the friendship relationships of children with and without special needs and being with special needs. Correlational studies are the studies that examine the relationship between variables and the effects of one or more variables on another variable (Mertens, 2010).

Study Group
56 pre-school teachers from 22 independent kindergartens participated in the study. The demographic characteristics of the teachers who participated in the study are presented in Table 1. Upon examining Table 1, it is observed that approximately half of the teachers are under 35 years of age, more than half of the teachers have more

than 10 years of experience, and all of them have bachelor's degree. When the completed data collection tools were examined and the scales containing missing items were removed, it was observed that 56 teachers who participated in the study completely filled in the data collection tools for a total of 112 children, 56 of whom were with special needs and 56 of whom were without special needs. In the comparison of the peer relationships of the children with and without special need, a total of 112 children, 56 with special needs and 56 without special needs, were included. In the determination of the children without special needs who participated in the study, one child in each class, who was in the same class with the children with special needs and who was selected by the random method, was included in the study. Table 2 presents information about children participating in the study.

Table 1.
Demographic characteristics of the teachers

Variables		N	%
	Between the age of 26-35	27	48.2
Age (years)	Over 35 years of age	29	51.8
	Total	56	100.0
	1-10 years	21	37.5
Experience (years)	Over 10 years	35	62.5
	Total	56	100.0
	Bachelor's Degree	56	100
Graduation status	Master's Degree	-	-
	Total	56	100.0

Table 2.
Demographic characteristics of the children in the study group

Variables		Children with special needs		Children without special needs	
		N	%	N	%
Gender	Girl	32	57.1	30	53.6
	Boy	24	42.9	26	46.4
	Total	56	100	56	100
Age	5	16	28.6	20	35.7
	6	40	71.4	36	64.3
	Total	56	100.0	56	100.0

Data Collection Tools
The Information Form and the Child Behavior Scale were used to collect data in the study.

Information form
This form developed by the researcher was used to determine the demographic characteristics of the children and teachers in the study group.

Child Behavior Scale
The original form of the scale was developed by Ladd & Profilet in 1996 to evaluate the peer relationships of preschool children at school. The adaptation of the scale to Turkish was performed by Gülay (2008). The scale consists of 6 subscales representing various variables, including aggressive behavior, prosocial behavior, asocial behavior, exclusion, being anxious-fearful, and hyperactivity. All items are evaluated with the statements of "Not Appropriate," "Sometimes Appropriate," and "Completely Appropriate." 0 points are given to the response of "Not Appropriate," 1 point is given to the response of "Sometimes Appropriate," and 2 points are given to the response of "Completely Appropriate." In the scale, a general total score is not mentioned due to the structure of the subscales. Each subscale is evaluated within itself. The total scores obtained from the subscales indicate how often the behavior that the scale represents occurs (Gülay, 2008). The Cronbach's alpha internal consistency coefficient of the Turkish version of the scale was found to be .87 for aggressive behaviors, .91 for prosocial behaviors, .84 for asocial behaviors, .89 for exclusion behaviors, .78 for anxious-fearful behaviors, and .82 for hyperactivity behaviors. The Cronbach's alpha

internal consistency coefficients of the CBS, calculated for this study sample, were .81 for aggressive behaviors, .88 for prosocial behaviors, .79 for asocial behaviors, .82 for exclusion behaviors, .85 for anxious-fearful behaviors, and .74 for hyperactivity behaviors (n=112). The total score obtained from the subscales indicates how often the child exhibits that behavior.

Data Collection
Firstly, in order to carry out the study in independent kindergartens affiliated to the Ministry of National Education, permissions from Malatya, Bolu and Gaziantep National Education Directorates were taken, later the school administrators were contacted by phone, and they were informed about the study. The teachers of the classes which could participate in the study were determined, and the teachers were interviewed by appointment. In the interviews, the teachers were asked to fill in the data collection tools for children with and without special needs in their classes, and the filled data collection tools were received one week later.

Data Analysis
To test the data for the purposes of the study, the Kolmogorov-Smirnov [K-S] test was used in testing the assumption of normality, and Levene statistics were used in testing the homogeneity of the data set. The results of the Kolmogorov-Smirnov test indicated the normal distribution of data [p>.05], and the results of Levene's test indicated the homogeneous distribution of variances [F=1.197; p=.276]. Accordingly, the t-test was used for unrelated samples in determining the peer relationships according to being with special needs, age, and gender, and the effect size was also calculated in this analysis. In the interpretation of the effect size, the eta square value of .01 was determined as the low effect size, .06 as the medium effect size, and .14 as the large effect size (Köklü, Büyüköztürk & Çokluk-Bökeoğlu, 2007). Whether being with special needs predicts the peer relationships of children with and without special needs significantly was checked by using simple linear regression analysis (Büyüköztürk, 2005).

Results

Results related to the comparison of the CBS scores of the children with special needs according to the gender variable
The results of the t-test, which was conducted in order to determine whether the scores obtained by the children with special needs from the subscales of the CBS scale differentiate according to the gender variable, are presented in Table 3. When Table 3 was examined, it was determined that the peer relationship sub-scale scores of the children with special needs were not significantly different according to the gender variable.

Table 3.
The t-test results related to the comparison of the CBS scores of children with special needs according to gender

CBS	Gender	N	X	ss	sd	t	p
Prosocial behavior	Girl	32	7.06	4.14	54	-.458	.649
	Boy	24	7.58	4.30			
Asocial behavior	Girl	32	6.59	3.68	54	.956	.344
	Boy	24	5.66	3.45			
Exclusion behavior	Girl	32	5.25	3.28	54	-.631	.531
	Boy	24	5.87	4.13			
Anxious-fearful behavior	Girl	32	8.00	3.92	54	.650	.518
	Boy	24	7.25	4.69			
Hyperactivity	Girl	32	4.68	2.20	54	1.931	.059
	Boy	24	3.54	2.18			
Aggressive behaviors	Girl	32	4.37	3.66	54	.700	.487
	Boy	24	3.75	2.75			

*p<.05

Results related to the comparison of the CBS scores of children with special needs according to the age variable

The results of the t-test, which was conducted in order to determine whether the scores obtained by the children with special

needs from the subscales of the CBS scale differentiate according to the age variable, are presented in Table 4. When Table 4 was examined, it was determined that the peer relationship sub-scale scores of the children with special needs were not significantly different according to the age variable.

Table 4.
The t-test results related to the comparison of the CBS scores of the children with special needs according to age

CBS	Age	N	X	ss	sd	t	p
Prosocial behavior	5	16	6.75	4.43	54	-.602	.550
	6	40	7.50	4.12			
Asocial behavior	5	32	6.25	4.10	54	.070	.944
	6	24	6.17	3.41			
Exclusion behavior	5	32	5.50	2.44	54	-.023	.982
	6	24	5.52	4.05			
Anxious-fearful behavior	5	32	7.25	4.58	54	-.474	.637
	6	24	7.85	4.15			
Hyperactivity	5	32	4.56	2.73	54	.767	.447
	6	24	4.05	2.05			
Aggressive behaviors	5	32	4.56	2.92	54	.652	.517
	6	24	3.92	3.44			

*p<.05

The results related to the comparison of the CBS scores of the children with special needs according to being with special needs
The results of the t-test for the unrelated samples, which was conducted in order to determine whether the scores obtained by the children with and without special needs from the subscales of the CBS scale differentiate, are presented in Table 5. When Table 5 is examined and the peer relationships of children with and without special needs are compared by using the t-test, a statistically significant difference is observed between the prosocial behaviors, asocial behaviors, anxious-fearful behaviors and hyperactivity behaviors of children with and without special needs, but there is not any difference in the aggressiveness and exclusion subscale scores. When Table 5 was examined, the effect size was calculated as η2=.07 for prosocial behaviors, as η2=.07 for asocial behaviors, as η2=.04 for fearful/anxious behaviors, and as η2=.09 for hyperactivity behaviors. The effect size values obtained for prosocial behaviors, asocial behaviors, exclusion behaviors, and hyperactivity behaviors were determined to be at a low level.

Table 5.
The t-test results related to the comparison of the CBS scores of children according to being with special needs

CBS	Special Need	N	X	ss	sd	t	p	η2
Prosocial behavior	With	56	7.28	4.18	110	-2.793	.006	.07
	Without	56	9.92	5.71				
Asocial behavior	With	56	6.19	3.58	110	2.694		.07
	Without	56	4.53	2.89			.008	
Exclusion behavior	With	56	5.51	3.64	110			
	Without	56	4.96	3.93		.772	.442	
Anxious-fearful behavior	With	56	7.67	4.24	110			
	Without	56	5.71	4.92		2.260	.026	.04
Hyperactivity	With	56	4.19	2.25	110			
	Without	56	2.94	1.92		3.161	.002	.09
Aggressive behaviors	With	56	4.10	3.29	110	1.803	.074	
	Without	56	3.03	2.99				

*p<.05

The results of the Simple Linear Regression Analysis with regard to predicting the peer relationships of children by being with special needs

When Table 6 is examined, it is observed that being with special needs significantly predicts prosocial behaviors [R^2 = 066, F (1,111) = 7.803] in favor of children without special needs. Again, it is observed that being with special needs significantly predicts asocial behaviors [R^2 = 062, F (1,111) = 7.256], anxious and fearful behaviors [R^2 = 044, F (1,111) = 5.106] and hyperactivity behaviors [R^2 = 083, F (1,111) = 9.991] separately in favor of children with special needs. It is observed that being with special needs does not significantly predict the exclusion behaviors [R^2 = 005, F (1,111) =.597] and the aggressive behaviors [R^2 = 029, F (1,111) = 3.252]. Being with special needs explains 6% of prosocial behaviors, 6% of asocial behaviors, 4% of fearful and anxious behaviors, and 8% of hyperactivity behaviors. Being with special needs predicts the hyperactivity behavior at most and the exclusion behavior at least.

Table 6.
The results of the Simple Linear Regression Analysis with regard to predicting the peer relationships of children by the status of being with special needs

Variable	β	t	p
Prosocial behaviors			
R = .257 R^2 = .066 *F* = 7.803	-.257	-2.793	.006
Asocial behaviors			
R = .249 R^2 = .062 *F* = 7.256	.249	2.694	.008
Exclusion behaviors			
R = .073 R^2 = .005 *F* = .597	.073	.772	.442
Anxious-fearful behaviors			
R = .211 R^2 = .044 *F* = 5.106	.211	2.260	.026
Hyperactivity			
R = .289 R^2 =083. *F* = 9.991	.289	3.161	.002
Aggressive behaviors			
R = .169 R^2 = .029 *F* = 3.252	.169	1.803	.074

Discussion

In this study, the peer relationships of preschool children with special needs were compared with their peers without special needs, whether the variable of being with special needs predicts the peer relationship of children was determined, and the peer relationships of children with special needs were examined in terms of the gender and age variables. As a result of the study, statistically significant differences were observed between the scores of children with and without special needs in the subdimensions of prosocial behaviors, asocial behaviors, anxious-fearful behaviors, and hyperactivity behaviors, but there were no differences between the aggression and exclusion behaviors sub-dimension scores. It is observed that being with special needs significantly predicts prosocial behaviors in favor of children without special needs, and asocial, anxious-fearful and hyperactivity behaviors in favor of children with special needs. Furthermore, it was determined that the gender and age variables do not create a statistically significant difference in the peer relationships of children with special needs.

In the first research question of the study, whether there was a difference in the subscale scores of the peer relationships of children with special needs according to the gender was examined, and any significant difference between the subscale scores of boys and girls was not determined. This result does not coincide with the results of many studies in the literature (Gülay, 2008; Gülay, 2011b; Salı, 2014; Walker, 2004; Walker, 2005; Tallandi, 2004; Walker, Berthelsen & Irwing, 2001; Crics, Casas & Mosher, 1997; Fabes, Shephard, Guthrie & Martin, 1997; Uluyurt, 2012; Yoleri & Seven, 2014). Studies in the literature, contrary to the results of this study, indicated that boys display aggressive and detrimen-

tal behaviors more often than girls, they exhibit prosocial behaviors less frequently, they have higher scores than girls in physical aggression, they are more reactive and repressive than girls, they are more prone to physical aggression and they are more likely to exhibit problem behaviors caused by temperament. On the other hand, the findings of this study were supported by the study conducted by Yüce (2015), and it was concluded that there was not a statistically significant difference in the peer relationships of children with and without special needs according to gender.

In the second research question of the study, whether there was a difference in the subscale scores of the peer relationships of children with special needs according to age was examined, and any significant difference between the subscale scores of five and six-year-old children was not determined. When the results of the studies in the literature on children without special needs are investigated, it is observed that Gülay (2011b) concluded that asocial behaviors, exclusion behaviors, and hyperactivity behaviors differ by the age variable. However, in the same study, Gülay (2011b) concluded that there was no difference in terms of prosocial behaviors, anxious-fearful behaviors, and aggressive behaviors according to the age variable. Yoleri & Seven (2014) determined in their study that the age variable did not cause a significant difference in the prosocial behavior scores of normally developed children. In another study, a significant difference was determined between the scores of normally developed 5-6-year-old children in terms of being anxious-fearful against the peers, which is one of the sub-dimensions of the CBS, but a difference was not observed in the other sub-dimensions which are prosocial behaviors, asocial behaviors, aggressive behaviors, exclusion behaviors and hyperactivity behaviors (Salı, 2014). The results of the study are parallel to the results of the study indicating that there is no significant relationship between children's aggressive behaviors and age groups (Persson, 2005; Uluyurt, 2012). It is observed that the studies investigating the peer relationships of children with special needs in terms of the age variable have different results from each other. In a study conducted by Yüce (2015), it was concluded that while there was a difference between the 5 and 6-year-old children's prosocial behaviors according

to the age variable, significant differences were not determined between the other friendship behaviors, which are aggression, asocial behaviors, anxious-fearful behaviors, exclusion behaviors and hyperactivity behaviors, according to age. In this study, there was no significant difference in the peer relationships of children with special needs according to age groups. This result is not consistent with the findings of many studies in the literature (Gülay, 2011b; Salı, 2014).

In the third research question of the study, whether the peer relationships of children differed according to being with special needs was examined. As a result of the study, it was found out that the prosocial behaviors' scores of the children with special needs were significantly lower than those of their peers without special needs. According to this result, it can be stated that children with special needs display less helpful, sharing and cooperative behaviors to their peers. The results of the study are similar to the results of the studies which state that there is a significant difference between the social behaviors of children with special needs who aim to help their peers without special needs (Sucuoğlu & Özokçu, 2005; Çulhaoğlu-İmrak & Sığırtmaç, 2011). The studies indicate that the prosocial behaviors of children with special needs are more limited compared to their peers without special needs.

As a result of the study, it was found out that the asocial behaviors of children with special needs were significantly higher compared to their peers without special needs. This result of the study is in line with the results of the study indicating that children with special needs display alone, timid, non-sharing, and non-supportive behaviors compared to children without special needs (Deschamps, Schutter, Kenemans & Matthys, 2014). Taylor, Asher &Williams, (1987) described the asocial behaviors of children with special needs as more timid, shyer, more introverted, less cooperative and less friendly in comparison with their peers without special needs.

