Role of Temperament Traits and Empathy Skills of Preschool Children in Predicting Emotional Adjustment

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Abstract

This research aimed to investigate the role of temperament traits and empathy skills of preschool children in predicting social emotional adjustment. Designed in accordance with the relational screening method, the study was completed with 284 children attending preschool educational institutions in Çanakkale provincial center in the 2017-2018 educational year, their teachers, and parents. Research data were collected using the Short Temperament Scale (Yağmurlu & Sanson, 2009), Preschool Behavioral and Emotional Rating Scale (Balat Uyanık & Özdemir Beceren, 2014) and Empathy Questionnaire (Adak Özdemir & Uysal, 2017). The research results show that there are significant correlations between temperament traits, empathy skills and social emotional adjustment of children. The subdimensions of temperament and empathy significantly predicted the social emotional adjustment subdimensions of family involvement, social confidence, readiness for school and emotional adjustment.

Key words: empathy, temperament, social emotional adjustment, preschool, children

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INTRODUCTION

Temperament, which may be a determinant of a variety of traits like empathy and social behavior, plays a significant role in different development areas in children (Rothbart, Ahadi & Evans, 2000). Research have found correlations between children's temperament traits and variables like behavior problems, peer acceptance, friend selection and social sufficiency, social-based school success, self-regulation and self-efficacy capacity and love of school with student-teacher interactions. In other words, temperament determines the child's unique behavior style and provides information about the child's individuality (Kaya & Akgün, 2016). Debated for centuries, the temperament concept was defined by Robert and Bates (1998) as genetically-sourced variability observed in individual behavior. Temperament is the quantitative and qualitative aspects of changes in emotionally-sourced reactions unique to the individual displayed in certain situations during daily life (Köknel,1999). According to Derryberry and Rothbart (1997), temperament is emotional-motivating and careful adaptation variations shaped and formed by human experience. Özdemir and Acarkan (2010) defined temperament as the psychological source of genetics in a person, a psychic aspect of DNA. Robert McCall stated temperament traits were probably strongly affected by biological factors and were more affected by experience and context with increasing development (Shiner et al., 2012). The root of research about temperament in infants and children is based in the 1950s, and in the 1980s it became one of the topics of current developmental psychology and child psychiatry (Zentner & Bates, 2008). Alexander Thomas and Stella Chess, Arnold Buss and Robert Plomin, Hill Goldsmith, and Mary Klevjord Rothbart significantly contributed to the literature with research about temperament in children based on different approaches and are noteworthy for different definitions related to temperament. According to Buss and Plomin, temperament is a hereditary personality trait which can be observed from early childhood (Buss & Plomin, 1984; Bee 1995). Thomas and Chess defined temperament as elements related to style of behavior and stated nine defining traits of temperament in children. These traits were determined to be activity level, regularity, approach and withdrawal, adaptability, sensory threshold, intensity, mood, distractibility, and attention duration and persistence. Rothbart and Bates defined a biological basis for temperament in children representing emotionality, activity and attention and defined personal differences in self-regulation and reactions. They stated that temperament included positive effects and approach to behavior, mood and thought, and included the variability of fear, disappointment, sadness, and discomfort in addition to careful reaction and self-control. Individual differences due to temperament have different effects on development in infancy and childhood and they proposed it formed the core of personality (Rothbart & Bates, 2000; Rothbart, Ahadi & Evans, 2010; Rothbart, 2011). Goldsmith defined temperament as differences in primary mood statements in infancy (joy, anger, fear, interest/curiosity) and stated that temperament had dimensions of emotionality, activity and sociability (Goldsmith et al., 1987).

When approaches to child temperament are investigated, five different approaches are noted. These are Cloninger's temperament approach (Cloninger, Svrakic & Przybecek, 1993), Thomas and Chess's approach (Chess & Thomas 1991), Buss and Plomin's temperament approach (Buss & Plomin, 1984), Rothbart's temperament approach (Rothbart & Bates, 2000) and Kagan's biotypologic approach (Kagan & Snidman, 2004). Among these, the most commonly used approach referenced in the field of temperament is Thomas and Chess's approach. Thomas and Chess investigated participants in certain periods from infancy to adulthood in longitudinal studies completed with parents. At the end of the study, they stated there were nine definitive traits of children's temperament (Chess & Thomas, 1991; Chess & Thomas, 1996; cited in Dinç, 2017). Children's temperament traits were represented by subdimensions of activity level, regularity, approach or withdrawal, adaptability, sensory threshold, intensity, mood, distractibility, attention, and persistence (Burger, 2006). Additionally, collecting these traits together three child types were defined. These were "easy temperament" children with regular feeding and sleep times, easily adapting to changes. Children with irregular feeding and sleep times, who had difficulty adapting to innovations and changes and with negative moods had "difficult temperament." Children called "slow to warm up" were children in the center of these two endpoints, with occasional increasing adaptability skills, withdrawing in some situations with both calm and negative moods (Yağmurlu & Kodalak, 2010).

An important part of social emotional development, empathy is defined as the ability to feel or imagine the emotional experiences of others. Empathy affects a person's behavior and social relationships with others (McDonald & Messinger, 2011; Kaya & Siyez, 2010). Individuals may be born with empathic capacity; however, empathic behavior is primarily learned through social experiences (Eryaman, 2008). At the same time, empathy is the source of all social skills (Shapiro, 2012; Goleman, 2008; cited in Santi, 2014; Rieffe, Ketelaar & Wiefferink, 2009). The relevant literature related to empathy shows that the consistency and attitudes displayed by the family to the child during interactions, behavior and practices affect the child's development of empathy (Tong et al., 2012) and shows that the child can understand the feelings of others (Mortari, 2011). Additionally, some research results have revealed a correlation (Koçak & Önen, 2013; Şen & Özbey, 2017; Parker, Mathis & Kupersmidt, 2013) between children's skills in recognizing emotion and social skills and problem behaviors, empathy skills and emotional intelligence (Akaydın & Akduman, 2016).

Temperament traits in children have been associated with many behaviors and skills in the literature. Among studies related to temperament traits in children, there is research investigating the correlations of temperament with gender, number of siblings, emotional regulation skills, parenting styles, school adjustment and interaction with teachers. Temperament determining the quality of sibling relationships begins to be affected by social and emotional skills with advancing years (Stocker, Dunn and Plomin 1989). Research by Yoleri and Küçükyeşil (2014) revealed temperament (rhythmicity, warmth-shyness) predicted language skills while other research revealed temperament (reactivity) predicted open aggression at low levels. According to Önder, Balaban-Dağal and Bayındır (2018) authoritarian and permissive parenting styles explained the temperament traits of persistency and reactivity along with ego robustness at moderate levels. Some research findings have revealed temperament is associated with the school adjustment of children (Kaya & Akgün, 2016).

