

# Comparison of the Self-Concepts, Social Skills, Problem Behaviors, and Loneliness Levels of Students with Special Needs in Inclusive Classrooms\*

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## Abstract

This study examines whether the self-concepts, social skills, problem behaviors, and loneliness levels of students with special educational needs (SEN) in inclusive elementary classrooms differ from those of students without special educational needs (non-SEN). This study also aimed to identify the roles of self-concept, social skills, and problem behaviors in predicting the loneliness levels of SEN students. The study group comprised 272 students (4<sup>th</sup> and 5<sup>th</sup> graders) attending inclusive elementary classrooms. A total of 140 were SEN and 132 were non-SEN students. The Social Skills and the Problem Behaviors Scales of the Social Skills Rating System-Teacher Form (SSRS-TF), the Children's Loneliness Scale (CLS), and the Piers-Harris Children's Self-Concept Scale (PHCSCS) were used as data collection tools. The findings showed that the self-concepts, social skills, problem behaviors, and loneliness levels of the SEN students were significantly different than those of the non-SEN students. It was also found that self-concept and social skills were significant predictors of the loneliness levels of SEN students. The findings were discussed regarding the related literature and the inclusive practices in Turkey.

**Keywords:** Students with special needs • Inclusion • Self-concept • Social skills • Problem behaviors • Loneliness

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The principle of teaching students with special educational needs (SEN) in the least restrictive environments (LRE) and the necessity of the legal arrangements regarding this issue have been commonly accepted and are supported in the field of special education (Taylor, 1988). However, considerable debate remains regarding the interpretation and implementation of the LRE principle into the practice (McLeskey, Landers, Williamson, & Hoppey, 2010). Recently, inclusive education has been considered as an opportunity for SEN students to become a part of a peer-group, form positive social relationships and friendships, and develop and learn, rather than integrating these students into general education classrooms (Odom, Buysse, & Soukakou, 2011). In this context, the main goal of inclusive education is to create socially supportive and developmentally appropriate learning environments for SEN students (Odom, 2000). The legal ground for inclusion practices was established in Western countries in the 1970s and in Turkey in 1983. Since then, several studies have examined the effectiveness of inclusive education on academic achievement and focused on several indicators of socio-emotional and behavioral functioning such as the self-concept, social skills, peer relationships, social status, and problem behaviors of SEN students. A number of studies have reported that inclusive education yielded positive outcomes for SEN students in terms of communication skills, social skills, and behavior (For a review, see Katz & Miranda, 2002; see also Rafferty, Piscitelli, & Boettcher, 2003). However, other studies have indicated that inclusive education was not effective in obtaining positive outcomes for SEN students (Freeman & Alkin, 2000; Gresham & McMillian, 1997). In their review article, Gresham and MacMillan (1997) stated that students with learning disabilities, mild intellectual disabilities, behavioral problems, and attention-deficit/hyperactivity disorders had peer-related difficulties, social skills deficits, more problem behaviors, and less peer-acceptance or more rejection compared to typically developing students. They also highlighted that the findings regarding the self-concepts of SEN students were contradictory.

Some studies have reported that the self-concept of SEN students in inclusive classrooms did not differ significantly from those of typically developing children (Arnold & Chapman, 1992; Koster, Pijl, Nakken, & Van Houten, 2010), whereas other studies have indicated that SEN students had lower self-concept (Cambra & Silvestre, 2003; Schmidt & Cagran, 2008; Valas, 1999). Rosenberg (1979) defined self-concept as “the totality of the individual’s thoughts and feelings with reference