As a result of the study, it was determined that the anxious-fearful behaviors of children with special needs were significantly higher compared to their peers without special needs. This result of the study shows similarities with the results of the studies indicating that children with special needs exhibit unhappy, anxious, troubled,

weeping, shy, fearful behaviors in comparison with children without special needs (Saylor & Leach, 2008; Yüce, 2015). The studies suggest that being anxious-fearful may result in child's being rejected and excluded by the peers, but it may also occur as a result of rejection by peers for different reasons, such as aggression (Harrits et al., 1997). However, being anxious-fearful may increase the probability of children to be exposed to peer violence (Ladd & Profilet, 1996).

As a result of the study, it was indicated that the hyperactivity of children with special needs was significantly higher compared to their peers without special needs. This result is in line with the results of many studies in the literature (Akalın, 2007; French & Waas, 1985; Sater & Frech, 1989; Sucuoğlu & Özokçu, 2005; Yüce, 2015). In the literature, it is stated that when children with special needs are compared with their peers without special needs, they are more active and hasty, they can not stand in their places, they can not keep motionless, they are careless and untidy (Sucuoğlu & Özokçu, 2005; Yüce, 2015).

In this study, a statistically significant difference was not found out between the subscale scores of aggressive and exclusion behaviors of children with and without special needs. A significant difference was not found between the aggressive behaviors of children with and without special needs towards their peers. This result is in line with the study of Taylor et all., (1987) which reported that the destructive and aggressive behaviors of children with special needs were not different from their peers without special needs. On the other hand, this result does not coincide with the results of many previous studies (Akalın, 2007; Sucuoğlu & Özokçu, 2005; Yüce, 2015). As in aggressive behaviors, there was no significant difference also in exclusion behaviors between children with and without special needs. In other words, in this study being with special needs did not lead to a difference in exclusion behavior. However, upon examining the literature, in contrast to the results of this study, many studies state that children with special needs are more excluded than their peers without special needs (Baydık & Bakkaloğlu, 2009; Sucuoğlu & Kargın, 2006; Şahbaz, 2004; Yüce, 2015).

In the fourth research question of the study, whether being with special needs significantly predicts the peer relationships of children with and without special needs was examined, and it was determined that being with special needs significantly predicts prosocial behaviors in favor of children without special needs. This result suggests that being with special needs may have a direct effect on the prosocial behaviors of these children. This results of the study is consistent with the results of many studies in the literature (Deschamps et al., 2014; Guralnick et al., 1996a; 1996b; Guralnick, et al., 2006; Roberts & Zubrick, 1992; Taylor et al., 1987), which indicates that children with special needs exhibit less prosocial behaviors, have less social interaction, and exhibit more negative interaction styles, when their prosocial behaviors are compared with their peers without special needs. Again, being with special needs significantly predicts asocial behaviors, anxious-fearful behaviors, and hyperactivity behaviors separately in favor of children with special needs. This result indicates that in preschool classes where inclusive practices are carried out, providing training to teachers on knowledge and skill teaching in the subject of the reduction of problem behaviors and teaching social skills is inevitable. On the other hand, the results of the study indicated that being with special needs did not significantly predict the aggressive and exclusion behaviors of children. This result does not coincide with the results of the studies conducted by Sucuoğlu & Özokçu 2005; Akalın, 2007; Şahbaz, 2007; Yüce, 2015, which indicate that children with special needs are more excluded and more rejected than their peers. This result suggests that different variables (social skills, social position, language skills, etc.) may play a role in the exclusion of children with special needs by their peers, and in their aggressive behaviors towards their peers.

As a result of this study, which was planned to examine the peer relationships of children in preschool inclusive environments in terms of being with special needs, age and gender variables, it was observed that the peer relationships of children with special needs significantly differed from their peers without special needs. The fact that among the variables which can affect the peer relationships of preschool children the variables related to the child (social skills, problem behaviors, self-regulation, temperament and preschool education duration), the family (child-rearing attitudes, relationship between parents and children,

communication with children, and family structures), the teacher (education, attitudes, experience, self-efficacy) and school (curriculum, class size, support for teachers) were not included in this study can be stated as the limitation of the study. According to the results obtained, variables which are related to the child, school, and family and which can affect the peer relationships of preschool children should be examined with different assessment methods, and the variables affecting and predicting the peer relationships of children should be determined by cross-sectional or longitudinal studies. It can be suggested to develop effective intervention programs which will increase the peer acceptance of children with special needs in preschool inclusive environments and to examine the effectiveness of these programs. The use of effective intervention programs for improving the peer relationships and social acceptance of children with and without special needs in preschool inclusive environments is considered necessary. Furthermore, for the success of inclusive practices, to provide social skills training to children with and without special needs and to include supporting social acceptance in the pre-service and in-service teacher education are important.

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The Effectiveness of Parent Training A Mothers of Children With Autism Use of Mand Model Techniques

Abstract

The present study examined the effectiveness of the parent training program that was designed for the mothers of children with Autism Spectrum Disorders in enabling them to use the mand-model procedure. The study was conducted with the participation of 3 boys with Autism Spectrum Disorders and their mothers. As part of the study, the mothers were taught the mand-model procedure, which is one of the milieu teaching techniques. As a research method, the present study employed the subject research models of between-subject and multiple probe design models. The findings of this study suggested that the parent training program designed with a view to teaching the mand-model procedure was effective and consequently the mand-model procedure used by the mothers was also effective in teaching new words to the children with Autism Spectrum Disorders and enabling them to maintain such words over time.

Keywords: Autism Spectrum Disorders, Milieu Teaching, Mand Model, Parent Training.

Introduction

Autism Spectrum Disorder (ASD) is a neuro-developmental disorder, which is characterized by the insufficiency and limitation of communication and social interaction and repeated stereotypical behaviors (Allen, & Cowdery, 2009; DSM-V, 2013; Heward, 2009). Despite the broad nature of the symptoms associated with the ASD, the insufficiencies observed in regaining speech and developing communication skills are almost the common characteristics of all the children with ASD (Kaiser, & Hancock, 2002; Montgomery, 2003). The most striking feature among the language patterns of the children with ASD is the diversity of the language itself (Tager-Flusberg, Joseph, & Folstein, 2001; Wilkinson, 1998). The children with ASD demonstrate various different language patterns ranging from highly advanced syntactic skills and functional speech to limited speech (Bishop, 2003; Lord, & Richler, 2006; Wilkinson, 1998).

Kanner (1943) explains such differences in the development of language skills among children with delayed speech, no speech, echolalia, non-contextual speech, inverse or erroneous use of pronouns, vocabulary regarding limited areas of interest. While typical developed children learn the contextual, formal and usage aspects of the language quickly and easily as a result of their natural lifestyle and social interaction with their environment and put their language skills to use effortlessly in their daily life (Yakın, 2009), the children with ASD are in need of certain arrangements for acquiring the formal and contextual characteristics and the pragmatic use of the language (Lewis, & Norwich, 2005). It is suggested that the use of structured teaching techniques (such as teaching through discrete trial training etc.) and naturalistic language teaching methods are effective in enabling children with ASD to acquire such skills. Structured language teaching methods are considered to be effective methods in teaching children with ASD particularly the fundamental words and word

formations and reducing echolalia or other behaviors that fail to conform to the peculiar language forms and usage (Lord, 1985; Paul, 2008). However, due to their adult centric (mothers, teachers) nature, such methods limit the spontaneous communication capacity of the children with ASD, who are inclined to seek instructions, and may cause them to be dependent on adults for prompting before engaging in interaction (Carr, 1985). Structured teaching programs conducted on a one-on-one basis cause children to experience limitations in terms of putting their acquired skills into practice in their daily lives and have difficulty in making generalizations (Charlop-Chrısty, & Carpenter, 2000; Lord, 1985). It is suggested that the language teaching programs should include methods that will help reduce the limitations in maintaining and generalizing the skills acquired through structured teaching methods, and enable children with ASD to initiate interaction spontaneously and generalize their acquired skills with regard to new environments and persons, and which will involve less supervision on the part of the adults (Paul, 2008). The natural teaching methods that are effective in enabling children with ASD to learn new skills and develop and generalize communication skills spontaneously are considered to be the alternative methods that will help reduce the limitations of structured teaching methods (Christensen-Standford, & Whinnery, 2011).

Naturalistic language teaching methods are one of the evidence-based practices employed in the training of children with ASD, which is included in the National Standards Reports published by the National Autism Center (NAC, 2015; 2009). Naturalistic language teaching methods employ behavioural principals that support the pragmatic use of language and are consistent with natural environments through the use of functional social interactions, instead of using a stimulus-response method (Choi, & Kim, 2005; Paul, 2008). The main purpose of the teaching process is to pique the child's interest and ensure his/her involvement in the activity.

Naturalistic language teaching methods include milieu teaching (Halle, Baer, & Spradlin, 1981), incidental teaching (Hart, & Risley, 1968), and pivotal response training (Koegel, & Koegel, 2006) (Ingersoll, 2011; Rogers, 2006). Milieu teaching is a naturalistic language intervention. Milieu teaching include modeling procedure, mand-model procedure, time delay procedure and incidental teaching procedure. Of those milieu teaching, the mand-model - model procedure is an effective technique for the children with ASD who lag behind in terms of language development skills and have difficulty in initiating interaction spontaneously (Rogers-Warren, & Warren, 1980). In this procedure, the number of interactions to be held between the adult and child is supervised by the adult, but the materials to be used in such interactions are solely chosen on the basis of the child's interests and requests and the environment is arranged in such a way as to encourage the child to speak (Charlop-Christy, LeBlanc, & Carpenter, 1999).

The literature contains a good number of studies demonstrating to the effectiveness of the use of milieu teaching as a natural teaching method for supporting the communication skills of children. The studies conducted on the children with intellectual disabilities (Halle, Marshall, & Spradlin, 1979; Yoder, & Warren, 2002; Warren, & Gazdag, 1990; Kaiser, & Roberts, 2013), language delay (Yoder et al.1995), developmental delay (Kaiser, Hemmeter, Ostrosky, Alpert, & Hancock, 1995), ASD (Charlop, Schreibman, & Thibodeau, 1985; Hart, & Risley, 1974; Laski, Charlop, & Schreibman, 1988) as well as on the children of families at risk (Peterson, Carta, & Greenwood, 2004) all suggest that the milieu teaching methods are effective in teaching communication skills. Moreover, the literature also includes studies suggesting that the milieu teaching methods are employed in various different teaching environments such as nurseries (Halle et al., 1979), kindergartens (Hart, & Risley 1975, Warren, & Gazdag, 1990) and the actual home environment (Hancock, & Kaiser, 1996) by instructors (Christensen-Standford, & Whinnery, 2011; Halle et al., 1981; Rogers-Warren, &Warren, 1980; Toğram, 2004) and siblings (Hancock, & Kaiser, 1996). The application of natural teaching methods by adults is beneficial in terms of providing natural patterns in the interaction between the mother and child; quick learning of functional skills during the interaction; consistent teaching of skills and applying thus acquired skills into other situations that arise spontaneously (Kaiser, Hester, Alpert, & Whiteman, 1995). The studies conducted in the field suggest that natural teaching methods are easily learned and implemented by parents and can be generalized

to teach various different skills by parents and are ultimately effective in teaching children the intended communication skills (Alpert, & Kaiser, 1992; Kaiser, Hancock, & Nietfeld, 2000). Moreover, it is reported that such interventions have positive effects on the interaction between the mother and child (McCathren, 2010). The literature includes studies in which the milieu teaching methods are taught to parents in order to support children's language development and teach additional communication skills. The studies conducted show that mothers learn the techniques included in the milieu teaching (Alpert, & Kaiser, 1992; Kaiser et al., 1995; Laski et al., 1988; Peterson et al., 2005; Yeh, 1994), and that there is progress in children's language development (Kaiser et al., 2000; Kaiser et al., 1995) and that the procedure has a positive effect on the interaction between the mother and child (McCathren, 2010).

The present study differs from other studies in the literature in that it studied the effectiveness of a parent training program that is designed solely based on one particular milieu teaching method, namely the mand-model procedure, in enabling mothers to use the said procedure. In line with the general purpose of this study, answers were sought to the following questions: i) Is the parent training program effective in enabling Nur, Gül and Oya to acquire, use and maintain the mand-model procedure even after the training is over? ii) Is the parent training program effective in enabling Ali, Efe and Ege to learn the designated target words? iii) What is the opinion of mothers regarding the effectiveness of the parent training program?

Method

Participants

This study was conducted with the participation of three children diagnosed with ASD with limited expressive language skills and their mothers. In choosing the participants of this study, certain preliminary conditions were identified for the participants. The preconditions sought for choosing the children for this study: being at least six months behind the required level of expressive language (based on the Test of Early Language Development (TELD) results), ability to imitate verbal expressions (words), possessing a vocabulary of at least 10 words and being able to use them spontaneously,

having no additional disability (in terms of hearing and seeing), having no problematic behavior that preclude their participation in the study, being aged 4 to 7, having been diagnosed with ASD. The preconditions sought for choosing the mothers for this study: having no history of participating in any parent training program prepared for teaching communication skills, participating in this study on a voluntary basis, agreeing to be filmed on camera, participating in all training sessions.

Nur, 32, is a housewife and an high school graduate. Ali, 5, attends an inclusive class (at a day nursery) and is being educated in a special training and rehabilitation center. He was diagnosed with ASD when he was 4 years old and started his education since then. Ali's the Test of Early Language Development score suggests that he is at the level of 3 years 4 months in terms of receptive language and of 3 years 1 month in terms of expressive language.

Gül, 36, is a housewife and an high school graduate. Efe, 5, attends an inclusive class (at a day nursery) and is being educated in a special training and rehabilitation center. He was diagnosed with ASD when he was 4 years old and started his education since then. Efe's the Test of Early Language Development score suggests that he is at the level of 2 years 3 months in terms of receptive language and of 2 years 1 month in terms of expressive language.

Oya, 32, is a housewife and a primary school graduate. Ege, 7, was diagnosed with ASD when he was 2 years old and started his education since then. He attends an inclusive class (first form) and is being educated in a special training and rehabilitation center. Ege' s the Test of Early Language Development score suggests that he is at the level of 4 years 3 months in terms of receptive language and of 4 years 2 month in terms of expressive language.

Setting

The interviews for choosing the participants were held in the individual training rooms of the Special Training and Rehabilitation Center, while the actual implementation of the study took place at the mothers' homes.

Dependent – Independent Variables

The independent variable of the study is the parent training program, which is designed with a view to teaching the mothers the

"mand-model" procedure, which is a milieu teaching method. There are two dependent variables of the study. The first dependent variable is the frequency of correct use of the mand-model procedure by the mothers of children with ASD who possess limited expressive language skills. The second dependent variable is the percentage ratio of the children with ASD to produce the targeted words.