Kaytez (2016) emphasized the correlation between maternal acceptance-rejection levels and a child's temperament. There was a significant correlation between the mothers' total acceptance-rejection points and total temperament points. Findings of emotional regulation studies related to temperament revealed a significant correlation between emotional regulation skills and temperament traits (Blair, Denham Kochanoff Whipple, 2004). Research showed the temperament traits of preschool children affected friend selection (Gleason, Gower, Gleason & Hohmann, 2005; Metin-Aslan, 2017) and relationships with teachers and peers. Research has revealed that children with difficult temperament have high intensity conflicts with teachers and peers (Acar, 2013; Acar & Rudasill, 2015; Acar, Torquati, Encinger & Colgrove, 2018; Griggs, Gagnon, Huelsman, Kidder-Ashley & Ballard, 2009; Oren, 2009; Rudasill & Rimm-Kaufman 2009; Rudasill, Hawley, Molfese, Tu, Prokasky & Sirota, 2016).

Temperament is thought to affect social and emotional development by determining perception styles and reactions given to surroundings (Rothbart, Ahadi & Hershey, 1994). It is necessary to determine the temperament of children that are excluded and which traits of this temperament the exclusion is caused by and the problems related to this to resolve them within the classroom. Identifying the temperament structure of a child carries foremost importance in terms of displaying the necessary behavior, attitudes and direction needed to develop the personality traits in this structure in a positive way (Özdemir & Acarkan, 2010). By openly defining the structural aspects of temperament traits, we can reach conclusions related to reactions children give to their surroundings, forms of perception of the outer world and behaviors developed based on this perception. Based on this information the strong aspects of children can be found, their environment can be organized as necessary and external factors can be organized to support success (Erşahin Şafak, 2016). There are many studies completed in the field related to temperament. When the research is considered, findings obtained related to positive development of social behavior show that some temperament traits are associated with positive development of social behavior (Yağmurlu, Sanson & Köymen, 2005). There are many studies about temperament and social skills of children in the preschool period. Research has revealed correlations between temperament with social abilities, social adjustment and social competence (Akbaş, 2016; Altun Nalbant, 2015; Arı & Yaban, 2016; Erşahin Şafak, 2016, Griggs, Gagnon, Huelsman, Kidder-Ashley & Ballard, 2009; Kılıç & Güngör 2017;

Aytar, 2017; Pekdoğan & Kanak, 2011; Rudasill & Konold, 2008; Sterry, Reiter-Purtill, Gartstein, Gerhardt, Vannatta & Noll, 2010;Walker, 2009; Van Hecke et al., 2007; Zembat, Yılmaz & İlçi Küsmez, 2017; Zembat, Koçyiğit, Akşin-Yavuz & Tunceli, 2018). Research by Akbaş (2016) investigating the correlation between the social adjustment skills and temperament traits of children in the preschool period identified that variations in the social adjustment and social incompatibility subdimensions were due to variations in the temperament traits of children.

The information stated above indicates the correlation between temperament, empathy, and social emotional adjustment. However, it is noteworthy that the research into temperament, empathy, and social emotional adjustment of children in the relevant literature is limited. As a result, this research aims to research the role of temperament and empathy skills in predicting social emotional adjustment.

METHOD

Research Model

This research on the topic of the prediction of social emotional adjustment of children in the preschool period by temperament and empathy is a descriptive study using the relational screening model. Sample selection is based on the simple random method.

Study Group

The study group in the research comprised 284 children (174 girls, 137 boys) chosen with the simple random method from among 60-month-old children attending preschools and preschool classes in Çanakkale provincial center, their parents, and their teachers. As data were collected during the spring semester of the educational year, children had been attending preschool for at least 4 months.

Data Collection Tools

In this research the "Short Temperament Scale" was used for temperament traits, the "Empathy Questionnaire" was used for empathy skills and the "Preschool Behavioral and Emotional Rating Scale" was used for social emotional adjustment. Additionally, a Personal Information Form was used to obtain demographic information.

Short Temperament Scale: The scale was developed by Prior, Sanson and Oberklaid in 1989. Turkish adaptation was completed by Yağmurlu and Sanson (2009). The Short Temperament Scale is completed by the mother and father and comprises 30 items with a six-point Likert scale from one (almost never) to six (nearly all the time). The scale has four subdimensions of reactivity, persistence, approach, and rhythmicity. These subdimensions measure reactivity meaning the child's state of being ready to react to a certain stimulus or event; persistence is the child's ability to focus their attention on an activity; approach is whether the child has a tendency to approach new people and environments or not; and rhythmicity is the child's regularity of routine behaviors in daily life like eating and sleeping over time. To calculate the points for each subdimension firstly it is necessary or organize the inversely-coded items and obtain the mean for the items in the subdimension. Approach comprises items 1, 4, 13, 15, 18, 21 and 28; persistence comprises items 2, 5, 10, 12, 23, 27 and 30; rhythmicity dimension comprises items 3, 6, 9, 14, 17, 22 and 26; and the reactivity dimension comprises items 7, 8, 11, 16, 19, 20, 24, 25 and 29. Items 1, 4, 8, 14, 17, 22, 23 and 28 are coded inversely. High points obtained from the dimensions indicate high reactivity, high persistence, low approach and low rhythmicity traits in the child. The internal consistency points for the Turkish version of the scale were calculated as .80 for approach, .77 for reactivity, .76 for persistence and .48 for rhythmicity (Yağmurlu & Sanson, 2009).

Preschool Behavioral and Emotional Rating Scale: The Preschool Behavioral and Emotional Rating Scale (PreBERS) was developed by Epstein and Synhorst (2009) to assess the social and emotional aspects of adjustment in preschool children. The language equivalency and validity-reliability studies for the scale were completed by Balat Uyanık and Özdemir Beceren (2014). The scale comprises a total of 4 subdimension with 13 items about emotional adjustment, 13 items about school readiness, 7 items about family involvement and 9 items about social confidence. Comprising 42 items, the scale has a 4-point Likert answer scale. Items are given points from "(0=not at all like the child; 1=not much like the child; 2=like the child; 3=very much like the child), with high points obtained from the scale showing positive social-emotional adjustment in the child. Statements in items answered by teachers request they assess by considering the child's behavior displayed in the class environment. The internal consistency coefficient calculated for the whole scale had a Cronbach alpha value of .95. The internal consistency coefficients for the subdimensions of the scale were calculated as .90 for social confidence, .95 for school readiness, .94 for social adjustment and .86 for family involvement.

