KURAM VE UYGULAMADA EĞİTİM BİLİMLERİ EDUCATIONAL SCIENCES: THEORY & PRACTICE

**Received:** February 1, 2016
**Revision received:** April 22, 2016
**Accepted:** June 5, 2016
**OnlineFirst:** August 10, 2016


**www.estp.com.tr**
**DOI** 10.12738/estp.2016.5.0126 • October 2016 • 16(5) • 1649–1670

***Research Article***

# Comparison of Social Engagement of Children Having Disabilities with Their Mothers and Fathers

Ozcan Karaaslan[1]
*Marmara University*

**Abstract**

This study examined differences between mothers' and fathers' style of interaction and engagement with their preschool-aged children with Down syndrome (DS) and autism. Data was collected from a sample of 27 mother–child and 27 father–child dyads in which all the children were diagnosed with DS or autism. Participants were both parents and their children from the same family, which allowed comparisons between the mother and father of the same child. Both parents with their children were video recorded during free-play time with a set of developmentally appropriate toys. All video recordings were analyzed with the Turkish versions of the Maternal Behavior Rating Scale and Child Behavior Rating Scale. Findings revealed that Turkish mothers of children with DS and autism are more responsive than fathers. Additionally, fathers of children with DS scored higher on responsiveness and affect as well as attention and initiation but scored lower on achievement/directive. Both mothers and fathers interact better with children with DS than children with autism in terms of responsiveness associated with the child's social engagement. Results also indicated that, regardless of whether the child had DS or autism, both the mother's and father's level of responsiveness was associated with the child's engagement.

**Keywords**

Autism • Down syndrome • Children's social engagement • Interaction of mother–child and father–child

1 **Correspondence to:** Ozcan Karaaslan (PhD), Department of Special Education, Atatürk Faculty of Education, Marmara University, Kadıköy, İstanbul 34722 Turkey. Email: ozcanka@gmail.com

**Citation:** Karaaslan, O. (2016). Comparison of social engagement of children having disabilities with their mothers and fathers. *Educational Sciences: Theory & Practice, 16,* 1649–1670.

Parents play a key role in their children's remarkable development during the early years by supporting them in achieving their developmental potential (Heath, 2005). For years there has been interest in whether the manner in which parents interact with children with disabilities is associated with variability in their rate of cognitive and communication development. According to some researchers (e.g., Heath, 2005, p. 88; Kelly & Barnard, 2000; Spiker, Boyce, & Boyce, 2002), there is a significant relationship between parent–child interaction and the child's later social and cognitive development. Parent and child also play an important role by mutually shaping their interactions that may promote the social-emotional, physical, and cognitive development of infants and toddlers (Wilson & Durbin, 2013). Furthermore, parent–child interactions, which are mostly formed by culture, are the basic process for the development of motives and abilities in the child (Trommsdorff & Kornadt, 2002, p. 289). Consistent with this interpretation, it has been concluded that, because limited genetic or biological conditions jeopardize the abilities of learning and development in children with disabilities, the impact of parent–child interaction in the early years is more crucial for these children than for typically developing children (Landry, Smith, & Swank, 2006, as cited in Perales Mahoney, 2009).

Over thirty years, many studies have appeared in the United States and Western countries aimed at understanding how parents and other caregivers interact with their children without or with developmental disabilities, including Down syndrome (DS) and autism (Mahoney & Nam, 2011, as cited in Diken & Mahoney, 2013). Some of these research studies, which focused on mother–child versus father–child interaction (e.g., Chiarello, Huntington, & Bundy, 2006; Girolametto & Tannock, 1994; Kochanska & Aksan, 2004; Mendonça, Cossette, Strayer, & Gravel, 2011; Power, 1985; Wilson & Durbin, 2013), indicated that mothers play a more dominant role in promoting and supporting their children's development than do fathers. Similar findings reported by Wilson and Durbin (2013) revealed that mothers were more responsive to their child as well as more involved in social and emotional interaction with them, whereas fathers displayed more control and discipline in relation to their child's behavior. As shown in the work of Girolametto and Tannock (1994), although both mothers and fathers demonstrated similarities in terms of organizing turn-taking control and of response referents and responses to their child's participation, fathers differed from mothers by using more response control and topic control than did mothers. Similarly, Power (1985) suggested that mothers were more responsive to their infant's cues indicating interest and attention than were fathers.

Research on parent–child interaction has reported two main findings. The first finding is that mothers of children with disabilities tend to be more directive and less responsive to their children than are mothers of children without disabilities (e.g., Ceber-Bakkaloglu & Sucuoglu, 2000; Hanzlik & Stevenson, 1986; Kim &Mahoney,

2004; Mahoney & Robenalt, 1986). Additionally, measures of maternal directiveness for mothers of children with disabilities are also associated with the severity of their children's developmental problem, as indicated either by their level of development (i.e., Intelligence Quotient [IQ] or Developmental Quotient [DQ]) or the severity of their disability (i.e., DS versus autism) (Yoder &Warren, 2004). Consistent with the literature, Kim and Mahoney (2004) found that mothers of children with disabilities displayed less responsiveness and higher directive behaviors than did mothers of typically developing children. Studies with Turkish mothers of children with disabilities, including autism and DS, also revealed that, similar to mothers from Western countries, Turkish mothers were more directive and less responsive (Diken, 2009; Diken & Mahoney, 2013; Karaaslan, Diken, & Mahoney, 2011). Additionally, children's engagement was not linked with their mothers' directiveness, but only with their responsiveness. In response to the directive behavior of mothers, children were less actively involved in interaction with their mothers (Diken & Mahoney, 2013; Karaaslan & Mahoney, 2015). Similar results reported by Ceyhun, Ozdemir, Toret, and Ozkubat (2015) revealed that parents of children with autism exhibited less emotionally expressive and responsive behaviors than did mothers of typically developing children. Parallel findings reported in another study conducted by Ceber-Bakkaloglu and Sucuoglu (2000) demonstrated that interaction between mothers and their babies with typical development and that between mothers and their babies with intellectual disabilities differed significantly in terms of initiating, responding, maintaining interaction, and engaging in interactional play. Mothers of babies with intellectual disabilities exhibit less responsive and interested behaviors, whereas they display more initiation of interaction, positive effect, and insistent behaviors than do the mothers of normal children. Similarly, children with intellectual disabilities display less initiation, response, and maintenance of interaction in reaction to their mothers' behaviors.