Mand Model Procedure

The mand-model procedure, the number of interactions to be held between the adult and child is supervised by the adult, but the materials to be used in such interactions are solely chosen on the basis of the child's interests and requests and the environment is arranged in such a way as to encourage the child to speak (Charlop-Christy, LeBlanc, & Carpenter, 1999). In the mand-model procedure, the participant,

1. Makes the necessary environmental arrangements for initiating the interaction in which the intended skill is to be taught, a) It chooses objects that are appropriate for the child's age, loved, and remarkable; b) Makes objects incomprehensible; c) Give it in a limited amount; d) It offers a choice; e) It creates amazing situations; f) She creates situations that she might want help with.
2. Watches the child and establishes a mutual interest with the object in which the child is interested,
3. Elicits response from the child,
4. Broadens the child's vocabulary by adding new words to the correct responses provided by the child and commends and rewards the child as a result of his efforts,
5. Serves as a model for the erroneous responses provided by the child and asks for corrective responses instead,
6. Broadens the child's vocabulary by adding new words to the correct responses provided by the child and commends and rewards the child as a result of his efforts.

Parent Training Program

A parent training program, consisting of two stages, was prepared in order to enable the mothers of children with ASD to use the mand-model procedure. The first stage of the parent training program involved lectures and video tutorials regarding the mand-model procedure and engaging mothers in roleing activities and preparing sample training sessions on the designated days. The mothers were lectured on the subject of mand-model procedure through PowerPoint presentations. Following the lecture, the mothers were shown sample training session videos prepared by the researcher in order to give them an idea as to how the mand-model procedure was actually implemented. After having watched the sample training sessions, the mothers were asked to prepare their own training sessions and the training sessions thus prepared were enacted. An assessment test was prepared to measure the mothers' levels of knowledge regarding the mand-model procedure. The assessment test consists of 15 multiple choice questions. The test in question was prepared based on the specified subject matter and an expert opinion was sought for the test.

The second stage of the parent training program involved the play sessions in which the mothers could engage in interaction with their children. All the training sessions performed throughout the study were conducted individually with the participants. The first stage of the program was completed in 4 sessions with each mother. In the study, a number of tool sets -consisted of interaction based plays that would enable the mother and child to speak to each other- were identified to be used in the interactions between the mother and child. Moreover, the tool sets also included the usage of words and sentences that were intended to be taught to the children. Table 1 shows tool sets used in the interaction between the mother and child.

Table 1.

The tool sets used in the interaction between the mother and child.

Mother	Tool Set
Nur	Fruit seller game, fruit magnets, market stand
Gül	Clothes, laundry basket, gift-wrap
Oya	Professions, a street stand where the businesses related to the professions are located, human magnets

In this study, teaching targets were set in accordance with the individual performance of each child. Such targets included teaching words to the children number one and two and enabling the child number three to form three word sentences. In setting targets for children, consideration was given to their individual language performance (as provided in the parent interview forms) and the requirements of their mothers. While choosing the targets, the names related to the designated subjects (clothes, professions, fruits) were listed and the children were asked to pronounce the names of the objects shown to them. An additional list was made of the words that children failed to express. The aim was then set to pick 5 words off that list and teach them to the children. In setting the target for the child number three, however, the words in that list were asked to be used in a sentence. Table 2 shows target words for the children.

Table 2.

Target words

Children	Target words
Ali	Cherry, Grape, Watermelon, Plum, Pear
Efe	Jacket, Jumper, Shirt, Pants, Shorts
Ege	A tailor sews, a butcher sells meat, a baker sells bread, a constructor builds houses, a fruit seller sells fruits.

Data Collection Tools

Test of Early Language Development (TELD)

The Test of Early Language Development (TELD) in Turkish language was performed to determine the levels of children's receptive and expressive verbal language skills. The Test of Early Language Development in Turkish language is the version of the Early Language Development Test-Third Version (TELD-3) that is translated into Turkish language and adapted into the Turkish cultural context. The adaptation of the Test of Early Language Development - which is used for assessing language development in children aged 2 to 7- into Turkish language and culture as well as the validity and reliability studies regarding the same were performed by Güven and Topbaş (Güven, & Topbaş, 2014). A sample of TELD 359 was applied. In the validity study, it was found that the test was able to distinguish the groups with and without normal language development, the alternative forms were sufficiently compatible with each other, and the correlation with age was high as it was a developmental test (Güven, & Topbaş, 2014).

Experimental Design

The present study employed the multiple probe designs one of which was single subject research models. The implementation process of this study consisted of full probe sessions, probe sessions, intervention sessions and maintenance sessions.

Baseline

Baseline was done in two stages. The first is the full probe phase, the second is the probe phase

Full probe sessions

The full probe sessions were conducted before and after each training session with each mother in order to collect baseline data. When the baseline data provided by all mothers was found to be stable, the parent program was implemented for mother number one. When the data gathered from mother number one was found to be 100% stable at the end of the intervention session, a full probe session was held with the participation of all mothers. When the data obtained from all the mothers at the full probe session was found to be stable, the program was implemented for mother number two. This process was maintained until the required criterion was met with every mother. In the probe sessions, the mothers were told to "with their child as they would in their everyday life". The interaction between the mother and child was recorded on video for 5 minutes. No feedback was given to the mothers regarding their implementation performance throughout the session.

Probe Sessions

Although the probe sessions were conducted in a manner similar to the full probe sessions, they were only meant for the mothers that were under training. The data obtained during those sessions constituted the implementation stage of the study. In the probe sessions, the mothers were given the tool sets that included the designated target words. The mothers were told to " with their child in such a way as to use the designated target words". The interaction between the mother and child was recorded on video for 5 minutes. All three mothers were given feedback regarding their shortcomings and errors observed during the first three probe sessions. The probe training sessions were ended once all the mothers were able to fulfill the steps of the mand-model procedure at 100% efficiency consecutively for three sessions.

Intervention Sessions

The intervention sessions were held on a one on one basis with all mothers. The intervention sessions were completed in two stages. The first stage involved lectures and video tutorials on the mand-model procedure and the mothers were asked to prepare sample intervention sessions and engage in roleing activities. Before proceeding to the second stage and after the completion of the first stage, the mothers were asked to take an assessment test to determine their levels of fulfilling the training objectives with respect to the mand-model procedure. Once the mothers achieved a 90% success rate at the end of training assessment test, it was proceeded to the next stage.

The second stage of the intervention sessions involved interactions between the mother and child. Such sessions lasted for approximately 20 minutes. During the first 10 minutes of those sessions, the questions raised by mothers regarding the mand-model procedure were discussed, and in the following 5 minutes the play activities were performed using the mand-model procedure. During the sessions, trials were conducted in which each of the 5 target words were produced on every occasion. Five of the trials were recorded. In the second stage of the intervention sessions, mothers made *environmental arrangements* for pre and during play activities with regard to the play to be ed. During those activities, whenever the child's interest arose,

they requested response from the child by asking him questions (such as "what do you want", "what do you have in your hand', "what is in here") or providing him with options (such as "do you want to buy a jacket or a pair of pants"). When the child gave the correct response, they gave him the object he asked for by extending the length of the sentence such as "let us buy a jacket" or "blue pants". When the child remained silent or gave the wrong response, the mother set herself as a model for the right response or asked for a corrective response. When the child gave the correct response, however, the things he said were extended to include more words and then he was allowed to receive the object he wanted. The mothers were given materials regarding the designated target words before the play sessions. However, no intervention was made with respect to the play contents and environmental arrangements. The mothers came up with various different plays using the same tool set (for instance; one mother was given fruit magnets, with which she fashioned a fruit picking play in one session and a fruit selling play in another).

The researcher was present during the play sessions. The errors committed by mothers during the activities regarding the implementation steps were discussed at the end of the session. The researcher provided the mothers with feedback regarding the incomplete or incorrect parts during the first three play sessions. Examples were provided for the correct implementation of the incorrect steps. In the later sessions, the mothers were asked to evaluate the session in terms of their environmental arrangements, the steps they implemented and the parts which they believed were incomplete or incorrect, and to state their opinion as to how they would go about correcting the incomplete-incorrect parts. The play sessions continued until the mothers were able to fulfill the steps of the mand-model procedure correctly and consecutively for three probe sessions.

Maintenance Sessions

Maintenance sessions were organized by the researcher in the 2nd week following the end of the training. They were held in the form of group sessions with a view to examining to what extent the mothers maintained the knowledge they acquired from the training sessions after the completion of the training. No maintenance session was held

with the mother number three due to family reasons.

Data Collection

The reliability data of the study were collected by two research workers working in the field of special education. Observers are doing master's degree in Abant Izzet Baysal University Special Education Department, Department of Mentally Handicapped Teaching.

Interobserver Agreement

For ensuring interobserver reliability in this study, a neutral appointment was made and at least 30% of the total number of experimental sessions. In calculating interobserver reliability, the following formula was used: "Total Agreement \ Agreement + Disagreement x 100". In this study, interobserver reliability was established as follows: for Nur 96.66%, for Gül 93.33%, and for Oya 100%.

Fidelity of Implementation

Implementation reliability data was collected for the purpose of ascertaining whether the parent training program prepared in this study was implemented correctly by the researcher. In order to ensure implementation reliability, a neutral appointment was made and at least 30% of the intervention sessions. The collected data was calculated by employing the following formula: "observed practitioner's behavior \ planned practitioner's behavior × 100". In the end, the implementation reliability regarding the correct implementation of the parent training program designed for teaching the mand-model procedure was established as follows: for Nur 100%, for Gül 98%, and for Oya 100%.

Social Validity Data

In this study, social validity data was collected from mothers for the purpose of ascertaining whether the parent training program, designed for enabling mothers to teach the targeted language skills to their children, was suitable and determining the importance of the prospective results of this study for mothers and their children. The social validity form consisted of 8 questions. An expert opinion was sought with respect to the questions. The social validity data was analyzed using descriptive analysis method. The obtained data was then converted into written text format in the computer environment by the researcher, after which themes were created and the findings interpreted.

Data Analysis

The data obtained from mothers was shown in a line chart, the data obtained from children with ASD was shown in a column chart. The charts were analyzed through visual analysis method. The "y" axis of the chart represents the percentage of the correct responses given by the participants, while the "x" axis represents the number of sessions held.

The social validity data obtained from mothers was analyzed using descriptive analysis method. The obtained data was then converted into written text format in the computer environment by the researcher, after which themes were created and the findings interpreted.

Results

The data regarding the effectiveness of the parent training program designed for teaching mothers the mand-model procedure, a milieu teaching technique, is shown for all mothers in the figure 1 below.

While the responses given by Nur, the first participant, with respect to the implementation steps of the mand-model procedure were approximately 33% correct during the baseline sessions, her responses were 100% correct during the intervention sessions. Stable data was achieved with Nur in 8 intervention sessions. An observation study was conducted with Nur in order to ascertain whether she still maintained her acquired skills two weeks after the completion of the intervention sessions. The data obtained from the observation study suggested that she still maintained the level (100%) she reached during the intervention sessions. While the responses given by Gül, the second participant, with respect to the implementation steps of the mand-model procedure were approximately 24% correct during the baseline sessions, her responses were 100% correct during the intervention sessions. Stable data was achieved with Gül in 9 training sessions. An observation study was conducted with Gül in order to ascertain whether she still maintained her

acquired skills two weeks after the completion of the training sessions. The data obtained from the observation study suggested that she still maintained the level (90%) she reached during the intervention sessions. While the responses given by Oya, the third participant, with respect to the implementation steps of the mand-model procedure were approximately 13% correct during the baseline sessions, her responses were 100% correct during the intervention sessions. Stable data was achieved with Oya in 5 training sessions. No observation study was conducted with Oya due to parent reasons and as she had to move her house elsewhere.

Figure 1.

The percentages of correct responses given by Nur, Gül and Oya at the baseline, intervention, full probe and maintenance sessions with respect to the effectiveness of the training program designed for teaching the mand-model procedure, a milieu teaching technique.
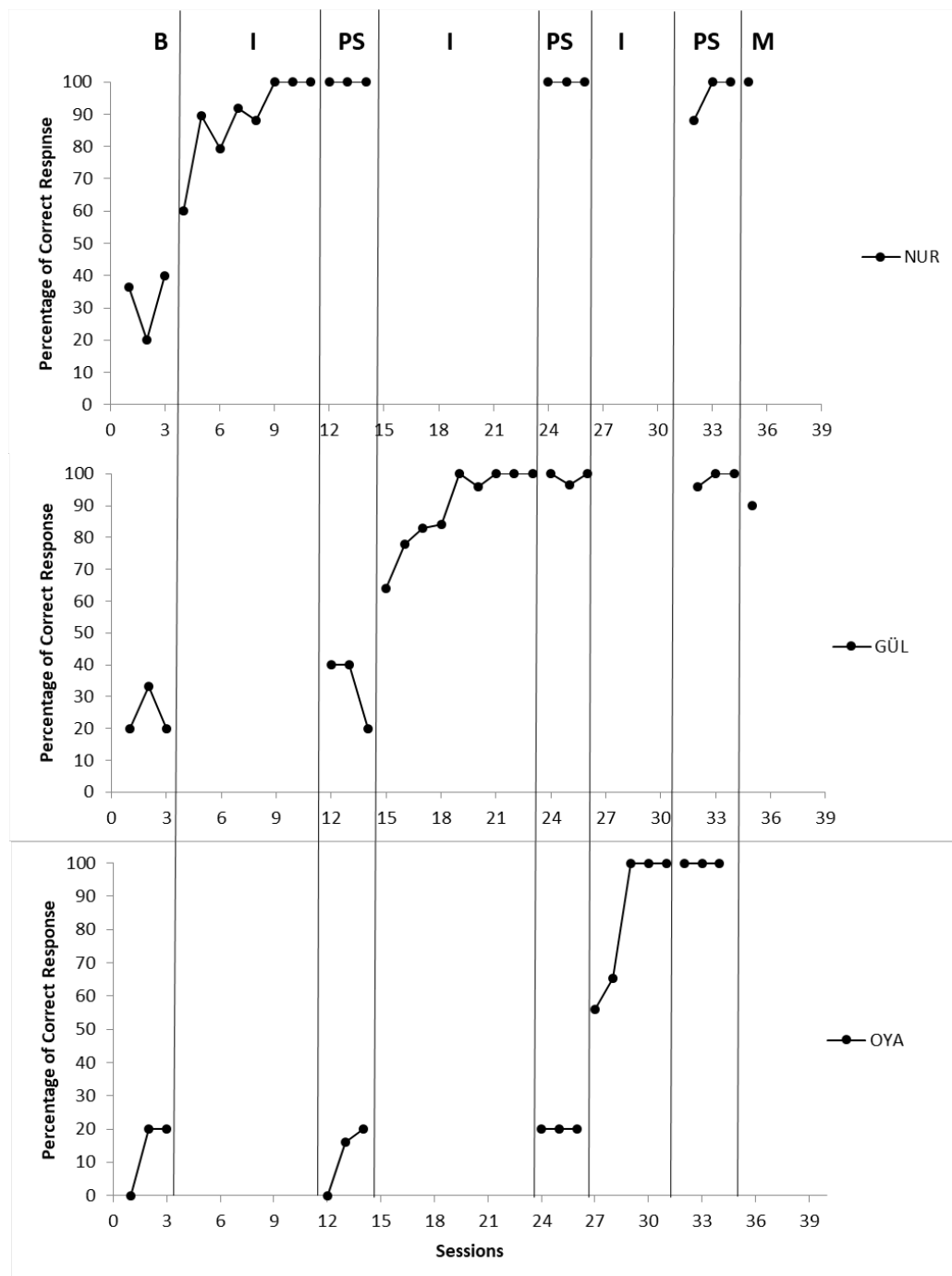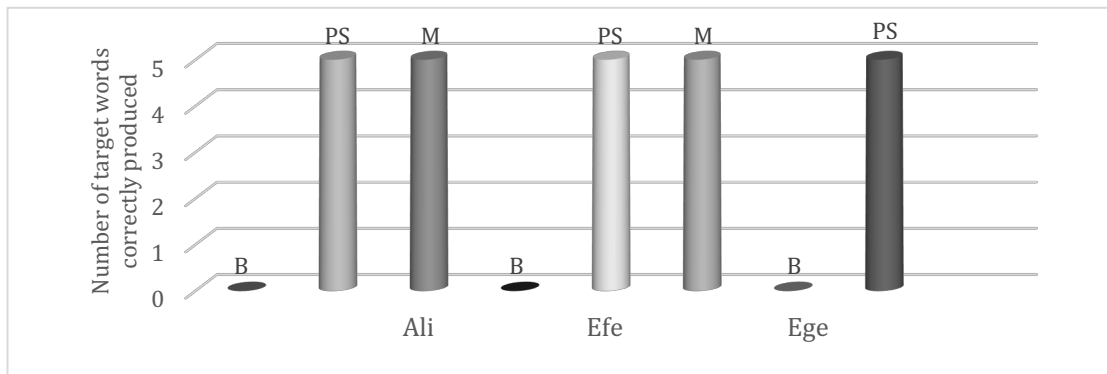
The findings regarding the effectiveness of the mand-model procedure, as implemented by mothers, in children with ASD's learning and maintaining the target words are shown in the figure 2 below.