Empathy Questionnaire: The "Empathy Questionnaire" developed by Rieffe, Ketelaar and Wiefferink (2009) to determine the behavior related to empathy among preschool children ensures identification of empathy skills of children with an assessment of behavior displayed in the last two months by teachers or parents. The scale gained a 20-item form as a result of pilot studies of a 60-item scale tool developed based on observational studies by child psychologists Eisenberg et al. working with developmental psychologists, teachers and children with autism spectrum disorder. The Empathy Questionnaire comprises three subdimensions of "emotional transition", "attention to the emotions of others" and "pro-social behavior". The scale has a 3-point Likert answer scale of "never", "sometimes" and "often". The validity and reliability studies for the original scale were completed using data obtained from 109 families with children from 1-5 years of age. According to the reliability analysis results, the emotional transition/transmission subdimension had an internal consistency coefficient of $\alpha= .58$; the attention to emotions of others subdimension had $\alpha= .71$ and prosocial-behavior subdimension had $\alpha= .80$ calculated. The scale was adapted to Turkish by Adak-Özdemir and Uysal (2017).

Collection of Data

The mothers and fathers of children included in the study group completed the forms about their children, personal information, temperament traits and empathy skills. For social emotional adjustment behavior, the teachers of children participating in the research completed the scale. After receiving permission from the Provincial Directorate of National Education, school principals were approached, and scales were given to the families by the preschool teachers.

Analysis of Data

In line with the aims of the research, firstly the assumption of normality was tested with the Kolmogorov-Smirnov (K-S) test and data were determined to show normal distribution (p>.05). The t test was used to determine whether temperament traits, empathy skills and social emotional adjustment behavior of children differed according to gender. Multiple regression analysis was used to investigate the role of temperament traits and empathy skills in predicting social emotional adjustment behavior. Regression analysis was based on the Forward method. With this method, independent variables are inserted into the model according to the strength of their correlation with the dependent variable. After measuring the effect of each variable entering the model, variables that do not significantly affect the model are removed (Kalaycı, 2010). The significance level was taken as at least 0.05 in the research.

Results

Multiple regression analysis (forward method) was completed to determine the predictive role of temperament and empathy on social emotional adjustment behavior. In addition, t-test was conducted to investigate whether temperament, empathy and social emotional adaptation differed according to gender. Findings related to the analyses are presented below.

Table 1. Multiple Linear Regression analysis results related to prediction of social emotional adjustment subdimension of family involvement by temperament subdimensions

Predictive Variables	B	Std. E	ß	t	p	Two-way r	Partial R
(Fixed)	-.148	.397		-.373	.710		
Temperament reactivity	.102	.059	.100	1.718	.087	.026	.102
Temperament persistence	.198	.052	.224	3.781	.000**	.268	.221
Temperament approach	.013	.053	.015	.255	.799	.064	.015
Temperament rhythmicity	.251	.066	.227	3.787	.000**	.281	.221
R=.36 R²=.13 F=10.165 p=.0.00**							
Social Emotional Adjustment Family Involvement = (-.148+.10tep+-..01sıc) - (.25rit+.20seb)							

**p<.01

When Table 1 is investigated, it appears there are significant correlations between the reactivity, persistence, approach, and rhythmicity subdimensions of temperament for the social emotional adjustment family involvement subdimension (R=.36, R²=.13, F=10.165, p<0.01). These variables together explain a total of 13% of the variance in family participation. According to the standardized regression coefficient (ß), the order of importance of the predictive variables for family involvement is rhythmicity, persistence, reactivity, and approach. When t test results for significance of regression coefficients are investigated, only the persistence and rhythmicity subdimensions of temperament can be said to significantly predict family involvement.

Table 2. Multiple Linear Regression analysis results related to prediction of social emotional adjustment subdimension of social confidence by temperament subdimensions

Predictive Variables	B	Std. E	ß	t	p	Two way r	Partial R
(Fixed)	-.033	.381		-.085	.932		
Temperament reactivity	.111	.057	.114	1.947	.053	.042	.116
Temperament persistence	.192	.050	.228	3.831	.000**	.262	.224
Temperament approach	.015	.050	.018	.306	.760	.057	.018
Temperament rhythmicity	.207	.064	.196	3.247	.001**	.250	.191
R=.34 R²=.12 F=9.021 p=.0.00**							
Social Emotional Adjustment Social Confidence = (-.03+..11tep+.02sıc) - (.19seb+.21rit)							

**p<.01

When Table 2 is investigated, it appears there are significant correlations between reactivity, persistence, approach, and rhythmicity temperament traits with social confidence subdimension of social emotional adjustment ($R=.34$, $R^2=.12$, $F=9.021$, $p<0.01$). These variables together explain 12% of the total variance in social confidence. According to standardized regression coefficient (ß), the order of the predictive variables according to importance for social confidence is persistence, rhythmicity, reactivity, and approach. When t test results about regression coefficient significance are investigated, only the persistence and rhythmicity subdimensions of temperament can be said to be significant predictors of the social confidence subdimension of social emotional adjustment.

Table 3. Multiple Linear Regression analysis results related to prediction of social emotional adjustment subdimension of school readiness by temperament subdimensions

Predictive Variables	B	Std. E	ß	t	p	Two-way r	Partial R
(Fixed)	-.190	.393		-.483	.629		
Temperament reactivity	.136	.059	.134	2.306	.022*	.061	.137
Temperament persistence	.197	.052	.226	3.798	.000**	.258	.222
Temperament approach	.020	.052	.022	.382	.703	.060	.023
Temperament rhythmicity	.225	.066	.206	3.434	.001**	.259	.201
R=.35 R²=.12 F=9.605 p=0.00**							
Social Emotional Adjustment School Readiness = (-.19+.14tep+.20seb+.23rit) - (.02sıc)							

**p<.01; *p<.05

When Table 3 is investigated, it appears there are significant correlations between reactivity, persistence, approach, and rhythmicity temperament subdimensions with the school readiness subdimension of social emotional adjustment ($R=.35$, $R^2=.12$, $F=9.605$, $p<0.01$). These four variables together explain 12% of the total variance in the school readiness subdimension of social emotional adjustment. When t test results about regression coefficient significance are investigated, only the reactivity, persistence, and rhythmicity subdimensions of temperament can be said to be significant predictors of school readiness, while the approach subdimension does not have a significant effect. When beta coefficients are investigated, the most important predictor of the social emotional adjustment subdimension of school readiness was the persistence subdimension of temperament, and this is followed by reactivity and approach subdimensions in order of relative importance.

