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School adjustment of first-grade primary school students: Effects of family involvement, externalizing behavior, teacher and peer relations

Selen Demirta -Zorbaz^{a,*} and Tuncay Ergene^b

^aOrdu University, Faculty of Education, Division of Psychological Counseling and Guidance, Ordu, Turkey

^bHacettepe University, Faculty of Education, Division of Psychological Counseling and Guidance, Turkey

Abstract

Adjusting to school contributes to the healthy introduction of all educational activities. For this reason, it is important to determine all facilitating and debilitating factors to the school adjustment process and to develop preventive studies for overcoming school adjustment. The purpose of this study is to determine the factors affecting the school adjustment of first-grade primary school students based on an ecological approach. The study group consisted of 81 teachers and 517 parents. The data were gathered for 517 children aged between 64 months and 98 months from public schools located in the central districts of Ankara in the 2015–2016 academic year. Structural equation modeling was used in the present study. Thus, according to the School Adjustment Model, externalizing behaviors, teacher–student relationship, and peer relations have a significant direct impact on first-grade students' school adjustment, whereas family involvement has no statistically significant direct influence on first-grade students' school adjustment. In addition, externalizing behaviors affect school adjustment through the mediating role of teacher–student relationship and peer relations. Also, the total effect of the externalizing behavior variable on school adjustment is -0.55 . The student-teacher relationship ($B = 0.53$) and peer relationship ($B = 0.48$) variables have also had an effect on school adjustment.

Keywords

School adjustment; School counselling and guidance; Externalizing behaviours; Teacher–student relationships; Peer relations; Family involvement

1. Introduction

School adjustment is one topic that many disciplines related to behavioral science all over the world attach importance to, as adjusting to school is of vital importance in raising

*Corresponding author at: Division of Psychological Counseling and Guidance, Ordu University, Ordu, Turkey, selenpdr@gmail.com (S. Demirta -Zorbaz), ergene@hacettepe.edu.tr (T. Ergene).

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healthy individuals. Research on school adjustment (Donelan-McCall & Dunn, 1997; Duncan et al., 2007; Fergusson & Horwood, 1995; Jiang & Cillessen, 2005; Ladd & Price, 1987) has shown that children who adjust to their school are more likely to succeed in the future and are less likely to face dropout risks, whereas children with school adjustment problems have greater difficulty in their academic and social relationships in later educational stages.

Preschool education is encouraged but not mandatory in the Turkish education system. Therefore, children mostly encounter the “school concept” in primary schools at the age of 6. As in every new situation, children who encounter school for the first time go through an adjustment process. Developing school-related behavior is crucial for school adjustment; following rules and establishing appropriate relationships with peers are developmental tasks that a child must perform (Berk, 2013; Park, 2011). Primary first-grade students are also at the beginning of the initiative versus guilt stage (Berk, 2013) and need to establish healthy relationships with teachers and peers to get through this stage. Also, as Carlson et al. (1999) indicated, early childhood school adjustment has an impact on adolescents’ school adjustment. Thus, it might be critical to determine adjustment problems at early ages in order to prevent later adjustment problems.

School adjustment refers to children’s interest and comfort in the school setting, school engagement, and school achievement (Ladd, 1996). According to Mathur (1999), children’s abilities, skills, adjustment characteristics, and interpersonal environment underlie their school adjustment process. The concept of school adjustment is associated with other aspects of children’s education processes including children’s perceptions of the school environment, school experiences, school engagement, school readiness, and school performance (Birch & Ladd, 1996). For example, school engagement is defined in three dimensions: “behavioral engagement encompasses doing the work and following the rules; emotional engagement includes interest, values, and emotions; and cognitive engagement incorporates motivation, effort, and strategy use” (Fredricks, Blumenfeld, & Paris, 2004, p. 65). In other words, school engagement may involve some of the dimensions of school adjustment but is not limited to them. In the present study, Ladd’s (1996) definition of the school adjustment has been used, and school adjustment was evaluated in four factors: school liking, collaborative participation, self-directedness, and adaptive behavior.

The literature includes several definitions of school adjustment (Birch & Ladd, 1996; Ladd, 1996; Mathur, 1999) but lacks a widely accepted theory or approach to describe school adjustment. A limited volume of research attempting to define school adjustment (Baughan, 2012; Spencer, 1999) has considered this concept based on Bronfenbrenner’s (1979) ecological approach.

Studies on school adjustment often focus on child-related variables such as gender and behavior problems, children’s relationships with family, peers, and teachers, or family involvement. Such studies combine a few variables such as child and family or child and school; however, they do not include, from a holistic point of view, all systems that can affect a child. Considering that school adjustment is a multi-dimensional structure that affects both children and their environment, it seems to be insufficient to discuss this

phenomenon from a single perspective. Thus, the present study discusses factors affecting school adjustment based on the dimensions of the ecological approach, including individual, microsystem, and mesosystem (Bronfenbrenner, 1979).

1.1. Individual level

Externalizing behavior is one variable that influences children's school adjustment within the scope of the individual level. Externalizing behavior problems has been proven to predict children's school adjustment (Stormshak & Bierman, 1998). Considering that primary school children, frequently and intensely, have feelings such as anger, jealousy, and aggression (Akboy, 2000), as well as the fact that negative emotionality, which is correlated with externalizing behavior (Eisenberg et al., 2000), has an adverse effect on school adjustment (Al-Hendawi, 2013; Nelson, Martin, Hodge, Havill, & Kamphaus, 1999), how teachers cope with this issue and how it influences children's school adjustment should be taken into account to promote children's successful adjustment to school.