Figure 2.

Number of correctly produced words by Ali, Ege and Efe during the baseline, probe sessions and maintenance sessions.

The figure 2 suggests that while none of the children had been able to produce the target words prior to the implementation of the mand-model procedure by their mothers, they were able to produce all of the target words correctly during the final full probe session. The maintenance sessions held with Ali and Efe demonstrates that they were able to produce all of the target words even after the completion of the training program. No maintenance session was held with Ege due to parent reasons.

At the end of the study, mother's opinions were sought regarding the study in which they had just participated and the social validity of the study was established. All three mothers stated that they were happy to have participated in the parent training program designed for teaching them the "mand-model procedure", a milieu teaching technique, and that they could recommend this program to other mothers as well. The mothers reported that they could easily use the mand-model procedure in teaching various different skills to their children and that the procedures in question met the requirements for developing their children's language skills.

The mothers reported that the present study affected their interaction with their children in a positive way and that they were now ing more purposeful plays with their children, and that their children started to show more interest towards them and that their children started to learn new things and improve on their vocabulary as a result of this process. The mothers shared their thoughts regarding the interactions with their children as follows: *Nur: "I and my husband were constantly trying to get Ali to say some words" We were being insistent when he declined to do so. Now I am trying to teach him words while ing with him. I am not being insistent with him anymore. I'm only talking about the correct pronunciation of words. Now I know how I should talk and what I should be careful about when interacting with him, Gül: "Efe has started to show more interest towards me. His vocabulary increased. He has started asking questions. He has started to learn while ing, Oya: "We did not use to with Ege very often. He used to with his sibling instead. Now I join them when I have the time. Even if I am not ing with them, I give them a shout from the kitchen while doing my chores. I try to talk to him then."*

Discussion

The present study examined the effectiveness of the parent training program that was prepared for the mothers of children with ASD in enabling mothers to use the mand-model procedure. The parent training program was examined in terms of whether it was effective in enabling mothers to teach the targeted communication skills to their children. The findings of the study suggest that the parent training program prepared with the aim of teaching mothers the mand-model procedure, a milieu teaching technique, was in fact effective in achieving the intended objective, and that the mand-

model procedure implemented by the mothers were effective in enabling them to teach the target words to their children with ASD, and that both the mothers and children maintained the the skills they learned even 2 weeks after the completion of the training. The study results also show that the opinions of the mothers participating in the study were positive about the mand-model procedure.

A detailed examination of the study findings suggests that the mothers fulfilled the steps of the mand-model procedure 0 to 40 percent correctly during the baseline sessions. The baseline data shows that the mothers did not use the mand-model procedure in the interaction they maintained with their children with ASD and they did not establish any interaction that would help improve the communication skills of their children with ASD. However, the fact that mothers used some of the procedural steps - such as making environmental arrangements while maintaining a full interaction with their children with ASD- randomly resulted in the baseline data to vary between 0 to 40%. The baseline data suggests that the mothers had difficulty in putting together interesting activities and materials in their interaction with their child; they failed to facilitate the arrangements that would enable them to engage in verbal communication with their children during the play; they mostly selected to watch their children rather than talking to them during the play and had a hard time getting their children interested in the play. Such data appears to be similar to the findings of Yakın's (2009) and Kaiser and Hancock's (2002) study.

It was observed during the intervention and probe sessions that the mothers were able fashion different plays by using the tool sets they were given during the baseline stage and employed the environmental arrangement strategies in an effective and creative manner and performed multiple trials regarding the targeted language skills in a single intervention session. Such observations suggest that the mothers learned the mand-model procedure through the parent training program and implemented the said procedures effectively in teaching communication skills to their children with ASD. The fact that the mothers were able to teach their children the targeted language skills by using the mand-model procedure was established by this study as well. This result appears to be consistent with the findings of

other studies regarding the teaching of various skills and techniques to families through parent training programs (Özcan, 2004) and the studies where the milieu teaching procedures were implemented through the collaboration of families (Alpert ve Kaiser, 1992; Kaiser, Hancock ve Nietfeld, 2000; McCathren, 2010).

It is believed that the contents of the parent training program, the number of sessions held and the way they were conducted have been effective in enabling mothers to learn the methods and procedures in question and maintain them even after the completion of the trainings. In their study, Kaiser et al. (1995) aimed at teaching the families the milieu teaching techniques of modeling, mand modeling, time delay teaching and incidental teaching along with 7 environmental arrangement strategies within 8 training sessions. The findings of their study suggested that 8 training sessions were not enough for teaching mothers the said 4 milieu procedures and 7 environmental arrangements strategies. The present study focused exclusively on the mand-model procedure and the environmental arrangement strategies rather than teaching the mothers all of the milieu teaching techniques in consideration of the limitations presented by the study conducted by Kaiser et al. (1995). The present study aimed at teaching only one of the milieu teaching techniques, namely the mand-model procedure, and the environmental arrangement strategies. The literature also includes studies examining the teaching of targeted language skills by implementing the mand-model procedure on an exclusive basis (Mobeyed, Çollins, Stramgis, Schuster, & Hemmeter, 2000; Rogers-Warren, & Warren, 1980; Toğram, 2004).

The mand-model procedure is an easy method as it involves the creation of opportunities that will prompt the child into engaging in interaction through the activities that interest him/her and while allowing the adult to gain full control of the teaching opportunities. Similarly, in his study, Yeh (1994) reported that the mothers preferred the mand-model procedure over other milieu teaching techniques as it allowed them to gain control over the interaction opportunities and easily predict the responses of the child. Additionally, the mand-model procedure is implemented in a natural environment by using natural reinforcers. The fact that no additional reinforcer is required to be determined for the children prior to the training

and that the trainings are held with mother in their home environment is believed to have facilitated the implementation of the procedure easily and contributed to the maintenance of such skills over time. The effectiveness of the parent training program implemented in this study is attributed to the fact that the focus is shifted on teaching only one of the milieu teaching techniques and that the parent training program included both theoretical and practical stages and that the training sessions were held with each mother in their own home environment.

Secondly, the effectiveness of the parent training program is attributed to the inclusion of theoretical and practical stages in the said program. The parent training program consisted of both the theoretical and practical stages, where the theoretical stage involved providing information regarding the mand-model procedure and the language development characteristics observed in both normally developed children and the children with ASD and included the natural teaching methods intended for the children with ASD. The information provided in the theoretical part of the program is believed to have enabled mothers to gain knowledge regarding the developmental characteristics of their children, to get to know their children better, to compare their children's language development and see their retardation/delay in terms of language development. During the implementation stage, the mothers were shown videos about the implementation of the mand-model procedure and environmental arrangements in the full interaction between the mother and child. It is believed that watching instructional videos, preparation of sample play interactions by mothers and the enactment of such sample play interactions by the researcher and mother all contributed to the mothers' learning and implementation of the said procedure in a correct manner. It is believed that letting mothers watch the videos covering the implementation of the steps of the mand-model procedure helped them set an example in their interaction with their children. Moreover, a test training session was prepared for the mother which they enacted with the participation of the researcher. This way, they had the opportunity to control their attitudes and identify their shortcomings prior to the play interactions to be held with their children. In a similar fashion, in their studies conducted with mothers, Ünlü (2012) included video

tutorials and role activities, while Toğram (2004) included lecturing, video tutorials and role ing activities. Such efforts are believed to have been instrumental in converting theoretical information into applied skills.

Thirdly, the effectiveness of the parent training program is attributed to the fact that the training sessions were held with each mother in their own home environment. The fact that mothers participated in this study voluntarily and the study was conducted in their home environment helped mothers to feel more comfortable about themselves. Moreover, it was observed that mothers were quite enthusiastic about participating in the study and willing to apply the knowledge they learned throughout the study. The fact that the mothers were enthusiastic about the study, and that the study was conducted with the activities that children seemed to like in a familiar environment, and that the designated communication partners of children were none other than their mothers are all believed to have been influential in enabling children to learn and maintain the targeted language skills.

The stable data suggesting that the steps of the mand-model procedure are met was achieved in a total of 8 sessions with Nur, in a total of 9 sessions with Gül and in a total of 5 sessions with Oya. Despite there being no statistically significant difference in terms of Nur and Gül's learning curves, Oya learned the steps of the procedure faster than the other two mothers. The fact that Oya made the same environmental arrangements in every session and learned the targeted language skills of the children faster than other children is believed to have been influential in enabling her to learn the steps of the mand-model procedure faster and more correctly than the others. Such findings appear to be consistent with the findings of Alpert and Kaiser's study (1992) in terms of the child's level of language development being influential on the number of sessions held, but differ in terms of higher education level of mothers being influential in enabling them to learn the steps of the procedure. Of the mothers participated in the study, Nur and Gül are high school graduates, whereas Oya is a primary school graduate. On the strength of this finding, it can be suggested that the parents' education levels is not the primary determining factor in enabling them to learn and implement the milieu teaching procedures. This fact is also supported by the findings of

McCathren's study (2009) where a mother with slight developmental retardation was taught the pre-langauge milieu teaching techniques.

Another important factor that rendered this parent training program effective is attributed to the fact that the targeted language skills were identified in accordance with the developmental characteristics of each child. Suitability of the targeted language skills with the developmental levels of children is believed to have influenced their learning curves positively. This also bears similarities with the findings of the study conducted by Kaiser et al. (1996). Moreover, the children participating in the study also learned new words in addition to the targeted language skills. The mothers reported that their children started asking more questions and extended their sentences while pronouncing the names of the objects on their own and showed more willingness to with their mothers. Moreover, the mothers reported that they now felt more comfortable than before while engaging in an activity with their children. This leads us to believe that, in addition to the effectiveness of mand-model procedure in enabling mothers to teach the target words, the program also affected the quality of interaction between the mother and child in a positive way.

As a conclusion, the findings of this study suggest that the parent training program designed with a view to teaching the mand-model procedure, a milieu teaching technique, is effective and consequently the mand-model procedure implemented by the mothers is effective in teaching new words to the children with ASD and enabling them to maintain such acquired words over time. Like all studies, however, this study also presents certain limitations. The first limitation in this regard is the failure to generalize the steps of the mand-model procedure to the teaching of other skills to the children by the mothers. Another limitation is the limited number of targeted skills chosen for the children. Based on these findings and limitations, it is recommended that future studies implement the mand-model procedure by preparing training programs designed to teach such skills to the special education instructors and other parent members (such as fathers, siblings). Moreover, it is recommended that future studies be conducted with the aim of extending the parent training program, which is designed for teaching the milieu teaching technique of mand-model procedure, to a larger number of mothers by way of small group trainings or distance education methods.

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Empowering Mothers of Children with Special Needs in Early Childhood Inclusion

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Abstract

Parents of young children with special needs in inclusion are among key stakeholders influencing the effectiveness of inclusion. There is significant evidence to suggest, however, that difficulties they encounter throughout inclusion hinder parents to perform their role as partners. This suggests that their role in their child's education would be highly limited unless their needs resulting from the challenges they face are not met. Meeting their needs would empower them in fulfilling their roles and increase the success of inclusion. This study examines the development and evaluation of a needs-based training program designed for the mothers of children with special needs enrolled in inclusive preschools in North Cyprus. Aiming to support them in overcoming the difficulties they experience throughout inclusion by empowering them as partners, present study employs a mixed methods approach with a dominant qualitative strand. Findings of the study suggest the program have positive contributions to participating mothers and their children.

Keywords: Early childhood inclusion, mothers' needs, training program, collaboration, empowerment.

Introduction

Early childhood inclusion has been the subject of interest for decades by early intervention research (Odom et al., 2004). There is now a widespread consensus that early childhood inclusion is a highly effective form of early intervention (Guralnick, 2016) as it leads to positive developmental outcomes on children with special needs (Guralnick & Bruder, 2016; Odom et al., 2004; Sucuoglu et al., 2016). To have positive results in the progress of individualized goals and developmental gains, early childhood inclusion must embody the elements of successful and high quality early childhood inclusion (Frauzer-Cross, Traub, Hutter-Pishgahi, & Shelton, 2004). Accepting and welcoming attitudes of school staff, positive relationship between parents and teachers, special education services provided within the inclusive settings, communication among service providers, modifications and accommodations made for the child and parent involvement are among the key elements contributing to the successful early childhood inclusion (the Division for Early Childhood-DEC & the National Association for the Education of Young Children-NAEYC, 2009; Frauzer-Cross et al., 2004).