Table 4. Multiple Linear Regression analysis results related to prediction of social emotional adjustment subdimension of emotional adjustment by temperament subdimensions

Predictive Variables	B	Std. E	ß	t	p	Two-way r	Partial R
(Fixed)	.172	.360		.477	.633		
Temperament reactivity	.109	.054	.119	2.022	.044*	.058	.120
Temperament persistence	.167	.048	.211	3.514	.001**	.239	.206
Temperament approach	-.012	.048	-.014	-.244	.807	.021	-.015
Temperament rhythmicity	.185	.060	.186	3.068	.002**	.228	.181
R=.32 R²=.10 F=7.71 p=0.00**							
Social emotional adjustment emotional adjustment = (.17+.11tep+.17seb+.19rit) - (-.01sıc)							

**p<.01;*p<.05

When Table 4 is investigated, it appears the reactivity, persistence, approach and rhythmicity temperament subdimensions are significantly associated with the social emotional adjustment subdimension of emotional adjustment (R=.32, R²=.10, F=7.71, p<0.01). These four variables together explain 10% of the total variance of the social emotional adjustment subdimension. When t test results about the significance of regression coefficients are investigated, only reactivity, persistence and rhythmicity subdimensions were significant predictors of emotional adjustment, while the approach variable did not have significant effects. When beta coefficients are investigated, the most important predictor of the emotional adjustment subdimension of social emotional adjustment was the persistence subdimension and this was followed by rhythmicity and reactivity subdimensions in order of relative importance.

Table 5. Multiple Linear Regression analysis results related to prediction of social emotional adjustment subdimension of family involvement by empathy subdimensions

Predictive Variables	B	Std. E	ß	t	p	Two-way r	Partial R
(Fixed)	2.707	.321		8.422	.000		
Emotional transmission	-.144	.117	-.098	-1.231	.219	-.290	-.073
Attention to other's feelings	.283	.137	.130	2.064	.040*	-.051	.122
Pro-social	-.535	.141	-.324	-3.786	.000**	-.334	-.221
R=.36 R²=.13	F=13.987		p=.0.00**				
Social Emotional adjustment family involvement = (2.71+-.54pro+.-.28dikkat)-(-.14bul)							

**p<.01; *p<.05

According to the regression analysis results in Table 5, there were significant correlations at low levels for the emotional transmission, attention to other's feelings and pro-social behavior subdimensions of empathy with the social emotional adjustment subdimension of family involvement (R=.36, R²=.13, F=13.987, p<0.01). These three variables together explain 13% of the total variance related to the family involvement subdimension of social emotional adjustment. When t-test results related to significance of regression coefficients is examined, it appears emotional attention and pro-social behavior subdimensions of empathy were significant predictors of the social emotional adjustment family involvement subdimension. When beta coefficients are investigated, the most important predictor of social emotional adjustment family involvement is the pro-social behavior subdimension of empathy.

Table 6. Multiple Linear Regression analysis results related to prediction of social emotional adjustment subdimension of social confidence by empathy subdimensions

Predictive Variables	B	Std. E	ß	t	p	Two way r	Partial R
(Fixed)	2.579	.311		8.301	.000		
Emotional transmission	-.219	.113	-.157	-1.942	.053	-.286	-.115
Attention to other's feelings	.211	.133	.102	1.590	.113	-.051	.095
Pro-social	-.351	.137	-.223	-2.569	.011*	-.289	-.152
R=.32 R²=.10	F=10.580		p=.0.00**				
Social Emotional Adjustment Social Confidence = (2.58+.22bul+.21dik)-(-.35pro)							

*p<.05

According to the regression analysis results included in Table 6, the emotional transmission, attention to other's feelings and pro-social behavior subdimensions of empathy had a significant

correlation at low levels with the social confidence subdimension of social emotional adjustment (R=.32, R^2=.10, F=10.580, p<0.01). These three variables together explain 10% of the total variance related to the social confidence subdimension of social emotional adjustment. When t-test results related to significance of regression coefficients is examined, it appears only the pro-social behavior subdimension of empathy was a significant predictor of the social emotional adjustment social confidence subdimension. In this situation, the most important predictor of social emotional adjustment social confidence can be said to be the pro-social behavior subdimension of empathy.

Table 7. Multiple Linear Regression analysis results related to prediction of social emotional adjustment subdimension of school readiness by empathy subdimensions

Predictive Variables	B	Std. E	ß	t	p	Two way r	Partial R
(Fixed)	2.503	.322		7.763	.000		
Emotional transmission	-.223	.117	-.155	-1.906	.058	-.275	-.113
Attention to other's feelings	.260	.138	.121	1.887	.060	-.029	.112
Pro-social	-.358	.142	-.220	-2.525	.012*	-.275	-.149
R=.32 R^2=.10	F=10.315		p=.0.00**				
Social Emotional Adjustment School Readiness = (2.503+-.22bul+.26dik)-(-.36pro+)							

*p<.05

According to the regression analysis results included in Table 7, the emotional transmission, attention to other's feelings and pro-social behavior subdimensions of empathy had a significant correlation at low levels with the school readiness subdimension of social emotional adjustment (R=.32, R^2=.10, F=10.315, p<0.01). These three variables together explain 10% of the total variance related to the school readiness subdimension of social emotional adjustment. When t-test results related to significance of regression coefficients is examined, it appears only the pro-social behavior subdimension of empathy was a significant predictor of the social emotional adjustment school readiness subdimension. In this situation, the most important predictor of social emotional adjustment school readiness can be said to be the pro-social behavior subdimension of empathy.

Table 8. Multiple Linear Regression analysis results related to prediction of social emotional adjustment subdimension of emotional adjustment by empathy subdimensions

Predictive Variables	B	Std. E	ß	t	p	Two-way r	Partial R
(Fixed)	2.145	.292		7.355	.000		
Emotional transmission	-.283	.106	-.216	-2.669	.008**	-.285	-.158
Attention to other's feelings	.302	.124	.155	2.427	.016*	.013	.144
Pro-social	-.240	.128	-.162	-1.869	.063	-.246	-.111
R=.32 R^2=.10	F=10.767		p=.0.00**				
Social Emotional Adjustment Emotional Adjustment = (2.15+-24pro)-(-.28dikkat+.30bulaşma)							

**p<.01; *p<.05

According to the regression analysis results included in Table 8, the emotional transmission, attention to other's feelings and pro-social behavior subdimensions of empathy had a significant correlation at low levels with the emotional adjustment subdimension of social emotional adjustment (R=.32, R^2=.10, F=10.580, p<0.01). These three variables together explain 10% of the total variance related to the emotional adjustment subdimension of social emotional adjustment. When t-test results related to significance of regression coefficients are examined, it appears the emotional transmission and attention to other's feelings subdimensions of empathy were significant predictors of the emotional adjustment subdimension of social emotional adjustment. When beta coefficients are

examined, the most important predictor of the emotional adjustment subdimension of social emotional adjustment can be said to be the emotional transmission subdimension of empathy.