According to Kelly and Barnard (2000, p. 260), each parent and child reflects their inherently unique characteristics that influence the parent–child relationship during their interactions. The second main finding of the previous research is that children's rates of cognitive and communication development are positively correlated with their mother's level of responsiveness (e.g., Karaaslan & Mahoney, 2013, 2015; Kim & Mahoney, 2005; Mahoney, 2009; Mahoney & Nam, 2011; Mahoney & Perales, 2003; Mahoney, Perales, Wiggers, & Herman, 2006; Yoder & Warren, 1998; Warren, Brady, Sterling, Fleming, & Marquis, 2010).These findings have not only been reported in descriptive research studies but also shown in experimental intervention studies (e.g., Karaaslan & Mahoney, 2013; Kim & Mahoney, 2005; Yoder &Warren, 1998) as well. This effect has been reported with children who have diverse etiologies such as DS or autism as well as with children who have different IQs or DQs. The effects of parental responsiveness have been reported with diverse populations of parents, including

parents from Turkey, North America, and continental Europe. For example, some studies conducted with diverse populations of parents in different countries (e.g., Karaaslan, Diken, & Mahoney, 2013; Karaaslan & Mahoney, 2013; Kim & Mahoney, 2004; 2005; Mahoney & Perales, 2005; Mahoney et al., 2006; Tamis-LeMonda, Bornstein, & Baumwell, 2001; Warren & Brady, 2007; Warren et al., 2010) indicated that highly responsive parenting styles might help improve a child's developmental domains, such as language, cognitive, and social–emotional functioning. A number of researchers (e.g., Karaaslan, Diken, & Mahoney, 2011; Kim & Mahoney, 2004, 2005; Mahoney & Perales, 2005) proposed also that increases in children's pivotal behavior and parental responsiveness were associated with children's developmental improvements.

There are a number of issues associated with the research findings outlined above, two of which are addressed by the present research study. The first issue concerns how responsiveness promotes children's development. Some studies (Mahoney & Perales, 2003, 2005) have illustrated that highly responsive parents do not emphasize direct teaching with their children, which many consider to be a necessary strategy for promoting children's developmental learning. Yet a series of studies (e.g., Karaaslan & Mahoney, 2015; Kim & Mahoney, 2005; Mahoney & Perales, 2003, 2005; Mahoney et al., 2006) conducted by Mahoney and colleagues suggests that the effects of responsiveness on children's development are mediated by the impact of responsiveness on children's social interactive engagement. That is, parental responsiveness has been shown to be highly effective at promoting children's spontaneous social interactive engagement. The association between responsiveness and children's development, whether measured concurrently as in descriptive studies or over time as in intervention studies, is mediated by children's social interactive engagement. Like maternal responsiveness, parental responsiveness also promotes those social interactive behaviors, which are the processes that underlie children's developmental learning (Kochanska & Aksan, 2004).

The second issue associated with these research findings (e.g., Girolametto & Tannock, 1994) is that fathers differ from mothers in the manner in which they interact with their children. As indicated previously, research on parent–child interaction has focused on mothers' interactions with their children based upon the premise that mothers are the most important influence, likely due to the greater amount of time they spend with their young children as compared to fathers. For example, some researchers (e.g., Darling-Fisher & Tiedje, 1990; Kreuder, 1996; Wilson & Durbin, 2013; Young & Roopnarine, 1994) argued that mothers of children with disabilities and mothers of children without disabilities are still the primary caregivers and nurturers because they spend more time with their children, while fathers of children with disabilities and fathers of nondisabled children still take a secondary role in

parenting by assuming less responsibility and spending less time with their children. However, in all societies fathers are currently playing a much more active role in their children's lives than they did in previous generations. This raises the possibility that parental influence is dependent on both parents interacting with their children.

Based on the previous research summarized above, there has not been any study that focused on Turkish mother–child and father–child interaction simultaneously. Specifically, the purpose of the present study (1) to compare how children with DS or autism interact with their mothers and their fathers; (2) to compare mothers' and fathers' style of interacting with their children; and (3) to determine whether there are differences in the interactive characteristics of mothers and fathers associated with the level of engagement exhibited by children with autism versus those with DS.

## Purpose

In sum, the purpose of the current study was to investigate the differences between Turkish mother–child and father–child interactional behaviors. In order to achieve this aforementioned purpose, the following research hypotheses were tested:

1. There are differences in the way in which mothers and fathers interact with their children.
2. There are differences in the way in which mothers and fathers interact with children with autism versus DS.
3. Children who have DS or autism interact better with mothers than with fathers.
4. There is a significant relationship between mothers' and fathers' style of interaction with their children.
5. There is a significant relationship between children's interactive engagement with their mothers and fathers.
6. The characteristics of mothers' and fathers' interactive style are associated with the level of children's social engagement.

## Method

### Participants

The study consisted of a sample of 27 mother–child and 27 father–child dyads in which all the children had diagnoses of Down syndrome (DS) or autism. These participants were both parents and their child from the same family, which allowed for comparisons between the mother and father of the same child. Participants were

recruited from private special education and rehabilitation centers in the city of İstanbul, Turkey. As indicated in Table 1, the mothers' and fathers' average age was 39.67 years. Twenty-three had a high school degree, 18 a university degree, and 13 had completed elementary school. Therefore, most of the fathers (22.2%) and mothers (20.4%) had completed a high school degree. After the purpose of the study was explained to them, the mothers and fathers signed a letter of consent to participate. Sixty-three children were male and 37 were female. A total of 16 children had autism and 11 had DS. All the children with autism had received medical diagnoses by psychiatrists that were based upon the *DSM-IV* criteria. Of the children with autism, 48.2% were male, while of the children with DS, 14.8% were male. The age of both the children with autism and those with DS ranged from 40 to 68 months, with a mean of 56.3 months (*SD* = 9.45).

Table 1
*Demographic Characteristics of Fathers, Mothers, and Their Children (Participant Demographics)*

| **Variables** | Father (N=27) | | Mother (N=27) | | Total (N=54) | | | |
|---|---|---|---|---|---|---|---|---|
| Parent's characteristics | *f* | *%* | *f* | *%* | *f* | *%* | *M* | *SD* |
| Parent's education (years) | | | | | | | **3.85** | **1.14** |
| Elementary school | 6 | 11.1 | 7 | 13.0 | 13 | 24.1 | | |
| High school | 12 | 22.2 | 11 | 20.4 | 23 | 42.6 | | |
| University (graduate) | 9 | 16.7 | 9 | 16.7 | 18 | 33.3 | | |
| Parent's age (years) | | | | | | | **39.67** | **5.53** |
| 26–30 age (years) | 1 | 1.9 | 2 | 3.7 | 3 | 5.6 | | |
| 31–35 age (years) | 5 | 9.3 | 6 | 11.1 | 11 | 20.4 | | |
| 36–40 age (years) | 6 | 11.1 | 10 | 18.5 | 16 | 29.6 | | |
| 41–45 age (years) | 10 | 18.5 | 8 | 14.8 | 18 | 33.3 | | |
| 46–50 age (years) | 5 | 9.3 | 1 | 1.8 | 6 | 11.1 | | |
| | **Children's Disability Type** | | | | | | | |
| | DS (N = 11) | | Autism (N = 16) | | Total (N = 27) | | | |
| Children's characteristics | *f* | *%* | *f* | *%* | *f* | *%* | *M* | *SD* |
| Children's age (months) | | | | | | | **56.3** | **9.45** |
| 37–48 age (months) | 8 | 29.6 | 10 | 37.0 | 18 | 66.6 | | |
| 49–60 age (months) | 6 | 22.2 | 10 | 37.0 | 16 | 59.2 | | |
| 61–72 age (months) | 8 | 29.6 | 12 | 44.4 | 20 | 74.0 | | |
| Gender | | | | | | | | |
| Female % | 7 | 25.9 | 3 | 11.1 | 10 | 37 | | |
| Male % | 4 | 14.8 | 13 | 48.2 | 17 | 63 | | |

DS: Down syndrome

## Instruments

The mothers' and fathers' interactive style with their children and the children's interaction with their parents were assessed by using two observational scales: Maternal Behavior Rating Scale (MBRS) and Child Behavior Rating Scale (CBRS).