One of the most stressed elements of successful early childhood inclusion is parent participation (Buysse, Skinner, & Grant, 2001; Frauzer-Cross et al., 2004; DEC & NAEYC, 2009) since parents play important roles to ensure the success of the inclusion (Ingber, Al-Yagon & Dromi, 2010). Successful early childhood inclusive practices treat parents as partners and collaborate with them (Beneke & Cheatham, 2016; Kim et al., 2012; Todd, Beamer & Goodreau, 2014) to enhance the benefits children gain (Purcell, Horn, & Palmer, 2007). Besides, when parents and teachers have a positive relationship, children with special needs benefit more from inclusion increasing social and

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adaptive skills and decreasing problem be-haviors (Blair, Lee, Cho, & Dunlop, 2011; Kim et al., 2012).

Despite the great emphasis on partner-ship role of parents, parents often encoun-ter difficulties about playing an active role in their child's education and remain ineffec-tive as a result of school-based limitations about parent participation along with inef-fective collaboration with teachers (Buysse, Wesley, & Keyes, 1998; Epley, Summers, & Turnbull, 2011; Grace, Llewellyn, Wedg-wood, Fenech, & McConnell, 2008; Soodak & Erwin, 2000). In some studies, parents state that communication between parents and teachers is limited and parent participa-tion is not encouraged in early childhood in-clusion programs (Epley et al., 2011; Grace et al., 2008; Lim, 1996). This clearly sug-gests empowering parents to overcome the difficulties encountered while performing their roles as partners is of utmost im-portance for the child to benefit most from early childhood inclusion (Purcell et al., 2007; Guralnick, 2011).

As stated by DEC and NAEYC (2009, p. 2) "family members, practitioners, spe-cialists, and administrators should have ac-cess to ongoing professional development and support to acquire the knowledge, skills, and dispositions required to imple-ment effective inclusive practices", it is clear that parents need to be empowered with knowledge and skills to participate in their child's education (Frauzer-Cross et al., 2004; Turnbull & Turnbull 1997). One of the most effective ways of empowerment is through parent-teacher collaboration (Turn-bull & Turnbull, 1997). Collaboration be-tween parents and early childhood profes-sionals needs to be promoted to ensure the success of inclusion (DEC & NAEYC, 2009). Collaboration is a mutual process in which each party is required to contribute; schools must encourage parent participa-tion and collaboration (Dempsey & Dunst, 2004; Dunst, Trivette, & Snyder, 2000; Mur-ray, Handyside, Straka, & Arton-Titus, 2013; Wakimizu, Fujioka, & Yoneyama, 2010). Unfortunately, in an educational con-text where inclusion is not guaranteed by the law and standards of high quality inclu-sion are not yet settled, schools cannot ac-complish their role in collaborating with par-ents. In such a context, empowering par-ents to fulfill their roles as partners can be a way to promote parent participation and col-laboration (Frauzer-Cross et al., 2004; Turnbull & Turnbull, 1997).

Programs based on family needs are the most effective early intervention pro-grams (Bruder, 2000). When parents are provided with the knowledge and skills they can act their roles as partners in their child's education (Frauzer-Cross et al., 2004; Turnbull & Turnbull, 1997) through parent training programs. There are numerous studies focusing on the needs of parents who have young children with special needs (Bailey et al., 1999; Bertule & Vetra, 2014; Hu, Turnbull, Summers, & Wang, 2015) or on difficulties parents experience in early childhood inclusion (Epley et al., 2011; Kil-loran, Tymon, & Frempong, 2007; Tuş & Çifci-Tekinarslan, 2013). However, studies about parents' needs in early childhood in-clusion are scarce to the best of our knowledge. Furthermore, there are plenty of studies investigating the programs which target parents of young children with special needs (Diken, Cavkaytar, Batu, Bozkurt, & Kurtyılmaz, 2010; Mahoney & Perales, 2005; Phaneuf & McIntyre, 2011; Seeley et al., 2009). Nevertheless, there is a lacuna in the programs designed for parents of young children with the aim of supporting them in overcoming the challenges they experience throughout inclusion.

Inclusion in North Cyprus

In North Cyprus, legislative regulations about individuals with special needs are very limited and inclusion of children with special needs is not endorsed legislatively (National Education Law of Turkish Repub-lic of North Cyprus, 1986; Turkish Republic of North Cyprus Ministry of National Educa-tion, 2006). Moreover, criteria for successful inclusion are not defined in North Cyprus. However, in this study the concept of 'inclu-sive preschools' is used to represent pre-schools children with and without special needs attend in which teachers attempt to meet the needs of all children with/without appropriate and required supports. It is common for children with special needs to be placed in special education schools and only a few regular schools accept children with special needs. Hence, the number of children with special needs attending inclu-sive schools is very limited (Polili, 2012). Besides, only some of these regular schools provide special education services within resource rooms. Mostly, children with special needs receive special education services from private institutions. As the government provides limited financial aid and parents need to buy related services

from private institutions, they underline the need of financial support (Seven, 2016). Despite all the aforementioned problems, there is a law draft supporting inclusive education which has been planned to be discussed in the parliament (Turkish Republic of North Cyprus Assembly of the Republic, 2016). There is a growing body of research about inclusion especially focusing on the difficulties experienced by parents, teachers and children with disabilities in North Cyprus (Abbasoğlu, 2016; Tabaklar, 2017). This research shows that schools' physical conditions are generally inappropriate (Abbasoğlu, 2016; Karabulut, 2013), teachers' knowledge regarding children with special needs is limited (Abbasoğlu, 2016; Tabaklar, 2017) and classroom teachers are not provided with supports within inclusive schools (Abbasoğlu, 2016; Karabulut, 2013). Furthermore, parents of children with special needs are not provided with training or support services (Abbasoğlu, 2016; Dogan & Bengisoy, 2017), parent participation is not encouraged (Dogan & Bengisoy, 2017) and effective cooperation between teachers and parents has not yet been developed within inclusive schools (Abbasoğlu, 2016; Dogan & Bengisoy, 2017; Karabulut, 2013). On the basis of the fact that parents are important partners in their child's education (Buysse et al., 2001; Frauzer-Cross et al., 2004), it is essential to identify their needs resulting from the difficulties they experience throughout inclusion and then to support them in becoming effective partners to increase the child's gains from inclusive practices (Purcell et al., 2007). Consequently, this article explores the needs of the mothers of children with special needs enrolled in preschools in North Cyprus where there are no legislations specific to inclusion. It also evaluates a needs-based training program with the aim to support the mothers in overcoming the difficulties they experience throughout inclusion and fulfilling their roles as partners. Since previous studies frequently emphasized that the effects of parent training programs should be evaluated by investigating not only parents' opinions but also parent and child behaviors (Roberts & Pickering, 2010; Reid & Webster-Stratton, 2001), we collected quantitative data in addition to the qualitative data to examine whether the program leads to changes in mothers' and children's behaviors. In parallel with our aim we have four research questions:

1. What are the needs of the mothers of children with special needs enrolled in regular preschools in North Cyprus?
2. To what extent do participating mothers think Mother Training Program (MTP) meet mothers' needs?
3. To what extent is there a change in mothers' and children's behaviors after MTP?
4. What do participating mothers think about MTP after a six-month-follow up period?

Method

This article explores a needs-based Mother Training Program (hereafter MTP) developed and evaluated as part of the doctoral dissertation of the first author as a case, a methodology well suited to program development and evaluation (Fitzpatrick, Sanders, & Worthen, 2011). A mixed methods approach with an embedded design (Figure 1) where quantitative and qualitative research strands were combined within the traditional qualitative case study design (Creswell & Plano-Clark, 2011) was used primarily because it integrates the strengths of both quantitative and qualitative research and by doing so, it "provides the best understanding" of a research problem (Creswell, 2009, p. 18). As shown in Figure 1, in the first phase, qualitative strand of the study, participating mothers' needs were addressed through semi-structured interviews carried out with mothers. Data collected were used to develop MTP based on the identified needs of participating mothers in the second phase. Following the content generation of MTP, corrections were made based on the pilot testing. Because the intention was to evaluate the impact of MTP on participating mothers through the use of one group pre-test post-test design, prior to the implementation of MTP quantitative data were collected on mother and child behaviors through the use of structured observations. This stage was followed by the implementation of MTP. In the fourth phase MTP was evaluated using both qualitative and quantitative data; qualitative evaluation was based on semi-structured interviews and observation notes and quantitative on one group pre-test post-test with the aim of exploring the changes in mothers' and children's behaviors tested before and after the implementation of the program. Six months after the implementation of MTP, qualitative

data were collected to elicit mothers' views about the program through semi-structured interviews.

Participants

Identical sampling design with the same sample for both the qualitative and quantitative phases (Collins, Onwuegbuzie, & Jiao 2007; Mertkan, 2015) was employed in the study. Six participants, three young children with special needs and their mothers, selected through criterion sampling, a purposive sampling strategy (Patton, 2002), participated in the study. Participating mothers were required to meet the criterion of having a young child with special needs enrolled in an inclusive preschool.

At the time of the study, all participating children were enrolled in inclusive preschools and provided with special education support within private institutions. Mothers reported that participating children how limited language, play, and self-care skills while having difficulties to follow instructions and also demonstrating problem behaviors. The first mother (M1) is a 36 year old housewife and a high school graduate. She has a five-year old daughter (C1) with developmental delay enrolled in a public preschool, provided with two-hour special education support from a public institution, and

speech-language therapy from a private institution. The second mother (M2) is a 42 year old academician with a PhD degree. She has a six-year old daughter (C2) with autism, enrolled in a private preschool and supported by a 14 hours special education per week composed of special education support, speech-language and occupational therapy. The third mother (M3) is a 40-year old housewife and a primary school graduate. She has a five-year old son (C3) with autism, enrolled in a private preschool, who has a two-hour special education support and speech-language therapy provided by private special education institutions. All participating children moved to kindergarten in the new academic term.

Research ethics were rigidly followed throughout the study. Permission to carry out the study was granted by the Ministry of Education, a requirement in North Cyprus and by the principals of the preschools where the children were enrolled at the time of the study. Participating mothers were given detailed information about the study and signed an informed consent form to participate in the study. Interviews were audiotaped with the permission of the participants and codes were used to maintain anonymity. M1, for example, was used for one of the participating mothers while C1 was used for her child.

Figure 1.

Research design
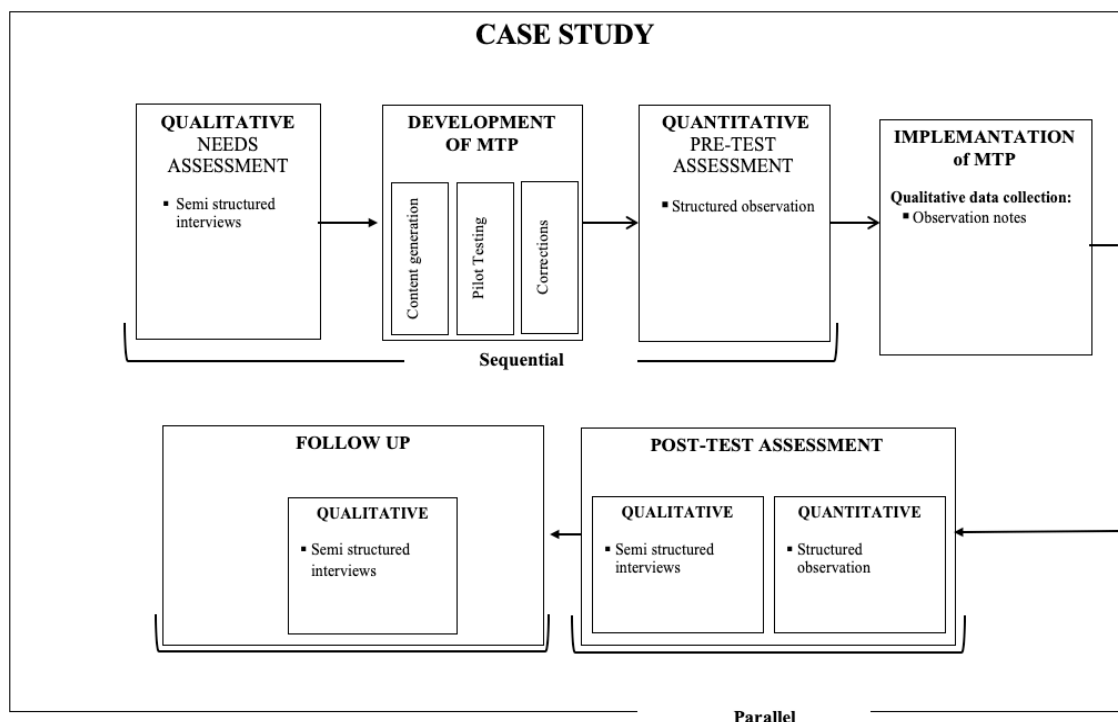
Data Collection

MTP is a needs-based program developed with the aim of supporting mothers in overcoming challenges they experience in early childhood inclusion. To develop and evaluate MTP, qualitative and quantitative data were used together throughout the study. Data were collected from mothers and children to "triangulate different data sources of information by examining evidence from the sources" (Creswell, 2009, p. 191). In this paper, we present data collection phases separately for qualitative and quantitative strands.

Qualitative data

Qualitative data were gathered through semi-structured interviews and observation notes. Semi-structured interviews were carried out with participating mothers with the aim of identifying the difficulties and needs of mothers at the beginning of the study, evaluating the mother program following the implementation of the program, and examining the program in the follow up phase of the study. Semi-structured interviews were preferred because they allow for in-depth understanding of the phenomenon (Patton, 2002).

Interview questions were generated based on the literature, first author's experience as a teacher worked in inclusive early childhood institutions and expert opinions of three scholars from the field of special education. Interviews carried out to elicit mothers' needs focused on the difficulties mothers face and their needs regarding early childhood inclusion, with questions on the characteristics of the child, the preschool he/she attends, child's enrolment process to the preschool, mothers' views on the preschool along with their expectations from the preschool, difficulties they experience regarding the preschool, supports/services the school provides to the child, and problems related to child's learning and problem behaviors. During the interviews conducted to evaluate the program, mothers were asked eight questions to elicit their views about the extend MTP met their needs, the contribution program made to them and their children, the successful and less successful aspects of the program, their suggestions regarding the improvement of the program and what they recommend for the mothers who will participate to the program later on. Follow up interviews, covering

seven questions, were made with mothers six months after the implementation of MTP. Questions were asked to draw out mothers' views about the program. The focus was on whether they still utilize what they learned from the program, improvements or problems they observed in their child during the follow up period, the aspects of MTP they benefited most, children's performance in their new schools and parent-teacher relationships in the new school.

At the beginning of each interview mothers read and signed the consent form. Interviews with M1 and M3 were carried out in an empty and silent room in the preschools or private special education institutions their children attend. Only M2 was interviewed in her office. Length of the interviews identifying mothers' needs was 331.38 minutes ($\bar{x}$ = 37 min, range = 26-48 min). Post training interviews' were 286.72 minutes ($\bar{x}$ = 48 min, range = 27-67 min) and follow up interviews were 163-minute long ($\bar{x}$ = 27 min, range = 17-49 min). All interviews were transcribed verbatim.