Table 9. T-test analysis results for unrelated measurements of temperament, empathy, and social emotional adjustment subdimensions related to the Gender Factor

		N	$\overline{\text{x}}$	ss	$\text{Sh}_{\overline{\text{x}}}$	t Test		
						t	Sd	p
Temperament-reactivity	Girl	147	2.9040	.75546	.06231	-.739	282	.461
	Boy	137	2.9711	.77511	.06622			
Temperament-persistence	Girl	147	3.4976	.91601	.07555	-.871	282	.384
	Boy	137	3.5881	.82939	.07086			
Temperament-approach	Girl	147	3.7405	.83701	.06904	-.169	282	.866
	Boy	137	3.7570	.80763	.06900			
Temperament-rhythmicity	Girl	147	3.4937	.77550	.06396	-.402	282	.688
	Boy	137	3.5283	.66701	.05699			
Adjustment-family involvement	Girl	147	2.9359	.78695	.06491	.363	282	.717
	Boy	137	2.9016	.80214	.06853			
Adjustment-social confidence	Girl	147	2.8912	.74666	.06158	.657	282	.512
	Boy	137	2.8321	.76674	.06551			
Adjustment-school readiness	Girl	147	2.8722	.75871	.06258	.047	282	.963
	Boy	137	2.8765	.78698	.06724			
Adjustment-emotional	Girl	147	2.8058	.69973	.05771	.564	282	.574
	Boy	137	2.7584	.71877	.06141			
Empathy-emotional transmission	Girl	147	2.1139	.53173	.04386	2.087	282	.038*
	Boy	137	1.9818	.53519	.04572			
Empathy-attention to other's feelings	Girl	147	2.5569	.37675	.03107	1.000	282	.318
	Boy	137	2.5141	.34144	.02917			
Empathy-pro-social behavior	Girl	147	2.3333	.45623	.03763	3.105	282	.002**
	Boy	137	2.1606	.48144	.04113			

**p<.01; *p<0.5

When Table 9 is investigated, there was no statistically significant differences between temperament, empathy, and social emotional adjustment subdimensions in terms of gender, apart from the empathy subdimensions of emotional transmission and pro-social behavior. In line with this, the empathy subdimensions of emotional transmission and pro-social behavior were significantly different in favor of girls (t=3.105; 2.087, p<.05).

DISCUSSION

This research investigated the predictive role of temperament traits and empathy skills of children for social emotional adjustment. According to the results of regression analysis performed to determine the prediction of social emotional adjustment by temperament and empathy, the subdimensions of temperament significantly predicted the social emotional adjustment subdimensions of family involvement, social confidence, readiness for school and emotional adjustment. Persistence was seen to have a positive and low-level correlation with family involvement, social confidence, readiness for school and emotional adjustment. Rhythmicity was observed to have a positive and low-level correlation with family involvement, social confidence, readiness for school and emotional adjustment. Prosocial behavior had a negative and low-level correlation with rhythmicity, family involvement, social confidence, readiness for school and emotional adjustment. Emotional transmission was found to have a negative and low-level correlation with family involvement, social confidence, readiness for school and emotional adjustment. The empathy subdimensions of emotional transmission and pro-social behavior differed significantly in favor of girls. The findings obtained in

some research in the relevant literature are consistent with the findings in this research. Research results related to temperament traits in children in the relevant literatures indicated that temperament traits were affected by emotions, behavior, skills, adjustment and learning of children in other areas (Coplan, Wichman & Lagace-Seguin, 2001; Yoleri & Küçükyeşil, 2014; Zembat, Koçyiğit, Yavuz, & Tunçeli, 2018). Akbaş (2016) in research investigating the correlation between social adjustment skills and temperament traits in preschool children identified that variations in the social adjustment subdimensions and variations in social maladjustment subdimensions were due to changes in the temperament traits of children.

Yoleri (2014) in research investigating the "effects of age, gender and temperament traits on school adjustment in preschool children" identified that the temperament traits of children were correlated with school adjustment and concluded that the reactivity dimension of temperament was a significant predictor of adjustment. The temperament trait of reactivity is encountered as a dimension affecting school adjustment of children. Emotions contained within the reactivity dimension of anger, sadness and shame affect the academic success and adjustment of children (Valiente, Lemery-Chalfant & Swanson 2010). A study by Stoeckli (2010) showed that shy children have low class participation and low school adjustment. For the subdimension of approach, the school adjustment of children severely affected by the situation of being shy was affected by this trait in later years. The researchers reached a consensus that there was a high rate of correlation between temperament traits (low negative effect, high behavior control, low reactivity levels, etc.) with adjustment. Kılıç and Aytar (2017) revealed the correlation between social skills and temperament traits of preschool children with a training program prepared for these children. Akbaş (2016) in research investigating social adjustment and temperament traits of children aged 60 months and older attending preschool educational institutions and found the temperament subdimensions of persistence, approach and reactivity were correlated with social skills scale subdimensions. There are research results showing temperament predicts social behavior in children (Yağmurlu, Sanson, & Köymen, 2015). Bárrig and Alarcón (2017) found a correlation between social skills and temperament traits of Spanish children aged 2-6 years. Pekdoğan and Kanak (2016) investigated the social skills and temperament traits of children aged 4-6 years and concluded social skills were correlated with temperament traits of children.

In this research, social emotional adjustment behavior, temperament traits and empathy skills of children were investigated to see whether they differed according to gender and the empathy subdimensions of emotional transmission and prosocial behavior were revealed to differ significantly according to gender. When the means are investigated, this difference was understood to be in favor of girls in terms of empathy skills. Some research findings in the relevant literature are similar to the findings obtained in this research. Duru (2002) stated there were significant differences in favor of girls for empathic tendencies according to gender. Similarly, Derman (2013) and Dereli and Aypay (2012) stated that gender was effective on empathy skill levels and tendencies. Some research findings in the relevant literature are in parallel with the findings obtained in this study revealing temperament traits differ according to gender (Acar et al., 2018; Zembat, Koçyiğit, Yavuz & Tunçeli 2018; Zembat, Yılmaz & İşçi Küsmüş, 2018; Visu-Petra, Cheie, Câmpan, Scutelnicu & Benga 2018; Erşahin-Şafak, 2016; Rudasil et al., 2016; Aytar, 2014). However, there are studies in the literature showing it does not differ according to gender. For example, Akbaş (2016) in study investigating social adjustment skills and temperament traits in children aged 60 months and older revealed that the reactivity subdimension differed significantly in favor of boys, while the persistence subdimension differed significantly in favor of girls. Mathieson (2011) in research about preschool children stated the temperament traits of boys and girls differed, with family attitudes playing a key role in this differentiation. These findings may be assessed as showing temperament is affected by biological traits, in addition to environmental factors (attitudes to child-raising, culture, etc.).