to himself as an object” (p. 7). The development of self-concept begins in the family context and this process accelerates during school years and is shaped through interpersonal interactions (Bilgin & Kartal, 2002). The attitudes and behaviors of family and peers affect the development of the child’s self-concept to a great extent (Bolger, Patterson, & Kupersmidt, 1998). Social comparison with other students in the same setting may also affect children’s sense of self as well as their awareness of the opinions and appraisals about them by other significant individuals (Allodi, 2000). Festinger (1954) reported that individuals take others whose skills or attitudes are similar to them into account as the criterion for social comparisons (as cited in Coleman, 1983). It has also been argued that SEN students in segregated settings may have more positive self-concept since such settings offer a social comparison group composed of similar peers in terms of academic skills. Moreover, these settings can decrease student’s failures by assigning appropriate academic tasks and providing special educational support (Ribner, 1978). Chapman (1988) reviewed the studies that investigated the effects of placement settings (general education vs. special education) on the self-concept of students with learning disabilities (LD) and stated that LD students in general education classrooms have significantly lower academic self-concepts than those in special educational settings. However, the findings indicated that there was no significant difference between the two groups (general education/special education) in terms of global self-concept. Chapman also highlighted that the LD students who received more special educational support in general education classrooms had higher levels of academic self-concept compared to those who received no remedial assistance.

Despite some contradictory findings, it is commonly accepted that including SEN students into general education classrooms will enhance their social interactions with their typically developing peers, thus promoting their social competence and peer acceptance (Freeman & Alkin, 2000). While several studies have demonstrated an increase in the social interactions of mainstreamed students with their typically developing peers (Ciechalski & Schmidt, 1995; Laushey & Heflin, 2000; Odom & McEvoy, 1990; Wiener & Tardif, 2004), other studies have shown that mainstreamed students had social skills deficits and difficulties in peer relations (Sabornie & Beard, 1990; Sucuoglu & Ozokcu, 2005). A number of studies that investigated the social competence of students with special needs in inclusive

classrooms reported that the social interactions of these students were negatively affected from their reactions against their peers' efforts for interaction in a manner that their peers do not comprehend, their inability to understand the feelings of others, inability to express feelings at appropriate times and places, and unacceptable behaviors (For a review, see Sucuoglu & Ozokcu, 2005). Developing and maintaining positive relationships with peers are crucial indicators of children's social competence (Cassidy & Asher, 1992), and it is considered to be closely related to peer acceptance (Baydik & Bakkaloglu, 2009), to receive positive feedback for their social interactions, and to have positive thoughts about themselves (Sucuoglu & Cifci, 2001). Students with special needs are less accepted and more rejected in peer groups due to their social skills deficits (Frederickson & Furnham, 2004; Koster et al., 2010; Nowicki, 2003; Valas, 1999; Vuran 2005). Moreover, they experience higher levels of loneliness in the classroom (Heiman & Margalit, 1998; Pavri & Luftig, 2001; Pavri & Monda-Amaya, 2000; Williams & Asher, 1992).

In addition to the lack of social skills, it has been observed that SEN students in inclusive settings tend to exhibit more problem behaviors compared to their typically developing peers (Gresham & MacMillan, 1997; Sucuoglu & Ozokcu, 2005). Children with intellectual disabilities are often characterized by being impulsive, nervous, anxious, and easily frustrated as well as having low self-concept and demonstrating aggressive behaviors (Papoutsaki, Gena, & Kalyva, 2013). It has been shown that emotional and behavioral problems may arise due to the children's social skills deficits (Guralnick, Hammond, & Connor, 2003). Furthermore, behavioral problems in children are considered to be related to peer rejection (Odom et al., 2006; Ummannel, 2007) and loneliness (Cassidy & Asher, 1992; Crick & Ladd, 1993). While being less accepted, more rejected, or ignored by a peer group may lead to loneliness in children (Asher, Parkhurst, Hymel, & Williams, 1990; Osterman, 2000), loneliness, in return, may also create difficulties in social interactions with peers (Asher, Hymel, & Renshaw, 1984).

Loneliness has been defined as "an unpleasant experience felt when there is a qualitative or quantitative discrepancy between the existent and desired social relationships" (Perlman & Peplau, 1981, p. 31). Being aware of problems and personal difficulties in interpersonal relationships and having no friends may result in loneliness (Papoutsaki

et al., 2013). Weiss (1973) distinguished between the two types of loneliness: emotional and social. Emotional loneliness is experienced in the absence of individuals (i.e., mother-father, spouse, and close friends) with whom strong/close ties can be developed, while social loneliness is experienced in the absence of a social relationship network in which common interests and activities are shared. Severe and persistent loneliness in children may lead to academic failure and socio-emotional adjustment problems such as dropping out, anxiety, depression, low self-concept, psychosomatic diseases, and delinquent behaviors (Bullock, 1993; McWhirter, 1990; Parker & Asher, 1987).