Externalizing behavior problems refers to rule-breaking, aggression, hyperactivity, and impulsivity (Achenbach, 1991). Several studies have revealed that these behaviors have a negative effect on children's school adjustment (e.g., Carbonneau, Boivin, Brendgen, Nagin, & Tremblay, 2016; Kawabata, Tseng, & Gau, 2012; Kupersmidt & Coie, 1990; Ladd & Burgess, 2001). Considering the effects of behavior problems on the school adjustment of first-grade primary school students, externalizing behaviors are the most investigated behaviors. Thus, externalization is a critical factor affecting school adjustment.

1.2. Microsystem level

Considering the microsystem level of the ecological approach, student-peer and student-teacher relationships are among the variables that may affect school adjustment. After their parents, children first build a relationship with teachers from 5 to 6 years of age. According to Wentzel (2009), the quality of the relationship with teachers promotes students' well-being, positive self-perception, motivation in adjusting to social and academic conditions, and related skills. Classroom interactions between teachers and students are the main process of the ecological model for child development (Bronfenbrenner, 2005) and have a considerable effect on the formation of children's behavioral and social adjustment (Griggs, Gagnon, Huelsman, Kidder-Ashley, & Ballard, 2009). Indeed, a great volume of research has reported the effect of student-teacher relationship on school adjustment (e.g., Baker, 2006; Baker, Grant, & Morlock, 2008; Birch & Ladd, 1997; Cadima, Doumen, Verschueren, & Buyse, 2015; Furrer & Skinner, 2003; Huang, 2010; Hughes, Wu, Kwok, Villarreal, & Johnson, 2012; Kiuru et al., 2016; Murray, Waas, & Murray, 2008; Omae, 2010; Pianta & Stuhlman, 2004; Roorda, Verschueren, Vancraeyveldt, Van Craeyveldt, & Colpin, 2014; Troop-Gordon & Kuntz, 2013).

In addition to student-teacher relationship, children's relationship with their peers also has a role in school adjustment. Petriwskyj, Thorpe, and Tayler (2005) suggested that friendship is of a critical importance for school adjustment and social interactions. When children start school, they spend most of their energy on peer relations (Danby, Thompson, Theobald, & Thorpe, 2012). As peers are among the main constituents of the socialization process of

children who grow away from their family environment at the beginning of school life, peers also influence school adjustment.

Berndt (1999) highlighted the fact that friends' characteristics can have negative or positive effects on children's school adjustment. Children's successful integration into their social environment and their feelings of being loved by peers are among the prerequisites for school adjustment (Wentzel, 1999). Studies on the association between school adjustment and peer relationships have reported the positive effect of good peer relationships on school adjustment (Boulton, Don, & Boulton, 2011; Diehl, Lemerise, Caverly, Ramsay, & Roberts, 1998; Ladd, 1990; Ogelman & ve Erten, 2013) and the negative effect of unhealthy peer relationships on school adjustment (e.g., Buhs, 2005; Buhs & Ladd, 2001; Buhs, Ladd, & Herald, 2006; Ladd, Kochenderfer, & Coleman, 1996; Loukas, Ripperger-Suhler, & Herrera, 2012; Maniago, 2010).

1.3. Mesosystem level

Considering the mesosystem dimension of the ecological system, the present study investigates the family involvement thought to affect school adjustment. Family involvement refers to parents' involvement in their children's education life, as well as the activities and behaviors related to the academic, social, and behavioral outcomes of children at risk of low achievement (Sheldon & Epstein, 2005). Systematic family involvement activities play a decisive role in raising parental awareness of appropriate family attitudes, establishing relationships and inter-acting with children, and facilitating children's life adjustment. With respect to family influences on school adjustment, Wentzel (1999) noted that parents should be actively involved in their children's educational activities to promote their cognitive development and academic achievement. A considerable volume of research has also reported the effect of family involvement on children's school adjustment (e.g., Allen & Daly, 2002; Barnard, 2004; Baughan, 2012; çelenk, 2003; Izzo, Weissberg, Kasprow, & Fendrich, 1999; Kotaman, 2008; Lau, 2014; McGill, Hughes, Alicea, & Way, 2012; Miedel & Reynolds, 1999; Özcan & ve Aydo an, 2014).

1.4. The present study

The review of studies on school adjustment has shown that in addition to children's own characteristics, the characteristics of other systems that children interact with, such as family and school, also influence school adjustment. The present study includes variables that can be changed by psychological counseling and guidance practices while also excluding unchangeable variables such as sex and race. Accordingly, the study investigates externalizing behavior for the individual dimension and family involvement for the mesosystem dimension. There are three major systems that primary school students interact with, including family, teacher, and peer. This paper investigates student-peer and student-teacher relationships; however, the family system is not the concern of this paper. As noted by Bronfenbrenner (1994), research mostly focuses on parents but over-looks children's major development settings such as classroom and school. Under this perspective, this study discusses school adjustment based on the microsystem dimension and focuses on children's relationships in school (teacher and peer).