Studies stating that temperament traits affected by gender were determinant of children's participation in social life, stated that children's gender-based temperament traits differentiate from childhood towards adolescence (Sanson, Kennedy, Matjacic, Reid & Smart,1994). Temperament research identified that reactivity and activity traits were dominant in male children compared to female children (Mullineaux, Deater-Deckard, Petrill,Thompson & Dethome, 2009; Eisenberg, Fabes

& Spinrad, 2006) while persistency traits come to the fore in female children (Liew, Eisenberg & Reiser, 2004).

This research was completed on children aged 60 months attending preschool educational institutions. As temperament is affected by environmental conditions and can be sharpened, though a little, the features of the age group included in the study must be determined considering periods when these effects are less. For research to be performed about temperament, it will be helpful if researchers work with younger age groups with higher effect rates. Additionally, the correlations between temperament, social emotional adjustment and empathy skills can be investigated after applying developmental training programs for social emotional adjustment behavior.

Studies may be performed on a variety of variables in addition to the environmental factors assumed to affect social adjustment skills and temperament traits. It is considered that variables like peer acceptance, emotional regulation skills, parental attitudes, etc. may provide important results in this area. The data obtained in this research may be enriched by assessing the correlations between temperament, empathy, and social emotional adjustment behavior in children with longitudinal research.

REFERENCES

Acar, İ. H. (2013). Predictors of preschool children's peer interactions: temperament and prosocial behavior(Unpublished Master Thesis). University of Nebraska, United States.

Acar, İ. H. & Rudasill, K. M. (2015). Temperament and preschool children's peer interactions. Early Education and Development, 26(4) 479–495.

Acar, İ. H., Torquati, J. C., Encinger, A. & Colgrove, A. (2018). The role of child temperament on low-income preschool children's relationship with their parents and teachers. Infant and Child Development, 27, 1-17. DOI: 10.1002/icd.2045.

Akaydın, D.& Gültekin, G.G. (2016). 6 Yaş grubu çocukların duygusal zeka düzeyleri ile empatik becerileri arasındaki ilişkinin incelenmesi. Uluslararası Sosyal Araştırmalar Dergisi, 9(43), 1353-1360.

Altun Nalbant, A. (2016). Okul öncesi eğitim kurumlarına devam eden 5 yaş çocuklarının mizaç, sosyal yetkinlik özellikleri ile çaba sarf ederek kendini denetleme becerisi arasındaki ilişkinin incelenmesi (Unpublished Master Thesis). Gazi Üniversitesi, Eğitim Bilimleri Enstitüsü, Ankara.

Akbaş, B. (2016). Okul öncesi eğitim kurumuna devam eden 60 ay ve üzeri çocukların sosyal uyum becerileri ile mizaç özellikleri arasındaki ilişkinin incelenmesi (Unpublished Master Thesis). Aksaray Üniversitesi, Sosyal Bilimler Enstitüsü, Aksaray.

Arı, M. &Yaban, H. (2016). Social behavior in preschool children: The role of temperament and emotion regulation. Hacettepe University Journal of Education, 31(1), 125-141.

Aytar, A. G., Aksoy, A. B. & Kaytez, N. (2014). Anne kişiliği ve çocuğun mizaç özelliği. Uşak Üniversitesi Sosyal Bilimler Dergisi, 7(3), 237-251

Bárrig, P. & Alarcón, D. (2017). Temperament and social competence in preschool children from San Juan de Lurigancho: a preliminary study. Liberabit, 23(1), 75-88.

Bee, H. (1995). The developing child. New York: Harper Collins Collage Publishers.

Blair K. A., Denham S.A., Kochanoff A.& Whipple B. (2004). Playing it cool: Temperament, emotion regulation, and social behavior in preschoolers. Journal of School Psychology, 42(6), 419–443.

Burger, J.M. (2006). Kişilik. (İ. D. E. Sarıoğlu). İstanbul: Kaknüs Yayınları.

Buss, A.H.& Plomin, R. (1984). Temperament: Early developing personality traits. Hillsdale, NJ: Erlbaum.

Chess, S.& Thomas, A. (1991). Temperament and the concept of goodness of fit. In J. Strelau& Angleitner (Eds.). Explorations in temperament (15-28). London: Plenum.

Chess, S.& Thomas, A. (1996). Temperament: Theory and practice. New York: Brunner/Mazel.

Coplan, R. J., Wichmann, J. & Lagacé-Séguin, D. G. (2001) Solitary-active play behavior: a marker variable for maladjustment in the preschool? Journal of Research in Childhood Education, 15 (2), 164-172, DOI: 10.1080/02568540109594957.

Cloninger, C.R., Svrakic, D.M. & Przybeck, T.R. (1993). A psychobiological model of temperament and character. Archives of General Psychiatry, 50(12), 975-990.

Dereli, E. & Aypay, A. (2012). Ortaöğretim öğrencilerinin empatik eğilimleri ve işbirliği yapma karakterlerinin insani değerlerini yordaması ve bu özelliklerinin incelenmesi. Kuram ve Uygulamada Eğitim Bilimler Dergisi (KUYEB), Değerler Eğitimi Sempozyumu Ek Özel Sayısı, 12 (2), 1249-1270

Derryberry, D. &Rothbart M.K. (1997). Reactive and effortful processes in the organization of temperament. Development and psychopathology, 9(4), 633-652.

Dinç, M. (2017). Lise öğrencilerinde özgül internet bağımlılığının bağlanma stilleri ve mizaç özellikleri açısından incelenmesi (Unpublished Dissertation). Marmara Üniversitesi, Eğitim Bilimleri Enstitüsü, İstanbul.

Duru, E. (2002). Öğretmen adaylarında kişi-durum yaklaşımı bağlamında yardım etme davranışı eğilimi, empati ve düşünme stilleri ilişkisi ve bu değişkenlerin bazı psikososyal değişkenler açısından incelenmesi (Unpublished Dissertation). Dokuz Eylül Üniversitesi Eğitim Bilimleri Enstitüsü, İzmir.