In the literature, many studies have investigated the loneliness experienced by children (Asher et al., 1984; Asher & Wheeler, 1985; Cassidy & Asher, 1992; Crick & Ladd, 1993; Osterman, 2000; Parker & Asher, 1987). A number of studies have demonstrated that students with disabilities, such as mild intellectual disabilities, learning disabilities, and autism in inclusive settings reported more loneliness and less satisfaction in peer relationships compared to their typically developing peers (Heiman & Margalit, 1998; Jobe & White, 2007; Pavri & Luftig, 2001; Pavri & Monda-Amaya, 2000; Valas, 1999; Williams & Asher, 1992). However, a limited number of studies have examined the relationships between loneliness and self-concept (Fujiki, Brinton, & Todd, 1996), loneliness and social skills (Zeedyk, Cohen, Eisenhower, & Blacher, 2015), and loneliness and problem behaviors (Howell, Hauser-Cram, & Kersh, 2007). Moreover, only a few studies in Turkey have investigated the academic achievements and social and behavioral characteristics of SEN students in inclusive classrooms (Girli, 2013; Kanay & Girli, 2008; Sucuoglu & Ozokcu, 2005), and no studies have focused on the relationship of loneliness with self-concept, social skills, or problem behaviors of children with special needs except one study examined the relationship between the loneliness and social status of SEN students (Bakkaloglu, 2010).

Although there have been increased efforts to expand inclusive practices in Turkey, there are still several problems and shortcomings in the implementation of these practices (Kargin, Acarlar, & Sucuoglu, 2005; Kucuker, Acarlar, & Kapci, 2006; Sucuoglu, Akalin, & Sazak-Pinar, 2014; Sucuoglu, Bakkaloglu, Karasu, Demir, & Akalin, 2013). Therefore, there is a need for further research regarding the socio-emotional and behavioral functioning of students with special needs in inclusive classrooms. Examination of the self-concepts, social skills, problem behaviors, and

loneliness levels of students with special needs may guide the planning of effective interventions that promote the socio-emotional development of these students. In this regard, the present study compares the self-concepts, social skills, problem behaviors, and loneliness levels of students with special needs in inclusive classrooms with those of typically developing students. It also examines the roles of self-concept, social skills, and problem behaviors in predicting the loneliness levels of students with special needs. The following are the main questions in our study:

1. Are there any significant differences between students with and without special needs regarding their self-concept, social skills, problem behaviors, and loneliness levels?
2. Do the self-concepts, social skills, and problem behaviors of students with special needs predict their levels of loneliness?

## Method

### Participants

The participants comprised 272 students (4<sup>th</sup> and 5<sup>th</sup> graders) attending inclusive elementary classrooms in Bolu and Denizli provinces in Turkey during the 2011–2012 school year. Of these participants, 140 (51.5%) were students with special needs, whereas 132 (48.5%) were typically developing students. Prior to commencement of the study, permission to conduct the study and a list of schools with inclusive classrooms were obtained from the Turkish Directorates of National Education in both provinces (30 elementary schools in Bolu and 97 elementary schools in Denizli). Although there is no available socio-economical index for each province, 20 participating schools were randomly selected from regions thought to represent different socio-economic status. SEN students were recruited from the participating schools. Six inclusive classrooms (half from the 4<sup>th</sup> grade and half from the 5<sup>th</sup> grade) were randomly selected from the participating schools. Non-SEN students were recruited from these six classrooms and attended the study as a comparison group. The school principals and class teachers of the participating schools were contacted in order to explain the purpose of the present study and obtain their consent for including the students.