**Mother–Child and Father–Child Interactions.** Both the mothers' and the fathers' style of interaction was measured with the MBRS, which was originally developed by Mahoney (2008), and which includes 12 items: responsivity, sensitivity, effectiveness, acceptance, enjoyment, expressiveness, inventiveness, warmth, achievement, praise, directiveness, and pace. The MBRS is a 12-item scale that is rated on a 5-point Likert scale, with "1" reflecting a low incidence of the behavior and "5" indicating a high incidence of the behavior. The Turkish version of the MBRS (TV-MBRS) was initially translated from English to Turkish with 123 mother–child dyads. The validity and reliability of the TV-MBRS that was carried out by O. Diken (2009) indicated that the TV-MBRS has three subfactors. Internal consistency for the three subscales indicated by Cronbach's alpha for the "Responsivity/Sensitivity" subfactor was .87, for the "Expressiveness" subfactor was .86, and for the "Directiveness/Achievement" subfactor was .61. The Kaiser-Meyer-Olin (KMO) measure was .83. The version of the MBRS used in the study conducted by Karaaslan and Mahoney (2013) was retranslated and revalidated by the first author with 56 Turkish mothers of young children with various disabilities. Factor analysis indicated which nearly identical to factors reported for the English version, the MBRS has three factors: Responsiveness (responsivity, sensitivity, effectiveness, inventiveness), Affect (expressiveness, acceptance, enjoyment, warmth, praise), and Achievement/Directiveness (achievement, pace, and directiveness). The MBRS had high internal consistency. For the entire scale, Cronbach's alpha was .73, and the KMO was .80. Internal consistency for the three subscales was also high as indicated by Cronbach's alpha: the "Responsiveness" subfactor was .87, the "Affect" subfactor .86, and the "Achievement/Directiveness" subfactor .72 (Karaaslan & Mahoney, 2013).

**Child Behavior Rating Scale.** Children's interactive engagement with their mother and father was assessed with a Turkish translation of the CBRS from the video-recorded observation of mother–child and father–child play described above. The CBRS, which includes seven global items, was originally developed by Mahoney and Wheeden (1998) to assess the quality of preschool-aged children's engagement. The Turkish version of the CBRS (TV-CBRS) was initially translated from English to Turkish with 123 mother–child dyads by O. Diken (2009). The validity and reliability of the TV-CBRS that was carried out by O. Diken (2009) revealed that the TV-CBRS has two subfactors. Internal consistency for the two subfactors indicated by Cronbach's alpha for the "Initiation" subfactor was .91 and for the "Attention" subfactor was .79. The KMO was .82 (Diken, Topbaş, & Diken, 2009). The version of the CBRS used in the study conducted by Karaaslan and Mahoney (2013) was retranslated and revalidated by the first author with 56 Turkish mother–child dyads in which the children had various disabilities. Factor analysis indicated that, similar to the English version, the CBRS has two factors: Attention (attention, interest, persistence, and cooperation) and Initiation (initiation, joint attention, and affect).

The CBRS had high internal consistency. For the entire scale, Cronbach's alpha was .89, and the KMO was .82. Cronbach's alpha for the "Initiation" subfactor was .89, and for the "Attention" subfactor was .84 (Karaaslan &Mahoney, 2013).

**Data Collection Procedures**

Video recordings of the mother–child and father–child interaction assessment were conducted in a small room equipped with a table, chairs, and developmentally appropriate toys for the child during a center-based visit, which lasted approximately 20 minutes. Each mother–child and father–child dyad play session was video recorded separately while the parent and child played together with a set of toys. Developmentally appropriate toys consisted of stacking rings, crayons, dolls, a xylophone, nesting blocks, plastic animals, kitchen articles, a toy car, a toy airplane, a toy train, and picture books. During play sessions both mothers and fathers were asked to play with their children, as they typically do, using the toys provided. Additionally, parents and children had opportunities to play independently with toys freely accessible when they desired.

**Coding and Reliability of Mother–Child and Father–Child Observation.** Video recordings of the mother–child and father–child interaction were scored by two independent coders separately using a Turkish translation of the MBRS and the CBRS. Both coders had a master's degree in special education and had received approximately 40 hours of training on the MBRS and the CBRS. After they had attained interrater agreement of 80% on each of the two scales, they started to score data. Twenty percent of all observations were coded by a second rater to assess reliability. Reliability was computed based on interrater agreement for all of the observations using the formula ([agreements/(agreement + disagreement)] × 100**)** **(**Tawney & Gast, 1984, as cited in Gursel, Tekin-Iftar, & Bozkurt, 2006).

Exact agreement between the raters calculated for all of the observations for the MBRS *(82.4% for the responsivity subscale, 82.4% for the affect subscale, and 81.2% for the Achievement/Directiveness subscale)* ranged from 81.2% to 85.2%, with an overall agreement of 82.2%; and for the CBRS *(82.4% for the initiation subscale and 82.7% for the attention subscale)* ranged from 81.5% to 83.3%, with an overall agreement of 82.5%. Intraclass correlation (ICC) values were also calculated to determine the interrater reliability of the MBRS and the CBRS. Interrater reliability was determined by Spearman correlation coefficients and Cohen's kappa. The Spearman correlation coefficient for interrater reliability for the total score of the MBRS was .96 ($p < .001$) and for the total score of the CBRS was .95 ($p < .001$), both of which indicate very high interrater reliability. Cohen's kappa was calculated for the MBRS subscales and the CBRS subscales. The kappa values for three subscales of the TV-MBRS varied between 0.62 and 0.71 (Cohen's kappa values of 0.71 for

Responsiveness, 0.62 for Affect, and 0.68 for Achievement/Directiveness), which indicates a moderate to substantial correlation for interrater reliability. The Cohen's kappa values for two subscales of the CBRS were 0.74 for Attention, and 0.64 for Initiation, respectively, which indicates substantial interrater reliability.

## Findings

Findings related to the research hypotheses of this study have been summarized under three titles. Findings related to Hypothesis 1 *(There are differences in the way in which mothers and fathers interact with their children)*, Hypothesis 2 *(There are differences in the way in which mothers and fathers interact with children with autism versus DS)*, and Hypothesis 3 *(Children who have DS or autism interact better with mothers than with fathers)* have been summarized under the title of **"**Mothers' and Fathers' Interactive Style with Children's Social Engagement." Findings associated with Hypothesis 4 *(There is a significant relationship between mothers' and fathers' style of interaction with their children)* and Hypothesis 5 *(There is a significant relationship between children's interactive engagement with their mothers and fathers)* have been outlined under the title of "Relationship between Mothers' and Fathers' Interactive Style with Children's Interactive Engagement." Finally, findings relevant to Hypothesis 6 (*The characteristics of mothers' and fathers' interactive style are associated with the level of children's social engagement)* have been addressed under the title of "Predictors of Children's Engagement."