Literature review has also shown an association between externalization and student-peer and student-teacher relationships (e.g., Baker, 2006; Baker et al., 2008; Collins, O'Connor, & Supplee, 2016; Coplan, Liu, Cao, Chen, & Li, 2016; Eisenhower, Blacher, & Bush, 2015; Henricsson & Rydell, 2006; Powers & Bierman, 2013; Silver, Measelle, Armstrong, & Essex, 2005; Yang, Chen, & Wang, 2014). Accordingly, it seems that externalization can predict school adjustment through student-peer and student-teacher relationships. Thus, the present study also attempts to test the mediating role of student-peer and student-teacher relationships. To this end, this study tests the following hypotheses using the theoretical model in Fig. 1.

1. Externalizing behavior significantly influences school adjustment.
2. Student-teacher relationships significantly influence school adjustment.
3. Peer relationships significantly influence school adjustment.
4. Family involvement significantly influences school adjustment.
5. Student-teacher relationship will significantly mediate the relation between family involvement and school adjustment
6. Student-teacher relationship will significantly mediate the relation between externalizing behavior and school adjustment.
7. Peer relationships will significantly mediate the relation between externalizing behavior and school adjustment.

2. Method

2.1. Study group

81 teachers for 599 students from 30 schools volunteered to participate in the present study. Data were eliminated according to the study criteria, such as unvolunteered parents or those who had not filled out all items on the scales. Finally, this study surveyed 81 teachers and 517 parents for a total of 517 students with a consent rate of 89%. Tabachnick and Fidell (2015) suggested $N > 50 + 8m$ (m is the number of independent variables) for multivariate correlation analysis. Considering that this study involves four independent variables (externalizing behavior, student-teacher relationship, peer relationship, and family involvement), it has a suitable sample size to test the model.

Among the teachers participating in the study, 62 (76%) are women and 19 (24%) are men. 69 teachers (85.6%) are married and 12 (14.4%) are single. Teachers' time of service in the primary school ranges from 2 to 35 years, and the mean time of service is 17 years. Among the parents participating in the study, 433 (84.4%) are women and 84 (15.6%) are men. 493 parents (96.8%) are married and 24 (3.2%) are single. 196 parents (37.5%) work and 321 (62.5%) do not work. Among the students participating in the study, 284 (54.6%) are girls and 233 (45.4%) are boys. Students' age changes between 64 months and 98 months (mean = 76). Also, 438 (84.7%) students received preschool education and 79 (15.3%) did not receive preschool education.

2.2. Data collection tools

2.2.1 School adjustment—The indicators of the latent variable of school adjustment include school liking, collaborative participation, self-directedness, and adaptive behavior. The first three variable indicators were measured through the Teacher Rating Scale of School Adjustment (TRSSA), and adaptive behavior was measured using the Teacher Report Form (TRF) (Achenbach, 1991).

The TRSSA was adapted to Turkish by Önder and Gülay (2010). The construct validity of the scale was measured to test its validity. The Cronbach's alpha and test-retest reliability coefficients were measured to test its reliability. The Cronbach's alpha reliability coefficient was 0.70 for the total adapted scale. According to the test-retest reliability results, the 2-week interim correlation was $r = 0.97$.

The TRF was adapted to Turkish by Erol and İmrek (2010). Cronbach's alpha reliability coefficients were 0.86 for the adaptive subscale and 0.89 for the externalizing subscale. The test-retest reliability was found to be 0.92 for the adaptive subscale and 0.83 for the externalizing subscale.

2.2.2 Family involvement—The indicators of the latent variable family involvement include home-based involvement, school-based involvement, and home-school conferencing. These indicators were measured through the Family Involvement Questionnaire (FIQ) (Fantuzzo, Tighe, & Childs, 2000). The questionnaire was adapted to Turkish by İker (2009). The Cronbach's alpha reliability coefficients for the three dimensions were .85, 0.85, and 0.81, respectively. The Turkish adaptation study carried out the principal component analysis (PCA) to disclose the factor structure of the FIQ. Accordingly, three factors with eigenvalue ≥ 1 accounted for 46% of the total variance.

2.2.3 Externalizing behavior—The latent variable externalizing behavior has two indicators, including rule-breaking behavior and aggressive behavior. These indicators were measured through the Child Behavior Checklist for Ages 6–18 (Achenbach & Rescorla, 2001). The 2001 Child Behavior Checklist for Ages 6–18 (CBCL/6–18) was adapted to Turkish by Erol and İmrek (2010). Confirmatory factor analysis, content validity, and criterion validity were used to test the validity of CBCL/6–18. The test-retest reliability was found to be 0.93 for the externalizing subscale. Cronbach's alpha reliability coefficients were 0.90 for the externalizing subscale.

2.2.4 Student-teacher relationships—This latent variable has three indicators, including conflict and closeness dimensions of the Student-Teacher Relationship Scale (STRS) (Pianta, 2001) and a teacher's self-report to assess his or her relationship with a target student in a personal information form. The STRS was adapted to Turkish by Demirta -Zorbaz, Özer, Gengtaninm, and Ergene (2016). The validity of the scale was measured using confirmatory and exploratory factor analysis. Accordingly, the STRS was found to have two factors and 23 items. Cronbach's alpha reliability coefficients were 0.83 for the closeness subscale and 0.86 for the conflict subscale.