A variety of procedures was used to ensure validity (member checking, prolonged engagement, triangulation, rich and thick description) and reliability (checking transcriptions, inter-coder agreement) of the qualitative findings (Creswell, 2013). Member checking, a way to determine the accuracy and credibility of qualitative data (Creswell, 2013) was carried out by conducting additional interviews to seek confirmation from participants with regard to what was covered during initial interviews. Furthermore, prolonged engagement was built with the participants in order to establish a relationship between the researcher and the participants based on trust (Lincoln & Guba, 1985). Data triangulation, a means through which validity is enhanced (Creswell 2009; Gibson & Brown, 2009), was achieved through interviewing mothers in addition to mother-child observations. Rich and thick description of the participants, context and findings contributing to transferability of data (Creswell, 2013) was included. In addition to validity, reliability strategies were also used. Audio records and transcripts were checked and compared to ensure complete match (Gibbs, 2007) while inter-coder agreement (Miles & Huberman, 1994) was calculated to ensure reliability. Inter-coder agreement was found as 95%, a percentage meeting the criteria

of at least 80% agreement (Miles & Huberman, 1994).

To evaluate the implementation of the program and participating mothers' reactions, observation notes, were used. Two observers, undergraduate students of the Department of Special Education at the Eastern Mediterranean University, participated in the training sessions after mothers' verbal consent. Observation notes included demographic information (place, date, and duration of the observation), descriptive notes (physical setting, portraits of the participants, dialogs, particular events and activities) and reflective notes (observer's feelings, ideas and impressions) (Creswell, 2009). Observers conveyed their notes, 79 pages, and 1960 lines, to the first author shortly after the session.

Quantitative Data

One group pre-test post-test design was employed to explore the effect of MTP on mothers' and children's behaviors through mother-child behavior observations, which served as another means of data triangulation. To see the effect of MTP in mothers' and children's behavior, mother-child interactions were videotaped at home environment during pre and post assessment during which twenty minute of unstructured free play between mother-child dyads were videotaped. First three minutes and last two minutes were not included in the analysis; remaining 15 minutes of each recording was analyzed. Mothers were asked to play with their child with toys and materials available at home.

An observation system designed by Laura Lee McIntyre to address positive and negative parent-child behaviors during parent-child interactions (Brzuszkiewicz & McIntyre, 2013) was used. This coding system includes positive and negative parenting behaviors and child behaviors. It consists of seven categories of negative parent behaviors: a) inappropriate play behavior, b) intrusion on child's independence, c) positive consequences for child's inappropriate behaviors, d) inappropriate commands, e) lack of follow through, f) criticism, and g) aggression, and two categories of positive parent behaviors: a) descriptive commenting, and b) appropriate praise (Brzuszkiewicz & McIntyre, 2013). In addition to mother behaviors, we also examined child outcomes. Data about child behaviors were also collected through the same mother-child play interaction videos. The coding system involves negative child behaviors; a) aggression, b) disruption and c) negative verbalizations/vocalization and d) positive child behaviors (a) positive verbalizations/vocalization, b) complying with parent commands) (Brzuszkiewicz & McIntyre, 2013). This coding system employs partial-interval coding for parent and child inappropriate behaviors and descriptive comments of parents and event coding for appropriate child-directed praise (Brzuszkiewicz & McIntyre, 2013). Event coding was used for all behavior categories.

Previous studies using the aforementioned coding system show that it is a reliable tool to code the behaviors accurately. Inter-observer agreement for negative parent behaviors was found to range between 99.2%-100 % (McIntyre, 2008a; Phaneuf & McIntyre, 2007; 2011), and between 96.7% -99.4% for positive parent behaviors (McIntyre, 2008a; Phaneuf & McIntyre, 2011). Inter-observer agreement was found to be 97.9% for children's combined inappropriate behavior (McIntyre, 2008b; Phaneuf & McIntyre, 2011).

In this study, we used Turkish version of the parent-child interaction observation system, translated from English to Turkish by the first author once the permission has been granted by Laura Lee McIntyre; translated version was compared to the original version by the second author who also made the relevant corrections. Afterwards, both authors reached an agreement on the Turkish version to be used in the present study. Due to the absence of an independent observer and time limitations to train an independent observer, intra-observer agreement reliability was used. It was calculated by dividing the number of agreements by the total number of agreements and disagreements and multiplying the result by 100% (Tekin-İftar, 2012). To ensure accuracy, the first author analyzed a previously recorded videotape of a mother–child dyad's interaction who did not participate in the MTP and achieved 85% agreement. Then she coded 33% of the observations (4 out of 12 mother-child interaction videos) of participating mothers and children to calculate intra-observer agreement. Average percentage agreement for negative parenting behaviors was 99.5% (range = 92%–100%). Average percentage agreement for positive parenting behaviors was 96% (range = 86%–100%) for praise and 100%

for descriptive commenting. Average percentage agreement for inappropriate child behaviors was 97% (range = 92%–100%). Agreement for the child positive verbalizations/vocalization was 98% (range = 91%–98%), and 99% (range = %88–%100) was for complying with parent commands.

Treatment integrity. Treatment integrity was examined through session checklists, audio records and observation notes. To ensure MTP was implemented as planned, checklists for each session indicating the steps (flow and content of the session) to be completed were used. Besides, audio records of training sessions and observation notes were utilized to check compatibility with the checklists. The comparison of the checklist and qualitative data showed that all steps were implemented as planned.

Data Analysis
Qualitative data analysis
Data gathered from verbatim transcriptions of interviews were analyzed inductively. Using predetermined codes was avoided and codes were generated from the data (Teddlie & Tashakkori, 2009). Each interview carried out with mothers during different phases of the study (see Figure 1) was analyzed separately. We used hand coding of transcripts by assigning color code schemes for each theme (Creswell, 2009) and examined data for commonalities and differences to categorize different codes into different themes (Gibson & Brown, 2009). The authors and a scholar with experience in special education and qualitative research, but not involved in the study, analyzed the data separately and came to a 95% inter-coder agreement.

Quantitative data analysis
Mother and child behaviors during mother-child interactions were coded through event recording (Alberto & Troutman, 2009). Change in mother-child behaviors from pre to post assessment were examined by converting frequencies obtained from event recording into percentages. This calculation was made for all mother and child behavior categories included in parent and child interaction observation system (Brzuszkiewicz & McIntyre, 2013). In addition to addressing the change for each behavior category, a composite for positive and negative parent behaviors and a composite for negative child behaviors were created to show the percentage of change.

Procedure
After receiving permission from the ministry, we made contact with the principals of the inclusive preschools located in Nicosia and Famagusta. We delivered fliers, via preschool principles, giving information about the study to the mothers of children with special needs enrolled in their preschools at the time of the study. Only three mothers accepted to participate in the study. First author talked face to face with mothers and their children's preschool teachers to provide them with more detailed information on the study. They signed an informed consent form to participate in the study. The study started with the identification of mothers' needs.

The Mother Training Program
Upon identification of participating mothers' information needs (emerged needs will be given in the findings), objectives of the Mother Training Program (MTP) were determined. To meet information needs of participating mothers, eight modules, each having a distinct set of content areas generated from the literature having a distinct set of content areas generated from the literature were developed and a program book made up of these modules was prepared. Module one focuses on developmental delay in comparison to typical development. Building up on the first module, second module focuses on inclusion as a form of intervention in detail examining the meaning and benefits of inclusion, characteristics of effective inclusion and the various roles stakeholders need to play. Module three concentrates on the benefits of parent-teacher collaboration, building positive relationships with teachers, importance of parent participation and parent-teacher conferences and effective communication strategies. Modules 4, 5, and 6 focus on strategies mothers could use to teach their child new behaviors and play skills, and support their child's language-speech skills (e.g. giving commands, reinforcing positive behavior, using prompts, using incidental teaching strategies) while module 7 focuses on strategies that could be used to cope with problem behaviors (e.g. proactive and reactive strategies). The last module intends to strengthen mothers to advocate

the rights of their child and includes legislations available in North Cyprus with emphasis on equal opportunity and zero reject policy in the National Education Law of Turkish Republic of North Cyprus (1986). The policy states "Every citizen has the right to education *without any discrimination"* (author's emphasis) and "Individuals of the society are provided with *equal opportunity* in education" to seek for free appropriate education in regular schools and the means through which the rights of their child could be advocated such as participating in non-governmental organizations. In its entirety, module 3 aims to develop mothers' partnership role while modules 1, 4, 5, 6 and 7 seek to support their teaching role and modules 2 and 8 to support their advocacy role. Each chapter was delivered as a printed material to participating mothers prior to each module consisting of three parts – a vignette, main content, an assignment to be completed by mothers after each module. Modules were delivered using a range of strategies including asking questions, role playing and discussion. Each session started with summarizing the previous session and with checking the assignment followed by the discussion of the vignette, and content presentation by the first author. It ended with assigning a new task.

MTP was piloted prior to its implementation. A mother having a child with intellectual disability participated in the pilot and was asked to comment on the content, clarity, and duration of the program. The program was conducted by the first author as two-hour-sessions lasting for three weeks in a classroom at the Faculty of Education, Eastern Mediterranean University. When interviewed, the participant stated her satisfaction with the program. She found the program useful, particularly in terms of the contribution it made to her transformation:

> There were things changed about me. I learned how to talk with the teacher...I learned what she thinks…I told her what I think...I will keep meeting with her...I want the teacher to deal more with my son in the classroom...I demand the teacher to show more effort to keep the child in the classroom.

The only suggestion made by the mother who participated in the pilot was to simplify some of the vocabulary used in the program. Following the pilot, suggested modification was made and the program took its final form.

Following piloting and corrections on the program, MTP was conducted on participating mothers as weekly two-hour-sessions lasting for eight weeks in a classroom at the Faculty of Art and Sciences, Eastern Mediterranean University. Sessions were implemented by the first author who had a bachelor degree of early childhood education and a master's degree of special education with a nine-year-teaching experience in inclusive kindergartens at the time of the study. To evaluate the program, qualitative and quantitative data were collected from participating mothers and children. Moreover, follow up interviews with participating mothers were conducted to examine mothers' views on MTP.

Results

In parallel with our research questions, we first present participating mothers' opinions about their own and their children's needs using data from interviews. This is followed by the section where we present participant mothers' views on MTP based on interview data, with a particular emphasis on the extent to which participating mothers' needs were met. Third, we report quantitative findings about the changes in mother and child behaviors after MTP to triangulate data gathered from the interviews. Lastly, we state the findings of follow up interviews to represent what mothers think about MTP after a six-month-period.

Mothers' Needs
The needs emerged in the qualitative data can be categorized under two themes: a) *the need for information* and b) *needs requiring more comprehensive interventions* (financial needs, needs of social support, future concerns, and problems experienced with other family members, etc.). Because the needs emerged under the second theme require more comprehensive interventions which can be provided by the government or different organizations and hence are not within the scope of this study, only findings about the *need for information* are discussed here.

The need for information
Qualitative findings obtained from interviews with mothers revealed that they experience three distinct sets of difficulties and have needs arising from these difficulties.

These are: a) difficulties and needs related to parenting skills (e.g. teaching new skills to their child and coping with their problem behaviors), b) difficulties and needs about establishing effective collaboration / relationship with teachers, and c) difficulties related to information on their rights and on the requirements and benefits of inclusion.

a) Difficulties and needs related to parenting skills: We found that mothers' lack of knowledge on child development and effects of developmental delay on the child leads to a number of problems such as setting unrealistic expectations about their child in general and thinking that their child will heal over time in particular. Focusing on weaknesses rather than strengths of the child is another indication of such problems. Assuming her son will show problem behavior in the class, M3 conveys her worries to her child's teacher leading the teacher to lower her expectations about the child. Limited knowledge about child development also causes mothers to encounter problems when teaching their child and playing with him/her. Data clearly suggest such encounters might lead to problem behaviors in children:

> *She is stubborn. Although I devoted myself to her why does she not do what I tell her? Why does she not finish a coloring activity?... She cannot put on her clothes. To be honest it is because of us. She always asks our help for toileting... She is spoilt when with me. As she is spoiled she does not want to follow my instructions. When I tell her to color a picture within lines she cannot...I am her mother, I am not a teacher, she is bored of me." (M1)*

It was common for participating mothers to express that their child has limited skills causing difficulties during play. Though the desire to learn *how to play with their child* was often evident, there is also ample evidence to suggest the child is unwilling to continue the play when mothers fail to follow the interests and requests of the child:

> *Suppose that we study the numbers, she can distinguish the numbers until three, she distinguishes number four, but she is confused when it comes to number five and after that she shows escape behaviors or starts to caress me..... But we try to continue the play till the end, in other words after she completes the task she can leave the table or the play. (M2)*

According to participating mothers, children's difficulties in speech-language skills cause many problems at school examples of which include requesting things, communicating with their classmates and participating in classroom activities. Consequently, it was common for participating mothers to underscore their desire to support speech-language skills of their child, an area our findings reveal they know little about. In addition, that mothers experience difficulties in coping with problem behaviors of the child, which negatively influence the child's learning, adaptation to classroom, and peer relations also emerged as an important finding. Mothers' desire to decrease problem behaviors of their child is visible: "*He screams and he is stubborn. When we do not allow him to do what he wants, he throws himself on the floor. I want to stop him being stubborn. These two behaviors make me exhausted." (M3)*

b) Difficulties and needs about establishing effective collaboration / relationship with teachers: Stressing their will to collaborate with preschool teachers, mothers report that their relationship with teachers is weak. For example, M1 offers a striking case where her daughter's teacher failed to ask for the basic information such as the support the child was receiving from other services at the time of the study while M1 did not even consider to share this information with the teacher. Information sharing between participating mothers and teachers was problematic at best with participating mothers underlining they do not have sufficient information about what their child does at school as M3 states: "*I do not know what activities are being done at the school, if my son participates in the activities.... Neither teachers mentioned nor I asked.... I just go, pick him up and leave the school. 'How was he?' 'He was good'. That's all."*

Data show that instead of talking with preschool teachers about their child's education, mothers seek support from other related parties they expect to communicate with preschool teachers on their behalf. This is evident in the way M2 communicates with her child's special education (SE) teacher when she learns her child plays alone in the classroom with the hope that the SE teacher talks with her child's preschool teacher about the her disappointment: "*We did not directly talk with the teacher so she does not feel offended; we mentioned about this issue to special education teacher...We do not want to hurt the [preschool teacher] about these issues, not*

to be misunderstood as if she is not doing her job well." M3 who wants her son to attend the preschool for longer hours and conveys this to the preschool's director without negotiating with the teacher offers another example of in-direct communication between mothers and preschool teachers.

c) Difficulties and needs related to information on mothers' rights and on the requirements and benefits of inclusion: Participating mothers acknowledge needs related to their rights and on the requirements and benefits of inclusion. They stress, rather strikingly, informing preschools about their child's special needs generally results in rejection. In such cases, they are ineffective in advocating their child to be accepted by a preschool, as inclusion is not guaranteed by law and the enrollment of children with special needs depends on the school management's' decision. M3 explains her need for being empowered through information about her rights: *"I want to learn my rights. We used to talk with my husband about our rights. Before this preschool accepted him, other schools rejected him, we got hurt."* Assuming their child is a burden on the teacher and the school, mothers were observed to believe acceptance of their child to the school is a "favor" they should be grateful for rather than a right they have:

> *My daughter was not able to speak. As there was nothing to do, I used to go to the school like a sacrificial lamb[1].... I was really worried at the beginning because she had no toilet training. What if she pulls one's hair...I used to feel as if we were a problem. (M1)*

Data suggest lack of knowledge about the requirements of inclusion and how it should be implemented leads mothers to reduce their expectations from the inclusion. Talking about her child, M2 underlines her only expectation from the preschool was socialization of her child: *"Our greatest expectation was her socialization.... We wanted her to socialize and to do things together with her classmates.... We do not have any academic expectations yet.* Parallel with this, mothers do not expect preschool teachers to make any accommodations and adaptations for their child in the classroom either. Following the unrealistic expectations they set for the child and thinking their child will face diffi-

culties when participating in classroom activities, they convey their worries about the child's performance to teachers.