### Mothers' and Fathers' Interactive Style and Children's Social Engagement

A MANOVA was computed to examine differences associated with mothers versus fathers, and children with DS versus children with autism in terms of its effect on Parent Interactive Style and Child Social Engagement. In other words, a multivariate analysis of variance was conducted to assess whether parent (fathers and mothers) and child's type of disability (DS and autism) have different Parent Interactive Style and Child Social Engagement scores, and whether there was not significant between parent and type of child's disability. Table 2 indicates the results of a multivariate analysis of variance. There was no statistically significant interaction effect between parent and type of child's disability on the combined dependent variables such as Parent Interactive Style ($F(3, 48) = 1.92$, $p > .05$, Wilks' $\lambda = .893$, $\eta^2 = 0.11$)) and Child Social Engagement ($F(2, 49) = 0.41$, $P > .05$, Wilks' $\lambda = .984$, partial $\eta^2 = 0.02$)). Therefore, In Table 2, MANOVA results show that independent variables (the parent and disability) and their interaction (the parent*disability) do not have a statistically significant effect on dependent variables such as Parent Interactive Style (Responsive, Affect and Achievement/Directive) and Child Social Engagement (Attention and Initiation).

In Table 2, follow-up Univariate ANOVAs indicate that there were statistically significant differences in mean *Parent Interactive Style* between parents ($F(3, 48) = 2.69$, $p < .05$, Wilks' $\lambda = .856$, partial $\eta^2 = 0.14$) and disability ($F(3, 48) = 2.92$, $p < .05$, Wilks' $\lambda = .846$, $\eta^2 = 0.15$). It is also indicated that main effects for parent differences were significant for two MBRS factors: Responsiveness, $F(3, 48) = 3.70$, $p < .05$, $\eta 2 = 0.07$ and Affect, $F(3, 48) = 6.73$, $p < .05$, $\eta 2 = 0.12$, whereas main effects for disability differences were significant for MBRS factor Achievement/Directive, $F(3, 48) = 6.44$, $p < .05$, $\eta 2 = 0.11$. Additionally, Univariate ANOVAs showed no significant main effects for parents ($F(2, 49) = 0.65$, $p > .05$, Wilks' $\lambda = .974$, partial $\eta^2 = 0.03$) and disability ($F(2, 49) = 2.40$, $p > .05$, Wilks' $\lambda = .920$, partial $\eta^2 = 0.08$) with respect to *Child Social Engagement*. They also indicated that main effects for parent and disability differences were not significant for two CBRS factors: Attention, $F(2, 49) = 0.99$, $p > .05$, $\eta 2 = 0.02$ and Initiation, $F(2, 49) = 0.43$, $p > .05$, $\eta 2 = 0.01$, whereas main effects for disability differences were significant for the CBRS factor Initiation $F(2, 49) = 3.84$, $p < .05$, $\eta 2 = 0.06$.

Table 2
*Effects of Parent and Disability on Parents' Interactive Style and Children's Social Engagement*

| OUTCOME VARIABLES | Fathers | | | Mothers | | | F Parent | F Disability | F Parent x Disability |
|---|---|---|---|---|---|---|---|---|---|
| | DS N= 11 | Autism N = 16 | Total N = 27 | DS N= 11 | Autism N = 16 | Total N = 27 | | | |
| Parent Interactive Style[1] | | | | | | | 2.69* | 2.92* | 1.92 |
| Responsive | 2.64 (.87) | 2.0 (.43) | 2.28 (.70) | 2.61 (1.16) | 3.03 (1.10) | 2.86 (1.12) | 3.70* | 0.14 | 4.05* |
| Affect | 2.53 (.96) | 2.08 (.50) | 2.26 (.75) | 2.85 (1.08) | 2.91 (.81) | 2.89 (.91) | 6.37* | 0.73 | 1.22 |
| Achievement/Directive | 2.61 (.68) | 3.06 (.80) | 2.88 (.77) | 2.88 (.93) | 3.46 (.53) | 3.22 (.76) | 2.68 | 6.44* | 0.91 |
| Child Social Engagement[2] | | | | | | | 0.65 | 2.14 | 0.41 |
| Attention | 3.00 (1.15) | 2.41 (.78) | 2.65 (.97) | 3.02 (1.08) | 2.92 (.99) | 2.96 (1.01) | 0.99 | 1.83 | 0.81 |
| Initiation | 3.06 (1.07) | 2.35 (.86) | 2.64 (1.00) | 3.00 (.99) | 2.75 (.88) | 2.85 (.92) | 0.43 | 3.84* | 0.79 |

[1]Maternal Behavior Rating Scale;[2] Child Behavior Rating Scale. * = $p < .05$.

To sum up, there were not many differences between mothers and fathers, with the exception of mothers being more responsive and affect than fathers. There are also no differences between mothers and fathers on ratings of achievement directive. Both mothers and fathers display more achievement directive with children with autism than with DS. The main difference in parent's interaction with autistic versus DS children is that parents are more directive with autistic children than with DS children. Children with autism have lower levels of initiation than do children with DS, although autistic children's differences on initiation are just below the significance level. Mothers scored higher on outcomes such as Parent Interactive Style (response,

affect, and Achievement/Directive) and Child Social Engagement (attention and initiation). Fathers of children with DS scored higher on both responsive and affect as well as attention and initiation, whereas they scored lower on Achievement/Directive. However, mothers of children with DS scored lower on responsive, affect, and Achievement/Directive, whereas they scored higher on attention and initiation.

## Relationship between Mothers' and Fathers' Interactive Style and Children's Social Engagement

Table 3 shows the intercorrelations between the MBRS and CBRS variables, which were investigated using the Pearson product-moment correlation coefficient. There was a strong, positive correlation between responsive and attention [r = .63, $p$ < .00] as well as between responsive and initiation [r = .60, $p$ < .00]. Similarly, there was a strong, positive correlation between affect and attention [r = .63, $p$ < .00] as well as between affect and initiation [r = .59, $p$ < .00]. Therefore, both responsiveness and affect are correlated with both the attention and initiation CBRS subscales. Achievement/Directive is not correlated with Responsiveness [r = .06, $p$ > .05] and Affect [r = .13, $p$ > .05]. However, there is a very high level of correlation between responsiveness and affect [r = .88, $p$ > .00]. This indicates that both of these variables cannot be used as independent variables in regression analysis because of problems associated with collinearity.

Table 3
*Correlations of MBRS and CBRS Subscales*

| VARIABLES | Attention | Initiation | Responsiveness | Affect | Achievement/Directive |
|---|---|---|---|---|---|
| Responsiveness | .63** | .60** | ___ | .88** | .06 |
| Affect | .63** | .59** | | ___ | .13 |
| Achievement/Directive | −.06 | −.17 | | | ___ |

** $p$ < .00.

Table 4 to address the problem of collinearity, factor analysis was computed. These results, which are shown in Table 4, indicate that there were two MBRS factors. These include responsive/affect and directive.

Results indicated a low pattern of correlation between mothers' and fathers' style of interacting, as shown in Table 5. The only correlation that is significant is mothers' and fathers' responsiveness [r = .39, $p$ < .05] with their children. Even though mothers tend to be more responsive and affective than fathers, mothers and fathers have similar patterns of responsiveness with their children.