Eisenberg, N., Fabes, R. A. & Spinrad, T. L. (2006). Prosocial Development. In N. Eisenberg, W. Damon, & R. M. Lerner (Eds.), Handbook of child psychology: Social, emotional, and personality development (pp. 646-718). Hoboken, NJ, US: John Wiley & Sons Inc.

Erşahin-Şafak, N., (2016). Okul öncesi dönemdeki çocukların mizaç özellikleri, alıcı dil ve dikkat becerileri arasındaki ilişkinin incelenmesi (Unpublished Dissertation). Beykent Üniversitesi Sosyal Bilimler Enstitüsü, Ankara.

Eryaman, M.Y. (2008). Teaching as practical philosophy. Saarbrücken, Germany: VDM Verlag Dr. Müller.

Gleason, T.R., Gower, A.L., Gleason, T.C. & Hohmann, L.M. (2005). Temperament and friendship in preschool- aged children. International Journal of Behavioral Development, 29(4), 336-344.

Goldsmith, H. H., Buss, A. H., Plomin, R., Rothbart, M.K., Thomas, A., Chess, S., Hinde, R.A. & McCall, R.B. (1987). Roundtable: What is temperament? four approaches. Child Development, 58, 505-529.

Griggs, M. S., Gagnon, S. G., Huelsman, T. J., Kidder-Ashley, P. & Ballard, M. (2009). Student-teacher relationships matter: moderating influences between temperament and preschool social competence. Psychology in the Schools, 46(6), 553-567.

Kagan, J. & Snidman, N.C. (2004). The long shadow of temperament. Cambridge Mass: Harvard University Press.

Kalaycı, Ş. (2010). SPSS uygulamalı çok değişkenli istatistik teknikleri. Ankara: Asil Yayın Dağıtım

Kaya, Ö. S. & Akgün, E. (2016). Okul öncesi dönemdeki çocukların okula uyum düzeylerinin çeşitli değişkenler açısından incelenmesi. İlköğretim Online, 15(4), 1311-1324.

Kaya, A. & Siyez, D. (2010). KA-Sİ Çocuk ve ergenler için empatik eğilim ölçeği: Geliştirilmesi geçerlilik ve güvenirlik çalışması. Eğitim ve Bilim, 35(156), 110-125.

Kaytez, N. & Durualp, E. (2016). Annelerin kabul-red düzeylerinin çocuğun mizacı ve bazı değişkenler açısından incelenmesi. Akademik Bakış Dergisi(58), 418-431.

Koçak, C. & Önen, A.S. (2013). Öğretmen adayları için empatik yönelimler ölçeği: Geçerlik ve güvenirlik çalışması. Kuram ve Uygulamada Eğitim Bilimleri- Educational Sciences: Theory & Practice, 13(2), 947-964.

Kılıç, K. M. & Güngör Aytar, F. A. (2017). Erken çocuklukta sosyal becerilere sosyal beceri eğitiminin etkisi, sosyal becerilerle mizaç arasındaki ilişki. Eğitim ve Bilim, 42(192), 185-204.

Köknel, Ö. (1999). Kaygıdan mutluluğa kişilik (15. Basım). İstanbul: Altın Kitaplar Yayınevi.

Liew, J. Eisenberg, N. & Reiser, M. (2004). Preschoolers' effortful control and negative emotionality, immediate reactions to disappointment, and quality of social functioning. Journal of Experimental Child Psychology, 89(4),298-319. https://doi.org/10.1016/j.jecp.2004.06.004.

Mathieson, K. H. (2011). Early peer play: the roles of temperament and socio-emotional understanding in young children's social competence (Unpublished Dissertation). University of Sussex, School of Psychology, UK.

Metin-Aslan, Ö. (2014). Çocukları oyunları sırasında gözlemlemek. In A. K. Akyol, & A. B. Aksoy (Eds.), Her yönüyle okul öncesi eğitim içinde, (s. 309-332), Ankara: Hedef Yayıncılık.

McDonald, N. & Messinger, D. S. (January, 2011). The development of empathy: How, when, and why. Retrieved from http://www.cybermanual.com/the-development-of-empathy-how-when-and-why.html.

Mortari, L. (2011). Thinking silently in the woods: listening to children speaking about emotion. European Early Childhood Education Research Journal, 19(3), 345-356, DOI: 10.1080/1350293X.2011.597966.

Mullineaux,P.Y; Deater-Dechard, K.B; Petrill, S.A.; Thompson,L.A. & Dethome L.S. (2009). Temperament in middle childhood: A behavioral genetic analysis of fathers' and mothers' reports. J Res Pers, 43(5): 737–746.

Oren, M. (2009). The relationships between child temperament, teacher-child relationships and teacher-child interactions. International Education Studies, 2(4), 122-133.

Önder, A., Balaban-Dağal, A. & Bayındır, D. (2018). Okul öncesi dönem çocukların mizaç özellikleri ve annelerinin ebeveynlik stillerinin çocukların ego sağlamlık düzeyleri üzerindeki yordayıcı etkisi. Eğitim ve Bilim, 43(193), 79-90.

Özdemir, L. K. &Acarkan, İ. (2010). Çocuklarda mizaç farklılıkları ve kişilik gelişimi. İstanbul: Lika Yayınları.

Parker, A. E., Mathis, E.T. & Kupersmidt, J. B. (2013). How is this child feeling? Preschool-aged children's ability to recognize emotion in faces and body poses. Early Education and Development, 24(2), 188-211, DOI: 10.1080/10409289.2012.657536

Pekdoğan, S. & Kanak, M. (2016). A study on social competence and temperament of pre-school children. Journal of Education and Learning, 5(4), 134-140.

Rieffe,C., Ketelaar, L. & Wiefferink, C.H (2010). Assessing empathy in young children: construction and validation of an empathy questionnaire (EMQUE). Personality and Individual Differences, 49, 362-367

Rothbart, M. K., Ahadi, S. A. & Hershey, K. L. (1994). Temperament and social behavior in childhood. Merrill-Palmer Quarterly, 40(1), 21-39.

Rothbart, M.K., Ahadi, S.A. & Evans, D.E. (2000). Temperament and personality: Origins and outcomes. Journal of Personality and Social Psychology, 78(1), 122–135.

Rothbart M.,K. & Bates J. (1998). Temperament. In W. Damon (Series Ed.) & N. Eisenberg (Vol. Ed.), Handbook of Child Psychology; Social, emotional and personality development. (105-179). New York: Wiley.