Mothers Opinions Regarding the Mother Training Program (MTP)

Qualitative analysis shows that MTP has positive contributions both for participating mothers and for their children. Data clearly suggest MTP provides mothers with the knowledge they need to act as partners in their child's education. Participating in MTP supports mothers to improve their relationships and collaboration with teachers, increase their expectations from the inclusion and enhance their parenting skills. Accordingly, children show improvements in self-care, language-speech and play skills with positive behaviors. Even though not aiming to do so, MTP helped the mothers also in terms of emotional relief.

a) Contribution to parent-teacher relationship and collaboration: One major contribution of MTP is on parent-teacher collaboration. Due to the increase in their knowledge and skills, mothers improved their relationships with preschool teachers. For example, M1 express vividly that the attitude of her child's preschool teacher towards her changed positively after witnessing the improvement of her due to MTP: *"We have better communication now with the teacher. Actually, we could not create a rapport last year. My daughter was not able to speak, I was going to the school like sacrificial lamb...However, now I am not like that anymore...I am more knowing...I am talking more different than before with the teacher."* Owing to their improved communication skills such as active listening, using "I" language, focusing on problem-solving, mothers demonstrated more collaborative behaviors. M2 reports: *"...on the basis of what we have learned from the program when we convey demands regarding what we do or do not want, we propose how we can collaboratively accomplish our goals. As a consequence [of collaborative tone], teacher is more positive, and undertake more responsibilities."*

Interestingly M1 and M3 state that parent-teacher conference they requested and participated in as part of MTP was their first and the longest detailed meeting with the preschool teachers of their children. It was

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[1] A metaphor used in Muslim societies to refer to the one who does not know what awaits her/him or agrees to things he/she believes will happen to her/him.

the first step for both parties to understand each other and to determine shared learning goals for the children even though teachers do not seem to be ready and willing to accept mothers as partners. Accordingly, M3's attempts for collaboration were not responded by the preschool teacher. She state her suggestion to participate in the classroom activities was rejected by her child's teacher. Besides, when M3 asked for a second parent-teacher conference, the teacher did not accept her request with the excuse of time constrains:

> We had only one conference. After the conference when I asked for the second she did not accept. She should have been arranging her program. But we could not achieve [the second conference]. In following days our conversation took place for a short time when I picked my child up from the school.

According to our data, in addition to partnership role, mothers also acted as a mediator between service providers by furnishing communication and collaboration among professionals such as SE teachers and speech and language therapists. Mothers state they wanted the preschool teacher and SE teacher of their child to collaborate and conveyed this demand to both professionals. While M2's demand was accepted, M1's and M3's demands were rejected by both professionals as teachers were not willing to collaborate with each other showing time constraints as an excuse.

b) Contribution to expectations from the inclusion: As a consequence of their increasing knowledge about the responsibilities of parents and of schools for inclusion to be effective, mothers expected preschool teachers to make adaptations and modifications in the classroom in order to encourage children's participation:

> I want my child to participate in the classroom activities...I want him to do the same activities done in the classroom. I want him not to stand apart (from the class). I do not want to be said he is special, other children can achieve but your child cannot...I do not want discrimination in the classroom. (M3)

Participating mothers also underline they advocate their child more effectively due to their increasing knowledge about their rights: "*What kind of an inclusion? We experienced it as well...At first they accepted us for a two-hour inclusion. If we did not discuss it in the program (MTP), we would say 'OK'. But now, we think half-day inclusion would be more helpful for her." (M2).* In addition, apart from M1 and M3, M2 underlines she will ask for a shadow teacher from the kindergarten her child would start.

c) Contribution to parenting skills: Because the program informed mothers about the characteristics of their child and developmental delay, it supported participating mothers increase their awareness about their child's developmental characteristics. With the help of their enhanced understanding, mothers stated that they created more realistic expectations about what their child can achieve:

> I learned that children need to be taught appropriate to their intelligence level, age level. They should not be forced to do (something). We need to consider children's areas of interest; we need to teach them based on their interests. I realized that when the time comes children develop step by step, I observed it in my daughter...I try to teach her what she can do... (M1)

Besides, as a consequence of developing a better understanding of child development and learning, the mothers discovered the effect of their own behaviors on the child's behavior. Mothers' improvement in teaching skills (giving instructions, reinforcing positive behaviors, using cues/clues) and facilitating speech-language and play skills led positive gains on participating children in a variety of areas ranging from self-care, speech-language and play skills. M2 explained aforementioned improvements by saying, *"We have a better communication [now]. She [the child] is able to communicate with us when playing [as] we learned how to support her, for example we offer alternatives or praise her during play…We minimized 'No's...It was very useful for me to give clear instruction instead of saying 'sit properly' explaining what sitting properly means. We (I and my husband) used to give only verbal praise...It was useful to learn different types of praises."* Moreover, M1 stated *"She now uses more words when speaking…She is now more involved in other children's play. She prefers to play with her friends rather than playing with me",* and M3 *"Since I have been using the strategies I learned from the program I observed changes in my son...He learned to put on his shoes. He used to put on his*

clothes with my help. I was not expecting these [improvements]."

Another positive contribution of MTP is mothers' increased coping skills with problem behaviors of their child. As can be seen in M3's statements, as mothers' coping skills improved, children's problem behaviors decreased: *"We learnt preventing problem behaviors. We learnt how to cope with problem behaviors and we used preventive strategies at home. Hence, my child's life quality is increased… He was a problem child. He used to disobey. I did what I learned from the program on my child and I succeed. I succeed by giving praises and rewards. I ignore his problem behaviors and he gives up. I offer choices as much as possible."* However, M2 expressed that MTP was not helpful to cope with her child's stereotyped problem behaviors. The difficulty M2 experienced seems closely related with the intensity of the problem behaviors her child displays.

Lastly, without being the target aim, MTP appears to have supported participating mothers have emotional relief resulting from mothers' exchange of their experiences as underlined by M2: *"Training sessions were like psychological therapy as* everybody shared her own experience...something more different emerged when everyone has sympathy for what they have been passed through."

Changes Regarding Mother and Child Behaviors

As we used a mixed methods approach to support qualitative data with quantitative data to evaluate MTP, we will present the findings of quantitative strand of the study in this part of the findings.

Mother behaviors.

According to quantitative evidence, the percentage of positive parenting strategies of participant mothers increased from pre to post assessment (see Figure 2). M1, M2 and M3's use of positive parenting strategies increased 367%, 171% and 43% respectively ($\bar{x}$ = 194%). The greatest increase was observed in descriptive comments, 1300% for M1, 283% for M2 and 167% for M3 ($\bar{x}$ = 583%). Appropriate praise followed the increase in descriptive comments. Increase in appropriate praise was 250%, 67% and 14% respectively ($\bar{x}$ = 110%).
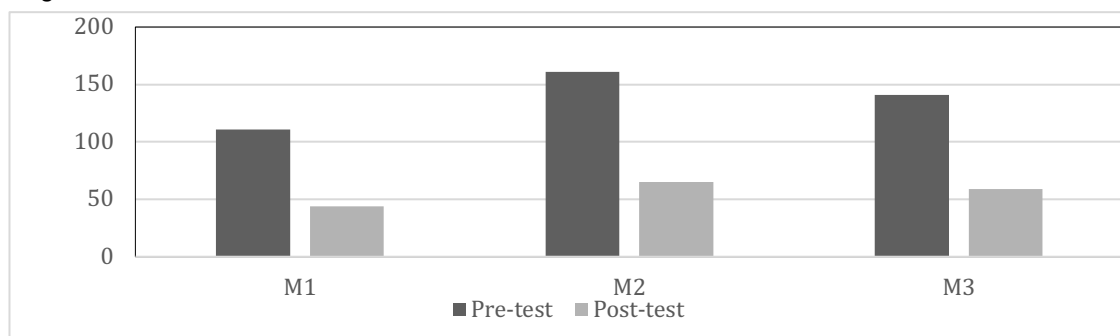
Figure 2

Positive mother behaviors

Figure 3.

Negative mother behaviors

The percentage of participating mothers' negative parenting strategies reduced from pre to post assessment (see Figure 3). The use of negative parenting strategies decreased 60% for M1 and M2, 58% for M3 ($\overline{x}$ = 59%). The greatest change was observed in inappropriate play behavior and inappropriate commands. The change in inappropriate play behavior is 72%, 60% and 72% ($\overline{x}$ = 68%), and 50%, 70% and 73% ($\overline{x}$ = 64%) for the change in inappropriate commands for M1, M2 and M3 respectively.

Child behaviors

As data from semi-structured interviews suggest, positive behaviors of participating children increased while problem behaviors decreased from pre to post assessment (see Figures 4 and 5). The increase in positive verbalizations/vocalizations was 37% for C1 and 26% for C2 and C3 ($\overline{x}$ = 30%). Complying with parent commands increased as 7%, 34% and 30% respectively for C1, C2 and C3 ($\overline{x}$ = 24%). The percentage of change in children's negative behavior (see Figure 6) was observed as 48%, 85% and 69% respectively for C1, C2 and C3 ($\overline{x}$ = 67%). The negative child behavior where the greatest change took place was negative verbalizations/vocalization; 49%, 83% and 69% for C1, C2 and C3 ($\overline{x}$ = 67%).

Figure 4.

Positive verbalizations/vocalizations
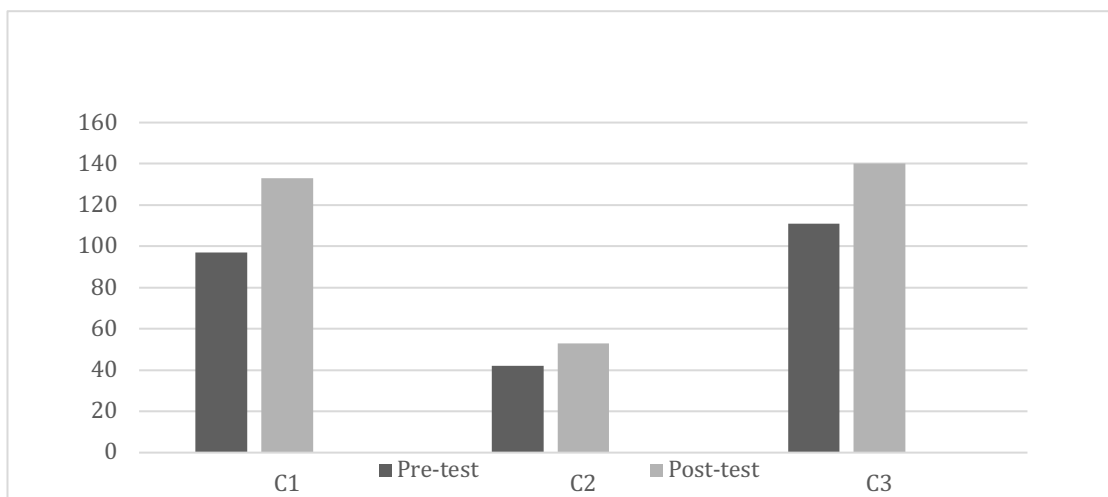

Figure 5.
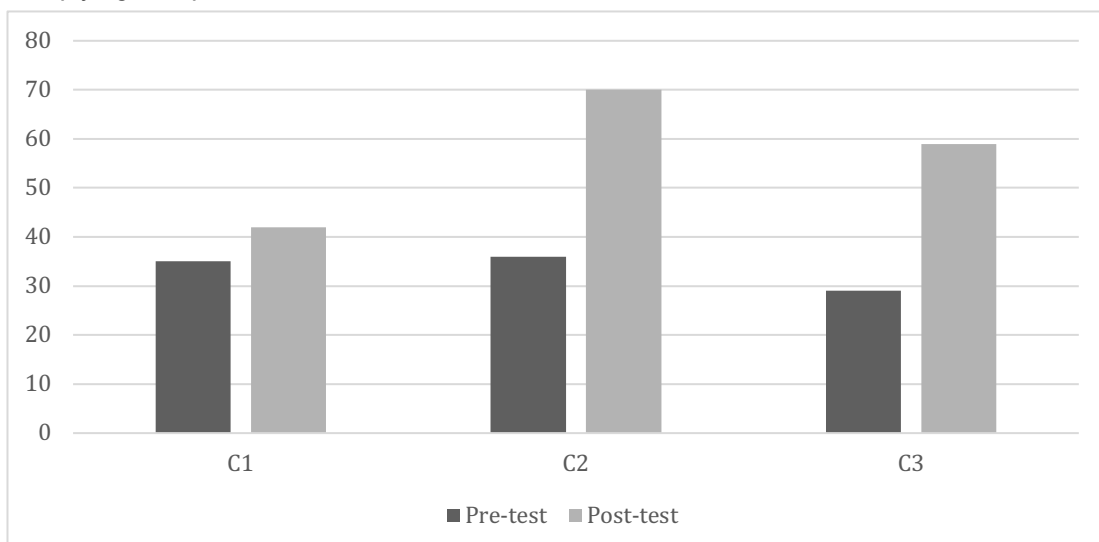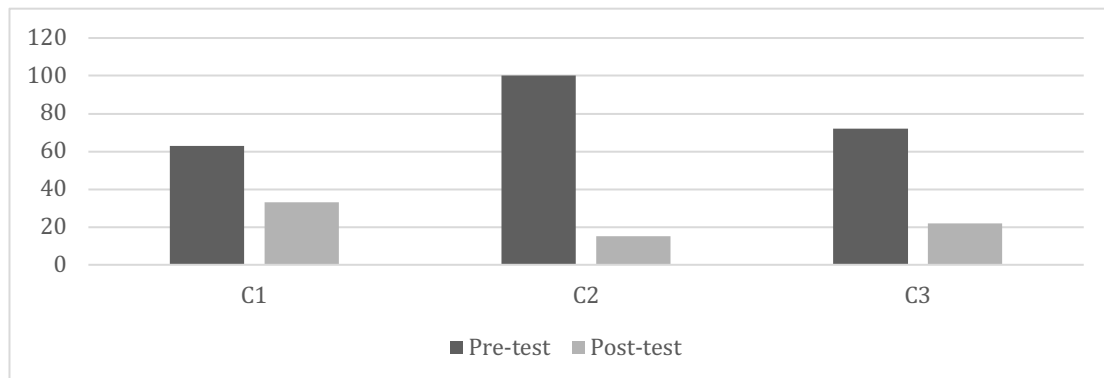
Complying with parent commands

Figure 6.
Negative child behaviors

Mothers opinions about MTP after a six-month-follow up period

After a six-months-follow up period, participating mothers were interviewed to explore whether MTP's positive contributions continue. Findings clearly show that positive contributions of MTP on participating mothers and children have continued.