Table 4
*Factor Structure Matrix of MBRS*[1, a]

| MBRS Variables | Factors | |
|---|---|---|
| | Responsive/ Affect | Directive |
| Sensitivity | .92 | |
| Warmth | .90 | |
| Inventiveness | .90 | |
| Effectiveness | .90 | |
| Acceptance | .90 | |
| Responsivity | .89 | |
| Expressiveness | .85 | |
| Enjoyment | .84 | |
| Praise | .83 | |
| Pace | | .85 |
| Directiveness | | .77 |
| Achievement | | .54 |

[1] Maternal Behavior Rating Scale
[a] Extraction Method: Principal Component Analysis. Rotation Method: Oblimin with Kaiser Normalization.

Table 5
*Correlations between Mothers' and Fathers' Style of Interacting with Their Child*

| VARIABLE | Fathers | | |
|---|---|---|---|
| | Responsiveness | Affect | Achievement/Directiveness |
| Mothers | | | |
| Responsiveness | .39* | .32 | .04 |
| Affect | .39* | .27 | .02 |
| Achievement/Directiveness | .08 | .04 | .33[.09] |

* = $p < .05$.

Table 6 shows that there is a significant pattern of moderate correlation between the way children interact with their mother and father[r = .45, $p < .05$]. This is consistent with the MANOVA data showing no overall differences in children's interactions with their mother versus their father.

Table 6
*Correlations between Children's Interactive Engagement with Mother and Father*

| VARIABLE | Child with Father | | |
|---|---|---|---|
| | Attention | Initiation | Total |
| Child with Mother | | | |
| Attention | .46* | .44* | .46* |
| Initiation | .43* | .40 | .42* |
| Total | .45* | .43* | .45* |

* = $p < .05$.

**Predictors of Children's Engagement**

A multiple regression was computed to examine the factors (type of disability, parent, directive, and Responsive/affect) that predict children's CBRS scores. A summary of the results of the regression analysis of children's disability type (autism versus DS), parents (mothers versus fathers, and the two MBRS factors on children's engagement, which include initiation and attention, are shown in Table 7. Even though the MBRS has three factors (Responsivity, Affect, and Directive), Affect was not included in this analysis because it has a high correlation with responsiveness (r = .88), which raised the likelihood of collinearity. Thus, both of these variables cannot be used as independent variables in a regression analysis. All variables were entered in four steps. Therefore, this output has four models listed: Model 1, Model 2, Model 3, and Model 4. The information in Model 1 is for *Type of Disability* predicting children's CBRS scores. Model 2 is for Type of Disability plus *parent* predicting children's CBRS scores. Model 3 for is Type of Disability plus *parent and directive* predicting children's CBRS scores. Model 4 is for Type of Disability plus *parent, directive, and Responsive/Affect* predicting children's CBRS scores. Results indicated that when *type of disability* is entered by itself, it results in nonsignificant $R^2$ changes ranging from 1% to 36% of the variability. Similarly, when the other factors along with *type of disability* that are predictors (*type of disability, parent, directive and responsive/affect*) are entered, they are not significant, except for the responsive/affect factor, which is associated with variability in children's CBRS scores. It can be seen from Table 5 that the R-square ($R^2$) figure indicated that 41% of the variance in CBRS scores is explained by Type of Disability, Parent, Directive, and Responsive/Affect. In other words, for the final model (type of disability, parent, directive and responsive and affect), its value is 0.41, which means that four variables account for 41% of the variation in children's engagement. However, *only responsive/affect* was a significant predictor of children's CBRS scores: initiation ß = .63, T = 5.59, $p$ = .000; attention, ß = .67, T = 5.99, $p$ = .000.

Consequently, Responsive/Affect was the only maternal behavioral style variable that was significantly related to children's engagement. Additionally, Responsive/Affect obtained the largest beta weights (initiation, β = .63, $p$ = .00; attention, β = .67, $p$ = .00), demonstrating that it made the largest contribution to the regression equation, while holding all other predictor variables constant. Results also indicated that Directive had a negative, nonsignificant association with children's engagement, such as initiation (ß = −.18, T = −1.58, $p$ = .120) and attention (ß = −.12, T = −1.02, $p$ = .312), while responsive/affect had a positive, significant association with children's engagement, which included initiation (ß = .63, T = 5.59, $p$ = .000) and attention (ß = .67, T = 5.99, $p$ = .000).

Table 7
*Relationship of Child's Disability, Parent, and Parent's Interactive Style with Child's Social Engagement*

| Dependent Variable | Model | Beta | *t*-Value | Significance | $R^2$ | $R^2$ Change |
|---|---|---|---|---|---|---|
| Initiation[1] | Type of Disability | −.25 | −1.85 | .070 | .04 | |
| | Type of Disability | −.25 | −1.85 | .070 | .04 | |
| | Parent | .11 | 0.82 | .824 | | |
| | Type of Disability | −.19 | −1.36 | .181 | .05 | .01 |
| | Parent | .14 | 1.09 | .282 | | |
| | Directive[2] | −.19 | −1.32 | .194 | | |
| | Type of Disability | −.15 | −0.13 | .192 | .41** | .36 |
| | Parent | −.08 | −0.69 | .493 | | |
| | Directive[2] | −.18 | −1.58 | .120 | | |
| | Responsive/Affect[2] | .63 | 5.59 | .000 | | |
| Attention[1] | Type of Disability | −.17 | −1.27 | .210 | .04 | |
| | Type of Disability | −.17 | −1.27 | .028 | .04 | |
| | Parent | .11 | 0.82 | .414 | | |
| | Type of Disability | −.14 | −0.94 | .352 | .05 | .01 |
| | Parent | .19 | 1.33 | .191 | | |
| | Directive[2] | −.13 | −0.86 | .396 | | |
| | Type of Disability | −.09 | −0.80 | .426 | .41** | .36 |
| | Parent | −.06 | −0.50 | .616 | | |
| | Directive[2] | −.12 | −1.02 | .312 | | |
| | Responsive/Affect[2] | .67 | 5.99 | .000 | | |

1Child Behavior Rating Scale;
2 Maternal Behavior Rating Scale Factors.
** $p < .0$, Oh 0.

Results from this analysis indicate that only the responsive/affect factor is associated with variability in children's CBRS scores. Children are more actively engaged as measured by attention when parents take part in interactions that are characterized by higher levels of Responsive/Affect. Directive does not appear to be effective interactive strategies for engaging children with either disability. Mothers are more directive than fathers, and this difference is most strongly reflected in mothers' interactions with children with autism versus DS**.**

## Discussion

In the current study, data has been reported to examine differences associated with mothers versus fathers and children with DS versus children with autism. The study yields four main findings. A first finding showed that there were not many differences between mothers and fathers regarding ratings of achievement directive. However, mothers are more responsive and affect than fathers were. The results from the current study are consistent with the results of some previous studies (Chiarello et al., 2006; Kochanska & Aksan, 2004; Mendonça et al., 2011; Power, 1985; Wilson & Durbin, 2013) that indicated that mothers were rated as more responsive to their children than were fathers. For example, a study carried out by Kochanska and Aksan

(2004) concluded that, although children were equally responsive to and playful with both parents, mothers were more responsive than fathers during play sessions, whereas the results of both parents were similar in terms of achievement orientation, affect/animation, and directiveness (Chiarello et al., 2006). Another study conducted by Girolametto and Tannock (1994) also supported the finding of the current study and revealed that both fathers and mothers exhibited similar results in the context of turn-taking control, response referents, and responses to the child's participation. However, in terms of directiveness, fathers' use of response and topic control was higher as compared to that of mothers. The present study also concluded that mothers were more responsive to the child's focus when the child was uninvolved.