The SEN students were officially diagnosed by health centers as having a disability and placed in inclusive classrooms by the Guidance and Research Centers. A total of 99 of the SEN students (70.7%) were diagnosed with mild intellectual disability, while 14

(10%) were diagnosed with orthopedic impairment, 8 (5.7%) with mild hearing impairment, 7 (5%) with speech and language disorder, 7 (5%) with cerebral palsy, 3 (2.1%) with attention-deficit/hyperactivity disorder, and 2 (1.4%) with learning disability. A total of 71 (50.7%) of the SEN students were females and 69 (49.3%) were males between the ages of 10 and 13 ( $x = 11.32$ ,  $sd = 0.91$ ). A total of 65 (49.2%) non-SEN students in the comparison group were females and 67 (50.8%) were males between the ages of 9 and 12 ( $x = 10.40$ ,  $sd = 0.64$ ). The demographic characteristics of the study group are presented in Table 1.

Table 1  
*Demographic Characteristics of the Study Group*

		SEN <sup>a</sup> (n = 140)		non-SEN <sup>b</sup> (n = 132)	
		n	%	n	%
Gender	Female	71	50.7	65	49.2
	Male	69	49.3	67	50.8
Class	4	73	52.1	90	68.2
	5	67	47.9	42	31.8

<sup>a</sup>SEN: Students with special educational needs <sup>b</sup>non-SEN: Students without special educational needs.

### Instruments

The Children's Loneliness Scale (CLS), the Piers-Harris Children's Self-Concept Scale (PHSCS), and the Social Skills Rating System-Teacher Form (SSRS-TF) were used in the study to collect data. The demographic data about the participants were gathered via personal information forms.

**Children's Loneliness Scale (CLS):** The CLS was developed by Asher et al. (1984) to identify 3<sup>rd</sup>–6<sup>th</sup> graders' loneliness and dissatisfaction from social relationships. Asher and Wheeler (1985) modified the expressions of some items in the original scale to reflect school-based loneliness (e.g., "I feel alone at school" instead of "I feel alone"). The scale includes 24 items, 16 of which focus on children's subjective assessments of feelings of loneliness (e.g., "I feel alone at school"), their perceptions of social competence (e.g., "I am good at working with other children in my class"), and their status among peers (e.g., "I am well-liked by my classmates"). In the scale, there are 8 filler items in which students' hobbies and preferred activities (e.g., "I like music") were inquired in order for students to feel better while completing the scale. These items are not taken into consideration in scoring. The children respond to the scale items which was based on a five-point Likert-scale including "Always true =

5, True most of the time = 4, Sometimes true = 3, Hardly ever true = 2, and Not true at all = 1." The total score ranges from 16 to 80, with higher scores indicating higher levels of loneliness.

It was reported that the original scale consisted of a single factor structure (Asher et al., 1984). Many studies that investigated the factor structure of the CLS on typically developing children from different age groups and grade levels (Asher & Wheeler, 1985; Cassidy & Asher, 1992; Kaya, 2005) found that the scale included a single dimensional construct. Several studies that examined the relationship between students' social statuses in peer groups and their loneliness levels (Asher et al., 1990; Demir & Tarhan, 2001; Kaya, 2005) reported that the loneliness levels of rejected children were higher than those of so-called popular students. These findings support the discriminant validity of the CLS. The studies that presented the internal consistency coefficients of the CLS ranged from .78 to .90 (Asher et al., 1984; Asher & Wheeler, 1985; Galanaki, Polychronopoulou, & Babalis, 2008; Kaya, 2005). The Turkish adaptation study of the CLS was performed by Kaya (2005) on typically developing students between the 3<sup>rd</sup> and 8<sup>th</sup> grades. The study found that the scale had a single factor structure for both the 3<sup>rd</sup>-4<sup>th</sup> grade group and the 5<sup>th</sup>-8<sup>th</sup> grade group. Cronbach's alpha internal consistency coefficients of the CLS were found to be .87 for both groups and the test-retest reliability coefficients were found to be .76 and .87, respectively. Another validity and reliability study of the CLS was conducted on a sample of SEN and non-SEN students in the 4<sup>th</sup> and 5<sup>th</sup> grades. It was also found that the CLS had a single dimensional structure, had an internal consistency coefficient of .87, and had a test-retest reliability coefficient of .83 (Cifci-Tekinarslan & Kucuker, 2015).