2.2.5 Peer relationships—The indicators of the latent variable peer relationships include Asocial with Peers and Excluded by Peers subscales of the Child Behavior Scale (CBS) (Ladd & Profilet, 1996). The CBS was adapted to Turkish by Ergene, Demirta - Zorbaz, Kurt, and Ozer (2018). Confirmatory factor analysis was used to measure the validity of the scale. Cronbach's alpha reliability coefficients were 0.86 for Asocial with Peers subscale and 0.92 for Excluded by Peers subscale.

2.3 Data collection

First of all, necessary permits were obtained from the Ministry of National Education and the Ethics Commission of Hacettepe University in order to carry out the survey in schools. The list of primary schools in Ankara was obtained from the Ministry of National Education, and 43 schools were randomly selected for the presentation of eight districts of Ankara. The scales and informed consent forms used in the study were divided into two groups and filed separately: one to be filled out by teachers and the other to be filled out by parents. These files were placed in an envelope and prepared as a separate envelope for each student. Schools in which the survey would be carried out were called by phone, and the school administration was asked for an appointment. Thirty principals of the 43 schools agreed to support the study. After permission from the school administration was granted, first-grade primary school teachers were interviewed and given a brief workshop about the study's purpose and how to observe the child and fill out the forms. After that, teachers were given five to ten envelopes depending on the number of students in their classroom. After taking the parent's oral consent, teachers filled out the scales separately for each randomly selected child, and then they sent the relevant envelopes to students' parents for them to fill out. One week after the scales were distributed, schools were and the scales filled by teachers and parents were received. The students whose parents were filled the informed consent forms were included in to the study.

2.4 Data analysis

Strutturai equation modeling (SEM) is used to test whether networks of constructs are validated by the data (im ek, 2007). In other words, SEM indicates whether a research question is answered by collected data (Kline, 2005). Thus, a structural equation model was designed and tested to determine the correlations between the variables affecting school adjustment. The skewness and kurtosis coefficients were assessed to determine whether the data followed a normal distribution; they were found to be within the acceptable range (Tabachnick & Fidell, 2015).

According to Tabachnick and Fidell (2015), root mean square error of approximation (RMSEA) and comparative fit index (CFI) are among the most widely used fit indices in SEM. Schermelleh-Engel, Moosbrugger, and Miiller (2003) argued that the ratio of chi-square, divided by the degrees of freedom (χ^2/df) and CFI, are important and that RMSEA and Standardized Root Mean Residuai (SRMR) must also be computed wherever the sample size is > 250. Accordingly, the present study computed RMSEA, CFI, SRMR, and χ^2/df .

3. Results

The study first computed the Pearson correlation coefficients of the variable indicators. The values are shown in Table 1.

As seen in Table 1, the correlation coefficients of the variables in the model range from 0.00 to 0.69. The correlation coefficients between the indicators of the latent variable school adjustment range from 0.37 to 0.58, those of the latent variable family involvement range from 0.44 to 0.57, and the correlation coefficient between the indicators of the latent variable externalizing behavior is 0.69. The correlation coefficients between the indicators of the latent variable student-teacher relationships range from -0.27 to -0.42 and the correlation coefficient between the indicators of the latent variable peer relationships is 0.49. All correlation coefficients are significant at the significance level of 0.001 with respect to other indicators of their respective latent variables. Table 2 presents the descriptive statistics of the indicator variables.

Given Table 2, the minimum and maximum values of the indicator variables range from 0.02 to 100 and the standard deviations range from 0.083 to 15.960. The Cronbach's Alpha coefficients range from 0.50 to 0.90. The cut-off value for the Cronbach's Alpha coefficient is generally considered 0.70; however, there are studies that accept a Cronbach's Alpha coefficient < 0.70 (Wainer & Thissen, 2001 as cited in Downing, 2004). Schmitt (1996) argues that setting up a cut-off value for the Cronbach's Alpha coefficient is disputable and if a scale is rationally sized, then a low Cronbach's alpha number is acceptable.

First, the measurement model was tested to determine the extent to which the indicator variables in the model represent the corresponding latent variables and the correlations between the latent variables. The statistical significance of the fit coefficient for the independence model ($\chi^2 = 2240.03$ $p < .000$) indicates that the variance-covariance matrix derived from the data set is fit for testing and that there is a sufficient correlation between the variables. Considering the fit coefficients of the measurement model, it seems that the latent variables in the model are sufficiently represented by the indicator variables ($\chi^2 = 209.95$; $df = 67$; $p < .000$; CFI = 0.93; RMSEA = 0.06 (0.05–0.07)).