In another study (Schueler & Prinz, 2013) related to parents' responsiveness, it was found that both parents' ratings of contingent responsiveness were similar. However, the study showed that mothers exhibited slightly more contingent responding and less noncontingent or negative responding than did fathers. The study also supported the hypothesis that maternal and paternal contingent responsiveness can influence child compliance and child behavior in a later interaction, even when other aspects of parent behavior are taken into account. Accordingly, responsiveness reflected developmental changes in children, parents, and relationships (Kochanska & Aksan, 2004). Furthermore, some of the past literature may also give us an idea of how maternal characteristics and child characteristics can influence maternal responsiveness (Drake, Humenick, Amankwaa, Younger, & Roux, 2007).

In contrast to the results of previous studies, Russell and Russell (1987) reported that mothers were not more responsive to their children. Likewise, fathers were not more negative or restrictive. Moreover, mothers who interacted with their children were more directive and involved in caregiving, whereas fathers' interactions took place more frequently in the context of play.

A second finding is that fathers of children with DS scored higher on responsiveness and affect as well as attention and initiation, whereas they scored lower on Achievement/Directive. Additionally, mothers of children with DS scored lower on responsiveness, affect, and achievement/directive, whereas they scored higher on attention and initiation. The main difference in parents' interactions with autistic versus DS children is that parents are much more directive with autistic children than with children who have DS. This difference might occur because children with autism have lower levels of initiation as compared to children with DS, although autistic children's differences on initiation are just below the significance level. As a result, both mothers and fathers interact better with children with DS than children with autism in terms of responsiveness associated with children's pivotal behavior measures.

The literature on parent and child interaction mostly focuses on whether the interactional characteristics of disabled young children with their parents differ from those of nondisabled children, rather than comparing characteristics of interactional behaviors of parents and their children with DS and autism (Kim & Mahoney, 2004; Landry, Garner, Pirie, & Swank, 1994; Mahoney, 1988; Mahoney, Fors, & Wood, 1990; Mahoney & Robenalt, 1986; Roach, Barratt, Miller, & Leavitt, 1998; Sterling, 2007; Tannock, 1988a, 1988b; Töret, Ozdemir, & Ozkubat, 2015). These studies reported that the parents of children with disabilities, including DS and autism, displayed lower rates of responsive and affect, whereas they showed higher rates of directive as compared to the parents of nondisabled children. Additionally, interactional characteristics of typically developing children also differ from those of nondisabled children in terms of less positive affect. In other words, disabled infants or young children tend to demonstrate difficulties in turn-taking, readable cues, and positive affect to their parents as compared to nondisabled children.

Within the autism spectrum disorder (ASD) literature, it has been reported by Flippin and Watson (2011) that children with ASD are likely to engage in more relational play with mothers than with fathers. Their study showed that, although both mothers and fathers used similar proportions of responsive play behavior and use of both parents' verbal and play behaviors correlated significantly with higher-level child object play, the use of responsive play behavior was correlated with higher-level object play only for fathers. However, a follow-up study by Flippin and Watson (2015) indicated that mothers of children with ASD were more responsive than were fathers of children with ASD on the basis of both frequency of verbal responses and a proportion of child initiations. Furthermore, those children initiated more leads with their mothers than with their fathers during play interactions. In relation to Turkish mothers, Diken (2012) reported that mothers of children with autism had higher scores on verbal praise and pace than did mothers of children with MID and SLD.

Another study conducted by Töret et al. (2015) indicated that mothers of children with severe ASD demonstrated less sensitivity and responsiveness as well as more directive interaction styles with their children, whereas those children showed lower rates of attentiveness and social initiation behavior during their interactions with their mothers. Another study conducted by Watson (1998) revealed that mothers of children with autism provide their children with as much verbal input that is related to the child's focus of attention, as mothers of typically developing children. Results from this study also indicated that mothers of children with autism use more utterances that are directed at things outside the child's focus of attention, but that those mothers' directive verbalizations to their children with autism are not within their children's difficulties in attention and interaction than mothers of typically developing children.

Studies carried out with children with DS and nondisabled children indicated that mothers of children with DS dominated the communication during interaction (Mahoney & Robenalt, 1986) and exhibited more control in most aspects of interaction with their children (Tannock, 1988a). The findings from Tannock's (1988a) study reported that mothers of DS children were highly directive regarding topic control and turn-taking control; however, both groups of mothers were similar in terms of verbal responsiveness. The differences also observed in the use of child-initiated signals between children with DS and nonhandicapped children may partly be the result of maternal interaction style (Fisher, 1988). Furthermore, it has been reported that mothers of children with DS may not read their child's signals easily as well as not respond to their initiatives due to the child's disability. Accordingly, the wide range of individual differences in the developmental abilities of children with DS might have an impact on maternal responsiveness (Zhiyanova, 2005).

A third finding is that results from correlational analyses revealed that there was a low pattern of correlation between mothers' and fathers' style of interacting. The only correlation that is significant is mothers' and fathers' responsiveness with their children. The findings show that there is a significant pattern of moderate correlation between the way in which children interact with mothers and with their fathers. This might indicate that the way children interact with their parents is largely influenced by their intrinsic or perhaps genetic capabilities. It also reflects the fact that these parents had substantial similarity in their style of interacting with their children. This interpretation is also consistent with the finding of the regression analyses, which indicated that for both mothers and fathers, regardless of whether the child had DS or autism, the parents' level of responsiveness was associated with the child's level of engagement with their parents. Findings from a multiple regression analysis indicated that only the responsive/affect factor is associated with variability in children's CBRS scores. This finding accords with those of other studies (e.g., Karaaslan & Mahoney, 2015; Kim & Mahoney, 2004; Mahoney & Perales, 2008) that have found associations between parents' responsiveness and children's engagement or pivotal behavior. Likewise, some researchers (e.g., Karaaslan, Diken, & Mahoney, 2013; Karaaslan & Mahoney, 2015) found in all of their studies that children are more actively engaged either as measured by attention or initiation when parents engage in interactions that are characterized by higher levels of responsiveness/affect. Directiveness does not also appear to be an effective interactive strategy for engaging children with either disability. Interestingly, mothers are more directive than fathers, and this difference appears most strongly in mothers' interactions with children with autism as compared to those with DS.

For example, a study conducted by Kim and Mahoney (2004) concluded that mothers' responsiveness and affect were associated with their child's engagement. However,

mothers' directiveness and achievement orientation have not been found to be related to the engagement of their child. Studies that are focused on parent–child interaction (e.g., Karaaslan, Diken, & Mahoney, 2011; Mahoney, Boyce, Fewell, Spiker, & Wheeden, 1998; Mahoney, Powell, & Finger, 1985) also indicated that parents' interactional behaviors that are highly directive and relatively nonresponsive do not support an increase in the development of their child with disabilities (cited in Diken, 2012).Furthermore, a qualified parent–child interaction seems to decrease the disability of children with developmental delay, including DS and autism. It has been clearly established in the literature (e.g., Karaaslan & Mahoney, 2013; Mahoney, 2009; Mahoney & Nam, 2011; Mahoney & Perales, 2003; Mahoney et al., 2006; Tamis-LeMonda et al., 2001; Tamis-LeMonda, Shannon, Cabrera, & Lamb, 2004; Warren et al., 2010) that during the early childhood years, parents promote the development of their children who have disabilities, including DS and ASD, by engaging in highly responsive interactions throughout their daily routines. Consistent with this interpretation, findings reported by the existing literature on parent–child interactions (e.g., Brady, Warren, & Sterling, 2009) revealed that responsiveness is also a primary influence on a child's development. A recent study by Yoder and Warren (2004) supported the notion of responsivity as a predictor for a child's development. In this study, it has been examined to determine predictor factors of language change of children with DS. In the current study, it was concluded that child's language development can be positively maximized by promoting their parents' responsivity, while the nature of the disability negatively affects the children's language development. Regardless of etiology, optimal parental responses predicted child's later language development.