On-going positive contributions to the mothers.

Mothers emphasized that they continued to display a range of parenting roles ranging from teaching, partnership, and mediation, to advocacy during the follow period. This seems closely related with the content of MTP supporting aforementioned roles of the mothers. They reported that they teach what they learnt from the MTP to a variety of people including their children, family members, friends, and teachers. An example is M3 who informed the mother of her son's classmate about how to communicate with the teacher based on her learnings from the MTP. In this case, her son's classmate's mother had conveyed her complaints about another child disturbing her child to the principal instead of discussing the issue with the classroom teacher. Witnessing the case, M3 participated in the on-going conversation and suggested the mother build positive communication with the teacher and not to express her negative thoughts about the teacher in front of her child: "*I told her 'Do you know what the biggest mistake you did here is? You spoke beside the child. First, you should wait until the teacher ends her speech, and then begin to speak."* Mothers also maintained their partnership roles in schools their children at-

tend. Data clearly show participating mothers demonstrated more attempts to share information with the teacher. For instance, they informed the kindergarten's director and the kindergarten teacher about the characteristics of their child as is apparent in M2's statement: *"We talked with our teacher...She was very concerned at the beginning because my child does not speak, and she had no experience with such children. We had a conference. We informed her about the child and what she needs to do".* Knowing more about parents' roles in inclusion, it is apparent that they increased the frequency of communication with the teachers. In addition to face to face conversation, they also communicated through other means such as communication notebook or telephone.

In addition to their teaching and partnership roles, mothers were observed to act as mediators between the professionals by planning the services to be offered to their child. They helped the kindergarten teacher and the SE teacher of their child communicate with each other as is manifest in M1's words: *"We talked with the special education teacher...We wanted her to speak to the kindergarten teacher...We gave kindergarten teacher's mobile number to her."* Moreover, knowing more about their rights and stakeholders' responsibilities in inclusion, participating mothers started to advocate their child's benefit. One of the most prominent signs of their advocacy efforts is evident when they took action to enroll their child to kindergartens where resource room teacher is available. Furthermore, they demanded for whole-day-inclusion and a shadow teacher from the kindergarten.

On-going positive contributions to the children.

Mothers reported that their child showed improvement in terms of self-care, play, speech-language skills and positive behaviors during the six-months-follow up period following the MTP. Some examples from their statements indicating on-going positive contributions of the MTP on aforementioned skills and behaviors of their children are as follows: "She improved her language skills…She goes to the toilet by herself. She started to put on her clothes.... She was playing with her friends when I watched during the playtime. It made me so happy" (M1); *"She does not insist on [demonstrating] inappropriate behaviors. As she sees our determination she withdraws… She comes to agree when we say 'You should not do this'. She knows she should not do, and we do stand firm…Her play skills improved. She waits for her turn when we play. We use praises [to promote her]. We can play for longer duration." (M2); "He gets dressed and undressed completely by himself. He is doing alone everything he needs. He does not need me anymore, he accomplished by himself…He improved his speech...He follows my commands. He is able to express himself...These are good developments"* (M3).

Social Validity

A means through which social validity is assessed is giving the participants the opportunity to express their views about the program (Tekin-İftar, 2012). As is evident in previous sections, it was common for mothers to stress their satisfaction with the program throughout the interviews. Additionally, they expressed their opinions about the content and language of the program book and the researcher's attitudes as can be traced in M1's words: *"The program was appropriate for me…The way you described the content was intelligible…It was very helpful, I gained many benefits. I am glad to be part of it [program].* Moreover, participating mothers recommended other parents to participate in the program, another indication of their satisfaction with the MTP: *"Other mothers should definitely participate in the program and should not miss anything about it. And they need to keep the program book to utilize and implement it for their whole life. It should not be left on the shelf. I still take a look [on to the program book]. It is in my office, I read it."* (M2).

Lastly, they also articulated their satisfaction by expressing their wish to participate in the program again: *"Where were you last year? I wish I could have received this training long time ago"* (M1); *"I enjoyed participating in the program…It was very useful. I would participate if it was conducted again"* (M2); *"I wish it took longer. Two months were not enough."* (M3).

Discussion

This study aimed to explore the development and evaluation of Mother Training Program (MTP), a needs-based program developed for the mothers of children with special needs in inclusive preschools of North Cyprus with the aim to support them in overcoming the difficulties they experience throughout inclusion and fulfilling their roles as partners. We used a mixed methods approach with an embedded design where quantitative and qualitative strands of research were integrated within a case study (see Figure 1) (Creswell & Plano-Clark, 2011). This design provided us with the opportunity to develop MTP, and to examine evidence from different sources by triangulating qualitative and quantitative data in evaluating the program (Creswell, 2009).

Our data revealed information needs of mothers in North Cyprus show significant similarities to those of parents having young children with special needs identified by previous research such as information about child development and developmental delay, teaching the child or coping with problem behaviors (Bailey et al., 1999; Hu et al., 2015; Leung, Lau, Chan, Lau, & Chui, 2010; Sarıca et al., 2015; Sucuoğlu, 1995; Ueda et al., 2013). Moreover, as in our case parents of children with special needs enrolled in inclusive classrooms frequently stress their need to improve their parenting skills (e.g. teaching their child, coping with problem behaviors) (Kargın, Acarlar, & Sucuoğlu, 2003; Leung et al., 2010) and to establish parent-teacher collaboration (Lim, 1996; Whitaker, 2007). Data also demonstrate inclusion related needs of mothers specific to the constraints present within our context, needs related to information on their rights and on the requirements and benefits of inclusion, which are closely related to the lack of the definition and standards of inclusion in North Cyprus.

There is a wide range of training programs available for parents of children with special needs with different aims. Some programs aim to reduce negative parent behaviours (McIntyre, 2008a; Phaneuf & McIntyre, 2011) or to enable parents to cope with the child's problem behaviours (Diken et al., 2010; Sumi et al., 2012). Others focus on supporting parents to facilitate the development of the developmentally delayed child (Sturmey & Crisp, 1986; Sucuoğlu et al., 2001) and to increase parent-child interaction (Karaaslan, Diken, & Mahoney 2011; Mahoney & Perales, 2005). Target of some programs is increasing positive child outcomes (Blair et al., 2011) or promoting inclusive practices in early childhood inclusion by enhancing family-school collaboration (Cummings, Sills-Busio, Barker, & Dobbins, 2015). Quantitative data we gathered from mother-child behaviors support qualitative data revealing MTP's positive contributions to the development of participating mothers and children. Similar with the research on the benefits of parent training programs, MTP supported participating mothers to improve their teaching (Sturmey & Crisp, 1986; Sucuoğlu et al., 2001) and behavior management skills (McIntyre, 2008a; Sumi et al., 2012) and to increase their positive behaviors when interacting with their child (Blair et al., 2011; Sarıca et al., 2015). As manifested by previous research (McIntyre, 2008a; Mahoney & Perales, 2005) change in parent behaviors led to improvements in children's behavior in our study. It is noteworthy as MTP is one of the few parent programs available in Turkish literature examining effects of a parent training program on children along with parental outcomes (Karaaslan et al., 2011; Sarıca et al., 2015). In addition to its aforementioned contributions, MTP also empowered mothers by enhancing their partnership and advocacy role, too. Consequently, the Mother Training Program, to the best of our knowledge, is the first parent training program developed with a focus on meeting mothers' needs arising from the difficulties they experience in the inclusion of their children in early childhood settings. Our data show that MTP reached this aim. Even though MTP does not aim to support preschool teachers, the teachers who collaborated with the researchers during the selection of the participants and who know the purpose of the study emphasized the importance of parent participation and collaboration between preschool teachers and SE teachers. However, according to participating mothers' statements, teachers expect mothers to initiate the collaboration and do not create opportunities for effective partnership.

Qualitative data show that, roles and responsibilities of teachers and parents in terms of collaboration are not clear. Consequently, neither parents nor teachers know their responsibilities in creating effective relationship with each other. Literature emphasizes schools are responsible for promoting collaboration with parents, supporting their partnership roles, and for creating opportunities for parent participation (Dempsey & Dunst, 2004; Dunst et al., 2000; Murray et al., 2013; Wakimizu et al., 2010). Therefore, preschool teachers need to be supported to build effective collaboration with parents of children with special needs (Hurley & Horn, 2010; Turnbull & Turnbull, 1997). In the present study, mothers frequently experienced ineffective parent-teacher relationships which we believe stem from the absence of laws, regulations or standards specific to inclusion in Northern Cyprus. In addition, although some schools accept children with special needs, specific guidelines for effective inclusion do not exist and preschool teachers are not fully prepared for working with children of different ability levels. As a result, mothers, children, and teachers are experiencing difficulties in the inclusion and in some cases teachers and parents support each other. Nevertheless, it appeared that this was not the case in our study. Since system change comes with more comprehensive interventions including policy change, instead of creating an educational system creating opportunities for partnership, this study shows that as parents are supported with the knowledge, they can be partners to become change agents (Trainor, 2010) even if the present system does not change.

MTP supported mothers to overcome the difficulties they experience throughout inclusion and to fulfill their roles as partners by enhancing their understanding of child development and learning, problem behaviors, their rights, the requirements and benefits of inclusion, and of the ways to cooperate with teachers, and by doing so empowering them. Empowerment, defined as "increasing control over one's life, taking action to get what one wants" (Turnbull & Turnbull, 1997, p. 37) is a trait observed in participating mothers after the implementation of MTP. With the help of MTP, mothers

were equipped with the knowledge and skills required to play an active role; they took more actions and responsibilities on the behalf of their children (Bruder, 2000) in inclusive preschools their children attend rather than being passive receivers of the decisions taken for them (Hu et al., 2015; Trainor, 2010).

Empowerment takes place when there is collaboration between parents and schools and it is only possible when parents of children with special needs and preschools are linked to each other through collaboration (Turnbull & Turnbull, 1997). As is evident in the disability right movement where parents of children with special needs stood up to the system and acted as an impetus for inclusion (Erwin & Soodak, 1995; Lipton, 1994), parents have the capacity to transform the system. When empowered, they can act as advocates and partners to ensure the success of inclusion (Frauzer et al., 2004) despite the difficulties experienced in the wider system. Data from this study support the claim that family factors (motivation, knowledge/skills) and contextual factors (opportunities for partnership, obligations for reliable alliances) are two key components of empowerment (Turnbull & Turnbull, 1997). Mothers need a context where they utilize their motivation and knowledge/skills to take action on the behalf of their child, which can be created through parent-teacher collaboration (Turnbull & Turnbull, 1997); parent-teacher collaboration is critical for increasing positive outcomes for the child (Herman, Borden, Reinke, & Webster-Stratton, 2011; Webster-Stratton, Reid, & Hammond, 2001). Evidence from this study clearly show that MTP empowered participating mothers by equipping them with the knowledge and skills they need to take action. However, there is also evidence to suggest when the educational context does not respond to the parents' attempts, mothers' motivation and knowledge/skills become ineffective (Noel, 2008; Turnbull & Turnbull, 1997). According to participating mothers, preschool teachers expected them to display collaboration efforts while not reciprocating these efforts themselves. Why preschool teachers do not reciprocate mothers' efforts to collaborate is an area that would undoubtedly benefit from further research.

Inclusion practices require a system in which all stakeholders are mutually empowered to reach desired outcomes (Turnbull,

Turbiville, & Turnbull, 2009). Mutual empowerment of parents and teachers would, of no doubt, be for the child's best interest in early childhood inclusion as was emphasized by participating teachers *"mother program would be more efficient if you made us involve in the program or we (teachers) could participated in these kind of training program."* Hence, to promote the success of inclusion, more comprehensive interventions aiming to empower both parents and teachers need to be implemented.

Interviews conducted with mothers indicate mothers and children benefitted from the program. However, these contributions are based on mothers' subjective perceptions which might have been influenced by social desirability. Hence, we examined mother and child behaviors during mother-child interactions to see the effect of MTP by triangulating the data gathered from interviews. Quantitative data showed that MTP increased mothers' positive behaviors, and decreased negative parent behaviors while it supported children to show more positive behaviors and less negative behaviors. Its impact on child outcomes in addition to parent outcomes, a means through which the effectiveness of parent training programs is evaluated (Herman et al., 2011; McIntyre, 2008a; Sarıca, Akcamete, & Gurgur, 2015; Webster-Stratton et al., 2001), clearly shows MTP has led to desirable mother and child outcomes.

Limitations

The present study makes important contributions to scholars working in the field of inclusion and practitioners willing to support mothers and their children in early childhood inclusion. However, as with any study, it also has several limitations. The first limitation is the number of participants. MTP was carried out only with three mothers with the single pretest-posttest design because of the difficulties in finding mothers who were willing to participate in the study. That preschool teachers were not included in the program because the focus on mothers was another limitation. Apart from these, MTP only focused on information needs of participating mothers as other needs emerged required more comprehensive interventions. Moreover, video vignettes were not made due to time and financial constraints; participating mothers were provided with only a program book. Besides, we examined intra-

observer agreement in mother-child behavior observations because we could not get other researchers involved in the study due to lack of funding. We suggest further studies examine inter-observer agreement, gather follow up data from mother-child behavior observations in addition to semi-structured interviews and develop video vignettes in addition to program book.

Conclusion and Implications

This study shows supporting mothers of young children with special needs in early childhood inclusion by empowering them as partners in their child's education has positive contributions to mothers and children. However, inclusion, to be successful, requires a system change in North Cyprus in which schools must take more responsibility to ensure inclusion is effective. This system change is only possible when inclusion is endorsed by the law, when standards of successful inclusion are defined and teachers are supported in terms of knowledge and skills to improve inclusive practices in North Cyprus. Parallel with the limitations of the study, the present study has several implications for practice and further research. First of all, participating children's teachers who collaborated with us in referring participant mothers frequently underlined they need to participate in programs about children with special needs and inclusive practices. Future studies should focus on collective empowerment in which parents and teachers "increase their capacity and mastery over the resources needed to achieve mutually desired outcomes" (Turnbull et al., 2009, p. 641) to increase positive child outcomes (Herman et al., 2011; Reid & Webster-Stratton, 2001; Webster-Stratton et al., 2001). Moreover, supporting parents in all areas they need to improve is essential for the services to be effective. Furthermore, implementing the program on a greater number of participants including mothers, fathers or caregivers of young children with special needs with the use of quasi experimental and experimental designs would also be useful.

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