As the next step of the data analysis, the structural model was tested to determine the direction of correlations between the latent variables. Error covariances were added between the exogenous variables (family involvement and externalizing behavior) and mediator variables (student-teacher relationships and peer relationships). These covariances imply that there are also correlations between the latent variables other than the dependent variable school adjustment. One unit increase in the externalizing behavior variable leads to a decrease of 0.19 ($\beta = -0.13$) in school adjustment scores ($z = -2.84$; $p < .05$). Similarly, one unit increase in the peer relationships variable also leads to a decrease of 0.46 ($\beta = -0.26$) in school adjustment scores ($z = -3.90$; $p < .0001$). However, one unit increase in the student-teacher relationships variable leads to an increase of 0.53 ($\beta = 0.68$) in school adjustment scores ($z = 8.21$; $p < .00$). One unit increase in the family involvement variable leads to a decrease of 0.04 ($\beta = 0.06$) in school adjustment scores. However, this result is statistically non-significant ($z = -1.38$; $p > .05$). Additionally, the correlation between family

involvement and student-teacher relationships is also statistically non-significant ($z = -1.76$; $p > .05$). At this stage, the effect of the non-significant predictors of school adjustment in the hypothesis model was equalized to zero to create alternative models. Thus, through the exclusion of non-significant variables from the model, the study analyzed the changes in the goodness of fit level of the model and the correlations between the remaining variables and school adjustment. Table 3 shows the fit indices for the hypothesis and alternative models.

According to Table 3, when the correlation between family involvement and school adjustment and the correlation between family involvement and teacher relationships were equalized to zero, it resulted in a significant deterioration of the model fit. The Chi-square difference test results (χ^2) were 1.90 and 3.80, respectively ($p > .05$). Thus, the alternative model B was adopted as the final model (Fig. 2).

Given Fig. 2, one unit increase in the externalizing behavior variable leads to a decrease of 0.18 ($\beta = -0.12$) in school adjustment scores ($z = -2.847$; $p < .05$). Similarly, one unit increase in the peer relationships variable also leads to a decrease of .48 ($\beta = -0.27$) in school adjustment scores ($z = -3.90$; $p < .00$). However, one unit increase in the student-teacher relationship variable leads to an increase of .53 ($\beta = 0.67$) in school adjustment scores ($z = 8.21$; $p < .00$). These results confirmed the hypotheses “externalizing behavior significantly influences school adjustment”, “peer relationships significantly influence school adjustment, and “student-teacher relationships significantly influence school adjustment”. However, the hypothesis “family involvement significantly influences school adjustment” was rejected.

In addition to the variables directly influencing school adjustment, the present study also investigates variables that may indirectly influence school adjustment. For this purpose, it considers student-teacher relationships and peer relationship as mediator variables. The Bootstrap test was used to analyze the significance of the indirect effects of these mediator variables and the results have shown at the Table 4.

As seen from the Table 4, the variable peer relationship variable has a partial mediating role in the correlation between externalizing behavior and school adjustment. In a similar vein, the student-teacher relationship variable also has a partial mediating role in the correlation between externalizing behavior and school adjustment. Thus, these results confirmed the hypotheses “the mediating role of the peer relationship variable is statistically significant in the correlation between externalizing behavior and school adjustment”, and “the mediating role of the student-teacher relationship variable is statistically significant in the correlation between externalizing behavior and school adjustment”. Accordingly, the total mediating effect of externalizing behavior on school adjustment is -0.37 . In other words, one unit increase in the externalizing behavior variable indirectly leads to a decrease of -0.37 in school adjustment scores. As the correlation between family involvement and student-teacher relationship and ($z = -1.76$; $p > .05$) and school adjustment ($z = -1.38$; $p > .05$) is statistically non-significant, the hypothesis “the mediating role of the student-teacher relationship variable is statistically significant in the correlation between family involvement and school adjustment” was rejected.

The total effect of a predictor on the criterion variable is the sum of the direct and indirect effects (Kline, 2005). The total effect of the externalizing behavior variable on school adjustment is -0.55 . The student-teacher relationship ($B = 0.53$) and peer relationship ($B = 0.48$) variables have also an effect on school adjustment. Based on the comparison of the predictive effects using standard weights, it seems that the effect of externalizing behavior on school adjustment outweighs the effects of student-teacher relationships and peer relationships.

4. Discussion

The present study has determined that first-grade primary school students' externalizing behaviors and relationships with their teachers and peers influence their school adjustment, whereas there was no significant correlation between their family involvement and school adjustment.

The effect of externalization on school adjustment has been proven by research results (Buhs, Rudasill, Kalutskaya, & Griesse, 2015; Kawabata et al., 2012; Kupersmidt & Coie, 1990; Ladd & Burgess, 2001). However, Duncan et al. (2007) did not find significant correlation between the academic performance dimension of school adjustment and externalizing behavior problems. This result may stem from the fact that academic performance is a multidimensional concept and predicted by variables that directly affect cognitive performance, such as general aptitude, beyond a child's behavioral problems. This study considers school adjustment as school liking, collaborative participation, self-directedness, and adaptive behavior, as well as focuses primarily on social, emotional, and behavioral adjustment rather than academic performance. Thus, the results of the present study do not comply with those of Duncan et al. (2007).

This study attempts to explain externalizing behavior problems in two dimensions, including rule-breaking behavior and aggressive behavior. School is a structured environment with its own rules that expects students to follow them. As noted by Akboy (2000), a primary school child wants to be independent and can get angry when he or she is inhibited, which is considered normal behavior for primary school students. Children with externalizing behavior problems are more likely to exhibit such behaviors when confronted with school's restricted environment. Then, school can become an obstacle for children, and they may feel more intense anger. Children with negative feelings are less likely to like school and participate in school activities; thus, they have severe difficulty adjusting to school. When children are punished for their unacceptable school behaviors, they may refuse to go to school.