Finally, based upon the findings from the current study, it is possible to claim that such results reflect that, similar to Western mothers, Turkish mothers of children with DS or autism are more responsive than are fathers and also that the characteristic interactional behaviors of these parents are correlated with their children's engagement. Accordingly, parents of children with autism are much more directive than are parents of children with DS.

## Limitations of the study

There are a few major limitations of this study. One of the limitations is that the sample size was small and did not reflect the wide range of individual differences among parents and children with disabilities, including DS and autism. This small sample size limited the power of the analyses that were used in this study. Clearly, for enhancing the generalizability of the findings from this study, similar investigations with larger sample groups should be undertaken. The second limitation is that observations of the characteristics of interactional behaviors of parents and their children with DS or autism were video recorded at a single time. This situation is especially important for understanding the behavioral styles at different times.

## References

Ceber-Bakkaloğlu, H., & Sucuoglu, B. (2000). Normal ve zihinsel engelli bebeklerde anne-bebek etkileşiminin karşılaştırmalı olarak incelenmesi (Reciprocal investigation of mothers' interactions with babies with mental retardation and with babies with typical development). *Ankara University Faculty of Educational Sciences Journal of Special Education, 2*(4), 47–58. http://dergiler.ankara.edu.tr/dergiler/39/47/415.pdf

Ceyhun, A. T., Ozdemir, S., Toret, G., & Ozkubat, U. (2015). A Comparison of parents-child interactions of children with autism spectrum disorders and with their parents and typically developing children and their parents. *International Journal of Early Childhood Special Education (INT-JECSE), 7*(2), 183–211.

Chiarello, L. A., Huntington, A., & Bundy, A. (2006). A comparison of motor behaviors, interaction, and playfulness during mother-child and father-child play with children with motor delay. *Physical & Occupational Therapy in Pediatrics, 26*(1/2), 129–151.

Darling-Fisher, C. S., & Tiedje, L. B. (1990). The impact of maternal employment characteristics on fathers' participation in child care. *Family Relations, 39*, 20–26.

Diken, I. H. (2009). Turkish mothers' self-efficacy beliefs and styles of interactions with their children with language delays. *Early Child Development and Care, 179*(4), 425–436.

Diken, I. H. (2012). Exploring interactional behaviors of Turkish mothers and their children with special needs: Implications for early intervention. *Education and Science*, *37*(163), 283–296.

Diken, O. (2009). *Ebeveyn davranışını değerlendirme ölçeği ve çocuk davranışını değerlendirme ölçeği'nin geçerlik ve güvenirlik çalışmaları* (Doctoral Dissertation, Anadolu University Graduate School of Health Sciences, Eskişehir, Turkey). Retrieved from https://tez.yok.gov.tr/UlusalTezMerkezi

Diken, O., & Mahoney, G. (2013). Interactions between Turkish mothers and preschool children with autism. *Intellectual and Developmental Disabilities*, *51*(3), 190–200.

Diken, O., Topbaş, S., & Diken, I. H. (2009). Ebeveyn Davranışını Değerlendirme Ölçeği (EDDÖ) ile Çocuk Davranışını Değerlendirme Ölçeği (ÇDDÖ)'nin geçerlik ve güvenirlik çalışmaları [Validity and reliability of the Turkish versions of the Maternal Behavior Rating Scale (MBRS) and the Child Behavior Rating Scale (CBRS)]. *Özel Eğitim Dergisi, 10*(2), 41–60.

Drake, E. E., Humenick, S. S., Amankwaa, L., Younger, J., & Roux, G. (2007). Predictors of maternal responsiveness. *Journal of Nursing Scholarship*, *39*(2), 119–125.

Flippin, M., & Watson, L. R. (2011). Relationships between the responsiveness of fathers and mothers and the object play skills of children with autism spectrum disorders. *Journal of Early Intervention*, *33*(3), 220–234.

Flippin, M., & Watson, L. R. (2015). Fathers' and mothers' verbal responsiveness and the language skills of young children with autism spectrum disorder. *American Journal of Speech-Language Pathology, 24*, 400–410.

Girolametto, L., & Tannock, R. (1994). Correlates of directiveness in the interactions of fathers and mothers of children with developmental delays. *Journal of Speech and Hearing Research, 37*(5), 1178–1191.

Gursel, O., Tekin-Iftar, E., & Bozkurt, F. (2006). Effectiveness of simultaneous prompting in small group: The opportunity of acquiring non-target skills through observational learning and instructive feedback. *Education and Training in Developmental Disabilities, 41*(3), 225–243.

Hanzlik, J. R., & Stevenson, M. B. (1986). Interactions of mothers with their infants who are mentally retarded, retarded with cerebral palsy or non-retarded. *American Journal of Mental Deficiency, 90*, 513–520.

Heath, P. (2005). Parent-preschooler interactions. *Parent-Child Relations: History, Theory, Research, and Context* (pp. 91–116). New Jersey, nj: Pearson Merrill Prentice Hall.

Karaaslan, O., & Mahoney, G. (2015). Mediational analyses of the effects of responsive teaching on the developmental functioning of preschool children with disabilities. *Journal of Early Intervention, 37*(4), 286–299.

Karaaslan, O., Diken, I. H., & Mahoney, G. (2011). The effectiveness of the responsive teaching parent mediated developmental intervention program in Turkey: A pilot study. *International Journal of Disability, Development and Education, 58*(4), 359–372.

Karaaslan, O., Diken, I. H., & Mahoney, G. (2013). A randomized control study of responsive teaching with young Turkish children and their mothers. *Topics in Early Childhood Special Education*, *33*(1), 18–27.

Karaaslan, O., & Mahoney, G. (2013). Effectiveness of responsive teaching with children with Down syndrome. *Intellectual and Developmental Disabilities, 51*(6), 458–469.

Kelly, J. F., & Barnard, K. E. (2000). Assessment of parent-child interaction: Implications for early intervention. In J. P. Shonkoff & S. J. Meisels (EdS.), *Handbook of early childhood intervention* (2nd ed., pp. 258–290). Cambridge: Cambridge University Press.

Kim, J. M., & Mahoney, G. (2005). The effects of relationship focused intervention on Korean parents and their young children with disabilities. *Research Developmental Disabilities, 26*, 117–130.

Kim, J. M., & Mahoney, G. (2004). The effects of mother's style of interaction on children's engagement: Implications for using responsive interventions with parents. *Topics in Early Childhood Special Education, 24*(1), 31–38.