Rothbart MK. &Bates JE. (2006) Temperament. In: Damon W, Eisenberg N, (Ed). Social, emotional, and personality development. (99-166). New York, NY: John Wiley & Sons.

Rothbart MK (2011). Becoming who we are: Temperament and personality in development. New York: NY: Guilford Press.

Rudasill, K. M. ve Konold, T. R. (2008). Contributions of children's temperament to teachers' judgments of social competence from kindergarten through second grade. Early Education and Development, 19, 643-666.

Rudasill, K. M., Rimm-Kaufman, S. E. (2009). Teacher-child relationship quality: The roles of child temperament and teacher- child interactions. Early Childhood Research Quarterly, 24, 107–120.

Rudasill, K. M., Hawley, L. Molfese, V. J., Tu, X., Prokasky, A. &Sirota, K. (2016). Temperament and teacher–child conflict in preschool: the moderating roles of classroom instructional and emotional support. Early Education and Development, 27(7), 859-874.

Santi, E. A. (2014). The development of empathy in pre-schooler. Romanian Journal of School Psychology, 7(14), 32-38.

Sanson, A., Kennedy, G., Matjacic, E., Reid, K.& Smart, D. (1994). Children's peer relationships: Associations between peer status, friendship, behavioral adjustment and conflict resolution styles. In K. Oxenberry, K. Rigby, & P. Slee (Eds.), Children's peer relations: Cooperation and conflict (352–367). Adelaide: Institute of Social Research, University of South Australia.,

Shiner, R. L., Buss, K. A., McClowry, S. G., Putnam, S. P., Saudino, K. J. & Zentner, M. (2012). What is temperament now? Assessing progress in temperament research on the twenty-fifth anniversary of Goldsmith et al. Child Development Perspectives. 6(4), 436-444.

Sterry, T. W., Reiter-Purtill, J., Gartstein, M. A., Gerhardt, C. A., Vannatta, K. & Noll, R. B. (2010). Temperament and peer acceptance: The mediating role of social behavior. Merrill-Palmer Quarterly, 56, 189–219.

Stoeckli, G. (2010). The role of individual and social factors in classroom loneliness. The Journal of Educational Research, 103(1), 28-39.

Stocker,C; Dunn,J & Plomin,R. (1989) Sibling relationships: Links with child temperament, maternal behavior, and family structure. Child Development, 60 (3) 715-727.

Şen, B. &Özbey, S. (2017). Okul öncesi dönem çocuklarının duygusal zekâ düzeyleri ile akran ilişkileri arasındaki ilişkinin incelenmesi. Education Sciences (NWSAES), 12(1), 40-57, DOI: 10.12739/NWSA.2017.12.1.1C0668.

Taner Derman, M. (2013). Determining the empathic skill levels of children by their domestic factors. International Journal of Social Science,6 (1) 1365-1382.

Tong, L., Shinohara, R., Sugisawa, Y., Tanaka, E., Yato, Y., Yamakawa, N. & Anme, T. (2012). Early development of empathy in toddlers: Effects of daily parent–child interaction and home-rearing environment. Journal of Applied Social Psychology. 42(10), 2457–2478.

Uyanık Balat, G. & Özdemir Beceren, B. (2014). The preschool behavioral and emotional rating scale for five-year-old children: the study of linguistic equivalence, validity and reliability. The Online Journal of Counseling and Education, 3(3), 14-30

Uysal, D., & Adak Özdemir, A. (2017). Empati Ölçeğinin (1-6 yaş) Türkçeye Uyarlanması: Geçerlilik ve Güvenirlik Çalışması. 4th International Eurasian Educational Research Congress. Pamukkale Üniversity, Denizli.

Van Hecke, A. V., Mundy, P. C., Acra, C. F., Block, J. J., Delgado, E. F., Parlade, M. V., Meyer, J. A., Neal, A. R. & Pomares, Y. B. (2007). Infant joint attention, temperament, and social competence in preschool children. Child Development, 78(1), 53-69.

Valiente, C., Lemery-Chalfant, K.S. & Swanson, J. (2010). Prediction of kindergartners' academic achievement from their effortful control and negative emotionality: Evidence for direct and moderated relations. Journal of Educational Psychology, 102(3), 550-560.

Visu-Petra, L., Cheie, L., Câmpan, M., Scutelnicu, I. & Benga, O. (2018). Identifying early links between temperament, short-term and working memory in preschoolers. Early Chıld Development and Care, 188(1), 32–45.

Walker, S., (2009). Sociometric stability and the behavioral correlates of peer acceptance in early childhood. Peer Acceptance in Early Childhood, 170(4):339-358.

Yağmurlu B. & Kodalak A.,C. (2010). Bağlanma: Çocuk, Ebeveyn ve Etkileşimleri. https://ais.ku.edu.tr/AR/BSELCUK200933__BaglanmaCocukEbeveyn.pdf

Yağmurlu, B. Sanson, A. & Köymen, S.B. (2005). Ebeveynlerin ve çocuk mizacının olumlu sosyal davranış gelişimine etkileri: zihin kuramının belirleyici rolü. Türk Psikoloji Dergisi. 20(55), 1-20.

Yağmurlu, B. & Sanson, A. (2009). Parenting and temperament as predictors of prosocial behavior in Australian and Turkish Australian children. Australian Journal of Psychology, 61(2), 77-88.

Yoleri, S. & Küçükyeşil, G. (2014). Okul öncesi dönem çocuklarının mizaç özellikleri ile dil becerileri arasındaki ilişkinin incelenmesi. Erzincan Üniversitesi Eğitim Fakültesi Dergisi, 16(1), 20-38.

Yoleri, S. (2014). The effects of age, gender, and temperament traits on school adjustment for preschool children. Uluslararası Eğitim Araştırmaları Dergisi, 5(2), 54-66.

Zembat, R., Koçyiğit, S., Akşin-Yavuz, E. & Tunçeli, H. İ. (2018). Çocukların benlik algısı, mizaç ve sosyal becerileri arasındaki ilişkiler. Uluslararası Türkçe Edebiyat Kültür Eğitim Dergisi, 7(1), 548-567.

Zembat, R., Yılmaz, H. & İlçi Küsmez, G. (2017). Okul öncesi dönem çocuklarının mizaç özellikleri ile sosyal becerileri arasındaki ilişkinin incelenmesi. In S. Dinçer (Ed.), Değişen Dünyada Eğitim (44-56). Pegem-A Akademi. DOI: 10.14527/9786052412480.03, 44-56.

Zentner, M. & Bates, J. E. (2008). Child temperament: An integrative review of concepts, research programs, and measures. European Journal of Developmental Science, 2, 7-37.