Externalizing behavior influences school adjustment through student-teacher relationships. In other words, children with externalizing behaviors and poor and/or conflicting relationships with their teachers have a lower level of school adjustment. Several studies have revealed that externalizing behavior problems also influence student-teacher relationships (Baker, 2006; Baker et al., 2008; Collins et al., 2016; Eisenhower et al., 2015; Skalicka, Belsky, Stenseng, & Wichstrom, 2015; Silver et al., 2005). It is not surprising that children with externalizing behavior problems have difficulty establishing relationships with

people they meet for the first time in a new entrant setting. In particular, teachers may assume a rule-making role, as they are considered a figure of authority in the classroom; thus, students may direct their anger and frustration toward teachers.

From another perspective, an intimate student-teacher relationship can be seen as a protective factor in the school adjustment of children with behavior problems. Ladd and Burgess (2001) suggested that children building a healthy relationship with peers and teachers can have a high level of school adjustment, even if they have behavior problems. Baker (2006) pointed out that students with developmental problems are more advantageous if they establish close relationships with their teachers, compared to their peers who do not have such a relationship. To put it differently, if a child establishes a close relationship with his or her teacher despite externalizing behavior problems, his or her school adjustment may not be adversely affected. Thus, the nature of student-teacher relationship can be a decisive factor in facilitating children's adjustment.

The variable of externalizing behavior also influences school adjustment through peer relationships. Children with externalizing behavior problems and poor peer relationships have a low level of school adjustment. The result of the present study is consistent with research claiming there is a correlation between externalizing behavior and peer relationships (Coplan et al., 2016; Henricsson & Rydell, 2006; Powers & Bierman, 2013; Yang et al., 2014).

The dimensions of peer relations studied in this paper include Asocial with Peers and Excluded by Peers. Children with externalizing behavior problems such as aggression and rule-breaking can be excluded by peers and may feel alone in the school setting; conversely, children excluded by peers might develop externalizing behavior problems (Reijntjes et al., 2011). Children excluded by peers might be unable to participate in school activities and games; thus the school may become a setting in which they are left alone and experience conflict. Similarly, Buhs et al. (2006) stated that early peer rejection was negatively correlated with classroom participation. However, if a child establishes healthy relationships with peers despite externalizing behavior problems, he or she may be more likely to adjust to school.

The present study has also found that student-teacher relationships have a positive effect on school adjustment. Children with good relationships with their teachers have a higher level of school adjustment. This result is consistent with previous research (Baker, 2006; Baker et al., 2008; Birch & Ladd, 1997; Cadima et al., 2015; Coplan et al., 2016; Furrer & Skinner, 2003; Huang, 2010; Hughes et al., 2012; Kiuru et al., 2016; Murray et al., 2008; Omae, 2010; Pianta & Stuhlman, 2004; Roorda et al., 2014; Troop-Gordon & Kuntz, 2013; Wentzel, 2002).

Teachers are among adults with whom children have the closest relationship after their parents. According to Wentzel (2009), the quality of student-teacher relationship fosters students' well-being, positive self-perception, motivation in adjusting to social and academic conditions, and related skills. Thus, it is an expected result that student-teacher relationship has a positive effect on school adjustment.

Teachers are also individuals that children first meet in the school and who introduce the school environment to the children. Pomeroy (1999) suggested that student-teacher relationship plays a key role in the networks of school communication. A positive student-teacher relationship also facilitates students' positive attitudes toward school (ipek & Terzi, 2010). Thus, a child's relationship with his or her teacher can play a decisive role in his or her perception of school. Student-teacher relationships and teachers' role model behaviors have a direct effect on students' school behaviors and adjustment.

Metaphoring studies in Turkey showed that primary school students view teachers as a parent and the school as a home (Ate , 2016; Santa & Celik, 2013). Gündüz (2014) also indicated that when asked what effective teacher behaviors are, students describe teachers' personality characteristics such as being nice or kind rather than professional characteristics. In other words, Turkish children might want their teachers to act like a parent who is caregiving and loving, and when such intimate relationships are established, their school adjustment levels might increase.

Another result of this study is the negative effect of poor peer relationships on school adjustment. Accordingly, children asocial with peers and excluded by peers have a low level of school adjustment. This result is supported by previous research indicating that healthy peer relationships promote school adjustment (Boulton et al., 2011; Diehl et al., 1998; Ladd, 1990; Ogelman & ve Erten, 2013). Unhealthy peer relationships have a negative effect on school adjustment and may lead to disorders such as school refusai (Buhs, 2005; Buhs et al., 2006; Buhs & Ladd, 2001; Ladd et al., 1996; Loukas et al., 2012; Maniago, 2010; Ogelman & ve Erten, 2013; Troop-Gordon & Kuntz, 2013).

Ladd (1990) argued that children's interpersonal relationships and social status can influence school adjustment, as the classroom is composed of peer groups. Children's social status in the classroom can affect their school liking, participation in activities, and self-directedness. Wentzel (1999) suggested that children's successful integration into their social environment and being liked by peers are among the prerequisites for school adjustment. Children liked and considered popular by peers enjoy going to school and are more likely to participate in school activities. Thus, children are able to cope with the process of school adjustment more efficiently and rapidly.