Kochanska, G., & Aksan, N. (2004). Development of mutual responsiveness between parents and their young children. *Child Development, 75*(6), 1657–1676.

Kreuder, K. R. (1996). *The differences between mother-infant and father-infant interactions at nine months. Southern Illinois University Carbondale opensiuc* (Honors Thesis, University Honors Program, Southern Illinois University, Carbondale). Retrieved fromhttp://opensiuc.lib.siu.edu/cgi/viewcontent.cgi?article=1198&context=uhp_theses

Landry, S. H., Garner, P. W., Pirie, D., & Swank, P. R. (1994). Effects of social context and mothers' requesting strategies on Down's syndrome children's social responsiveness. *Developmental Psychology, 30*(2), 293–302.

Mahoney, G. (2008). *The Maternal Behavior Rating Scale-Revised (Available from the author)*. Mandel School of Applied Social Sciences, Case Western Reserve University, Cleveland Ohio, USA.

Mahoney, G. (2009). Relationship Focused Intervention (RFI): Enhancing the role of parents in children's developmental intervention. *International Journal of Early Childhood Special Education (INT-JECSE), 1*(1), 79–94.

Mahoney, G., & Neville-Smith, A. (1996). The effects of directive communications on children's interactive engagement: Implications for language intervention. *Topics in Early Childhood Special Education, 16*(2), 236–250.

Mahoney, G. J., Fors, S., & Wood, S. (1990). Maternal directive behavior revisited. *American Journal of Mental Retardation, 94*, 398–406.

Mahoney, G., & Nam, S. (2011). The parenting model of developmental intervention. In R. M. Hodapp (Ed.), *International Review of Research on Mental Retardation*, *41* (pp. 73–125). New York, NY: Academic Press.

Mahoney, G., & Perales, F. (2003). Using relationship-focused intervention to enhance the social-emotional functioning of young children with autism spectrum disorders. *Topics in Early Childhood Special Education, 23*(2), 74–86.

Mahoney, G., & Robenalt, K. (1986). A comparison of conversational patterns between mothers and their Down Syndrome and normal infants. *Journal of the Division of Early Childhood, 10*(2), 172–180.

Mahoney, G., & Perales, F. (2008).How relationship focused intervention promotes developmental learning. *Down Syndrome Research & Practice, 13*(3), 47–53.

Mahoney, G., Boyce, G., Fewell, R. R., Spiker, D., & Wheeden, C. A. (1998). The relationship of parent-child interaction to the effectiveness of early intervention services for at-risk children and children with disabilities. *Topics in Early Childhood Special Education*, *18*(1), 5–17.

Mahoney, G., Perales, F., Wiggers, B., & Herman, B. (2006). Responsive teaching: Early intervention for children with Down syndrome and other disabilities. *Down Syndrome Research and Practice, 11*(1), 18–28.

Mahoney, G., & Wheeden, C. A. (1998). Effects of teacher style on the engagement of preschool-aged children with special learning needs. *Journal of Developmental and Learning Disorders, 2*(2), 293–315.

Mendonça, J. S., Cossette, L., Strayer, F. F., & Gravel, F. (2011). Mother-child and father-child interactional synchrony in dyadic and triadic interactions. *Sex Roles, 64*, 132–142.

Perales Mahoney, F. (2009). *The relationship between parenting stress and maternal responsiveness among mothers of children with developmental problems* (Doctoral dissertation, Mandel School of Applied Social Sciences Case Western Reserve University, USA). Retrieved from https://etd.ohiolink.edu/rws_etd/document/get/case1238097387/inline

Power, T. G. (1985). Mother and father-infant play: A developmental analysis. *Child Development, 56*, 1514–1524.

Russell, G., & Russell, A. (1987). Mother-child and father-child relationships in middle childhood. *Child Development, 58*(6), 1573–1585.

Schueler, C. M., & Prinz, R. J. (2013). The role of caregiver contingent responsiveness in promoting compliance in young children. *Child Psychiatry & Human Development, 44*, 370–381.

Spiker, D., Boyce, G. C., & Boyce, L. K. (2002). Parent-child interactions when young children have disabilities. *International Review of Research in Maternal Retardation, 25*, 35–70.

Tamis-LeMonda, C. S., Bornstein, M. H., & Baumwell, L. (2001). Maternal responsiveness and children's achievement of language milestones. *Child Development, 72*(3), 748–767.

Tamis-LeMonda, C. S., Shannon, J. D., Cabrera, N. J., & Lamb, M. E. (2004). Fathers and mothers at play with their 2- and 3-year-olds: Contributions to language and cognitive development. *Child Development, 75*(6), 1806–1820.

Tannock, R. (1988a). Control and reciprocity in mothers' interactions with Down syndrome and normal children. In K. Marfo (Ed.), *Parent-child interaction and developmental disabilities: Theory, research and intervention* (pp. 163–180). New York, NY: Praeger.

Tannock, R. (1988b). Mothers' directiveness in their interactions with their children with and without Down Syndrome. *American Journal on Mental Retardation, 93,* 154–165.

Töret, G., Ozdemir, S., & Ozkubat, U. (2015). An exploration of interactional behaviors of Turkish mothers and their children with severe autism spectrum disorders. *Ankara Üniversitesi Eğitim Bilimleri Fakültesi Özel Eğitim Dergisi, 16*(1), 23–28.

Trommsdorff, G., & Kornadt, H. J. (2002). Parent-child relations in cross-cultural perspective. In L. Kuczynski (Ed.), *Handbook of dynamics in parent-child relations* (pp. 271–306). London, UK: Sage.

Warren, S. F, & Brady, N. C. (2007). The role of maternal responsivity in the development of children with intellectual disabilities. *Mental Retardation and Developmental Disabilities Research Reviews, 13*(4), 330–338. http://dx.doi.org/10.1002/mrdd.20177

Warren, S. F., Brady, N., Sterling, A., Fleming, K., & Marquis, J. (2010). Maternal responsivity predicts language development in young children with Fragile X Syndrome. *American Journal of Intellectual Developmental Disabilities, 115*(1), 54–75. http://dx.doi.org/10.1352/1944-7558-115.1.54

Watson, L. R. (1998). Following the child's lead: Mothers' interactions with children with autism. *Journal of Autism and Developmental Disorders, 28*(1), 51–59.

Wilson, S., & Durbin, C. E. (2013). Mother-child and father-child dyadic interaction: Parental and child bids and responsiveness to each other during early childhood. *Merrill-Palmer Quarterly*, *59*(3), 249–279.

Yoder, P., & Warren, S. F. (1998). Maternal responsivity predicts the pre-linguistic communication intervention that facilitates generalized intentional communication. *American Speech-Language-Hearing Association, 41,* 1207–1219.

Yoder, P. J., & Warren, S. F. (2004). Early predictors of language in children with and without Down syndrome. *American Journal on Mental Retardation, 109*(4), 285–300.

Young, D. M., & Roopnarine, J. L. (1994). Fathers' childcare involvement with children with and without disabilities. *Topics in Early Childhood Special Education*, *14*(4), 488–502.

Zhiyanova, P. (2005). Psychological support provided to families of young children with Down syndrome. *Down Syndrome News and Update, 5*(1), 17–19. Retrieved from https://www.down-syndrome.org/practice/354/