Based on the ecological system approach, children are not only affected by their individual characteristics but also by their immediate surroundings, as well as by the interactions between various items in their surrounding and the distant surroundings they do not directly belong to (Atzaba-Poria, Pike, & Deater-Deckard, 2004). Thus, it is not surprising that school adjustment is affected by externalizing behaviors discussed as individual characteristics in this study and by peers and teachers in children's immediate surroundings.

The final result of the present study is that the family involvement variable has neither direct nor indirect effect on school adjustment. This result does not comply with those of previous studies (Allen & Daly, 2002; Barnard, 2004; Baughan, 2012; çelenk, 2003; Izzo et al., 1999; Kotaman, 2008; Lau, 2014; McGill et al., 2012; Miedel & Reynolds, 1999; Özcan & ve Aydo an, 2014). This result may stem from the fact that the surveys were carried out 2

months after the schools had opened and that the families had not yet had fundamental interactions with the school and/or teachers. This situation can be considered a limitation of the study.

Considering that the mean involvement scores in three dimensions of the FIQ were calculated as 3.60 for SBI, 4.07 for HBI, and 3.49 for HSC, the surveyed parents' involvement in their children's school life is mostly home-based. In Turkey, family involvement in schools often occurs through parent meetings, information meetings, and individual interviews (çaltık & ve Kandir, 2006; ahin & Turla, 2003). A parent meeting might not have been held at the beginning of the schools; in particular, families of children who have not received preschool education and who have just experienced the school for the first time may not know how to communicate with teachers. Additionally, the items of the FIQ measuring family involvement are associated with a variety of behaviors that can be developed within a certain period of time after schools are opened, such as "participation in activities" and "helping organize activities." Also, parent involvement is usually meant to mediate an activity rather than a group of activities. Goodall and Montgomery (2014) stated that "parental engagement will involve a greater commitment, a greater ownership of action, than will parental involvement with schools" (p. 400), and that family engagement can produce better results for students (Ferlazzo, 2011). Therefore, assessing parent involvement and not parent engagement might be another limitation of the study.

Research on family involvement has indicated that family involvement mostly influences the academic performance dimension of school adjustment (Barnard, 2004; çelenk, 2003; Izzo et al., 1999; Kotaman, 2008; Lau, 2014; McGill et al., 2012; Miedel & Reynolds, 1999; Özcan & ve Aydo an, 2014). Accordingly, family involvement affects children's academic performance. As this study surveyed first-grade primary school students, they might not have demonstrated their academic performance and their own characteristics in the classroom environment. Additionally, as students had not yet started to study reading and writing at the stage of data collection in the study, their academic performance is not yet observable. However, Barnard (2004) argued that family involvement may have an effect on school adjustment in the long run. Thus, it seems that the effects of family involvement on children may not yet be reflected in this cross-sectional study.

When examining the total effects, it can be said that externalizing behavior on school adjustment outweighs the effects of student-teacher relationships and peer relationships. According to the ecological system approach, a child continues to develop in the social environment of a school by influencing and being influenced by the factors in his or her phenomenological area (Ashman & Hull, 1999; Bronfenbrenner, 1979). Thus, a child's externalizing behavior characteristics influence his or her relationships with peers and teachers that, in return, can influence his or her externalizing behavior characteristics. Children with externalizing behavior problems may have a low level of school adjustment; however, school adjustment can be fostered if they build healthy relationships with teachers and/or peers. Therefore, externalizing behavior that is a variable in the individual system may have more influence on school adjustment than teachers and peers who are in the child's microsystem.

5. Conclusions

Seven hypotheses were tested in the present study, and five of them were confirmed. Therefore, it can be said that externalizing behavior, student-teacher relationships, and peer relationships have a significant relation with first grade primary school students' school adjustment. In addition, externalizing behavior has a mediating role between student-teacher relationship and school adjustment, as well as between peer relations and school adjustment.

Considering that externalizing behaviors have the most significant effect on school adjustment, the process of school adjustment can be facilitated when parents are aware of their children's externalizing behavior problems and receive support from a mental health professional to make necessary interventions before they start school. For this purpose, parents can collaborate with the mental health professional working in their children's preschool education institution. Parents who lack access to preschool education can refer to a specialist in state hospitals or in the primary school guidance service that their child will attend.

Rule-breaking and aggressive behaviors were defined as an externalizing behavior problem in the present study. To decrease such behaviors' effect on school adjustment, children should be taught to obey rules at an early age by their parents, and children lacking this skill are more likely to have school adjustment problems. Thus, parents should be given training for rule-making, boundary-drawing, and anger-control skills, and preschool education should aim to develop these skills. Also, these skills may have a positive effect on peer relations. Given the protective role of student-teacher and peer relationships in school adjustment, parents can be advised to raise their children's awareness of social skills that facilitate establishing relationships before they start school.

Another outstanding finding of the study was the direct relationships between student-teacher relationship and school adjustment. Structured orientation programs that teachers are more actively involved in can be developed during the first weeks of primary schools, and events can be organized to foster teacher-student communication. Also, attention should be paid to teachers' relationships with children with behavior problems, and such children can be guided to build peer relationships in the classroom. School counselors can also educate the classroom teachers on externalizing behavior problems and how to handle them.

6. Limitations

Despite the important contributions of the present study noted above, it has a few limitations. Firstly, it should be noted that the study participants consisted of teachers and parents who live in the capital city of Turkey. Therefore, this limitation should be considered when interpreting the findings, and the study findings cannot be representative of other samples, such as different cultures. Secondly, this study assesses parent involvement rather than parent engagement, and it cannot be said that parent-school collaboration does not have an effect on school adjustment. When considering that family engagement can produce better results for students (Ferlazzo, 2011), the model can be retested using parent engagement. Thirdly, no social desirability scales were used in this study to control social desirability

bias. When the noted teacher ratings could be biased (Kehle, Bramble, & Mason, 1974; Rong, 1996), one must consider that the present study's result should be affected by the participants' biased response. Lastly, in the current study, all scales used to assess student's various features were filled out by teachers and parents in the child's microsystem. Future studies may benefit from collecting data from students themselves and their peers.

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Fig. 1.

Theoretical model for the prediction of primary school first-grade students' school.

Fig.2.

Alternative Model B: Non-standardized Regression Weights.

Table 1

Correlations (Pearson Correlation Coefficients) between the Variables in the Model (Indicator Variables).

No	Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1	SA-SL	1													
2	SA-CP	0.58**	1												
3	SA-SD	0.37**	0.48**	1											
4	TRF-AB	0.42**	0.49**	0.37**	1										
5	FI-SBI	0.09*	0.12**	0.10*	0.04	1									
6	FI-HBI	0.09*	0.01	0.00	0.01	0.44**	1								
7	FI-HSC	-0.00	-0.05	0.00	-0.05	0.50**	0.57**	1							
8	EB-RBB	-0.20**	-0.27**	-0.06	-0.16**	-0.05	-0.12**	-0.01	1						
9	EB-AB	-0.23**	-0.31**	-0.08*	-0.21*	-0.04	-0.15**	-0.02	0.69**	1					
10	TR-Cl.	0.31**	0.45**	0.24**	0.43**	0.08*	0.08*	0.05	-0.12**	-0.17**	1				
11	TR-Co.	-0.38**	-0.40**	-0.12**	-0.30**	0.00	-0.05	-0.00	0.16**	0.16**	-0.42**	1			
12	TR-TSR	0.36**	0.47**	0.26**	0.26**	0.10**	0.03	0.04	-0.15**	-0.10*	0.36*	-0.27**	1		
13	PR-A	-0.37**	-0.29**	-0.21**	-0.32**	0.03	-0.03	0.00	0.04	0.05	-0.19**	0.18**	-0.13**	1	
14	PR-E	-0.36**	-0.45**	-0.12**	-0.33**	-0.00	-0.02	0.07	0.18**	0.18**	-0.25**	0.32**	-0.21*	0.49**	1

SA-SL: School Adjustment-School Liking; SA-CP: School Adjustment-Collaborative Participation; OU-SD: School Adjustment-Self-Directedness; TRF-AB: Teacher Report Form-Adaptive Behavior; FI-SBI: Family Involvement-School-Based Involvement; FI-HBI: Family Involvement-Home-Based Involvement; FI-HSC: Family Involvement-Home-School Conferencing; EB-RBB: Externalizing Behavior-Rule-Breaking Behavior; EB-AB: Externalizing Behavior-Aggressive Behavior; TR-Cl.: Teacher Relationships-Closeness; TR-Co.: Teacher Relationships-Conflict; TR-TSR: Teacher Relationships-Teacher's Self-Report; PR-A: Peer Relationship-Asocial; PRE: Peer Relationships-Excluded.

*
p < .05.

**
p < .01.

Table 2

Descriptive Statistics of the Indicator Variables in the Research Model.

Indicators	$\bar{x}$	STO	Cronbach's Alpha
SA-SL	2.78	0.349	0.71
SA-CP	2.62	0.372	0.82
SA-SD	2.14	0.312	0.50
TRF-AB	19.73	4.885	0.92
FI-SBI	3.60	0.834	0.84
FI-HBI	4.07	0.517	0.72
FI-HSC	3.49	0.816	0.84
EB-RBB	0.06	0.083	0.57
EB-AB	0.25	0.250	0.86
TR-C1.	3.94	0.624	0.80
TR-Co.	1.69	0.746	0.90
TR-TSR	88.53	15.960	–
PR-A	1.15	0.319	0.84
PR-E	1.09	0.224	0.82

Table 3

Goodness of Fit Indices for Alternative Models

Model	Chi-square	df	Chi-square/df	CFI	RMSEA	SRMR	χ^2
Unrestricted	210.79	68	3.10	0.93	0.06	,045	
Model A							
FI → Adjustment = 0	212.69	69	3.08	0.93	0.06	,046	1.90
Model B							
FI → TR = 0	214.59	70	3.06	0.93	0.06	,047	3.80

Table 4

Indirect Effects of Mediator Variables.

Hypothesis	Direct Effect (x → y)	Indirect Effect	Result
Parent Involvement → Teacher → SA	-0.060 (ns)	0.071 (ns)	No Mediation Effect
External → Teacher → SA	-0.131 *	-0.250 **	Partial Mediation
External → Peer → SA	-0.131 *	-0.250 **	Partial Mediation

ns = 'not significant'.

* p < .05.

** p < .01.