**Piers-Harris Children's Self-Concept Scale (PHCSCS):** The PHCSCS has been widely used to measure self-concepts of children from ages 9 to 16 (Piers, 1984). The scale includes 80 items that focus on the way children feel about themselves. The PHCSCS includes six subscales: (1) Happiness and Satisfaction, which measures the general feeling of being happy and satisfied; (2) Behavioral Adjustment, which assesses the perceptions of the child regarding his/her own problematic behaviors; (3) Freedom from Anxiety, which assesses the child's perceptions regarding feelings and behaviors such as concern, sorrow, anxiety, excitement, and shyness; (4) Popularity, which evaluates the child's perceptions of peer acceptance or rejection; (5)

Physical Appearance and Attributes, which measures the child's perception related to his/her physical appearance and attributes; and (6) Intellectual and School Status, which evaluates the child's perceptions regarding academic self-concept. In the PHCSCS, the children are asked to respond to each item by selecting either "Yes (1)" or "No (0)" and higher scores represent higher self-concept.

The original scale was standardized for students from the 3<sup>rd</sup> to 12<sup>th</sup> grades (Piers, 1984). The internal consistency coefficients of the scale were found to be between .78 and .93, while the test-retest reliability coefficients were between .71 and .77. The first Turkish adaptation of the PHCSCS was performed by Ozyurek, 1982 (as cited in Kaner, Bayraklı, Diken, & Çelik, 2012) on students with orthopedic impairments attending the 3<sup>rd</sup> to 5<sup>th</sup> grades in segregated or mainstreamed settings. The scale was re-translated and adapted for Turkish high school and college students (Catakli, 1985). Another reliability and validity study of the PHCSCS was performed by Oner (1996) and the internal consistency coefficients of the scale were found to be between .81 and .89, and the test-retest reliability coefficients were between .53 and .98. Oner (1996) stated that the Turkish version of the PHCSCS also included six subscales (like the original scale) and it could be used to evaluate the self-concepts of children between the ages of 9 and 16.

**Social Skills Rating System (SSRS):** In this study, the social skills and problem behaviors of the participants were assessed via the Social Skills Rating System (SSRS) developed by Gresham and Elliott (1990). The SSRS includes parent-rated, teacher-rated, and student-rated forms for different age/grade levels (preschool, elementary, or secondary). The teacher-rated elementary form (SSRS-TEF) consists of three scales to evaluate the social skills, problem behaviors, and academic competence of students from Kindergarten to the 6<sup>th</sup> grade. The Social Skills (SS) and the Problem Behaviors (PB) scales of the SSRS-TEF were used in the present study. The SS Scale includes three subscales: (1) Cooperation, which includes behaviors such as helping others, sharing materials, and following the rules and instructions; (2) Assertion, which includes behaviors related to the initiation of interaction such as asking for information and introducing oneself; and (3) Self-Control, which includes behaviors that can be displayed during situations of conflict, such as responding appropriately to teasing, and in non-conflict situations that require taking turns and compromising. There are 10 items in each subscale of the SS Scale for a total of 30 items (Gresham & Elliott, 1990).

The PB Scale includes three subscales: (1) Externalizing Problems, which includes inappropriate behaviors such as arguing with others, poor anger management, and verbal/physical aggressiveness toward others; (2) Internalizing Problems, which includes behaviors that indicate shyness, sorrow, anxiety, and low self-esteem; and (3) Hyperactivity, which consists of behaviors such as excessive movement, fidgeting, and impulsive reactions (Gresham & Elliott, 1990). There are six items in each subscale for a total of 18 items. A three-point scale is used by teachers to describe students' typical behaviors for each item in the SS and PB Scales (i.e., Never = 0, Sometimes = 1, Very Often = 3). The subscale scores and total scale scores can be calculated for both the SS and PB Scales. High scores in the SS Scale represent better social skills, whereas high scores in the PB Scale indicate more problem behaviors.

Studies that have examined the internal consistency and test-retest reliability of the SSRS-TEF (Gresham & Elliott, 1990) found the Cronbach's alpha coefficients to be .94 for the entire SS Scale and between .86 and .92 for its subscales. The test-retest reliability coefficients were .85 for the entire SS Scale and between .75 and .88 for its subscales. Cronbach's alpha coefficients were found to be .87 for the entire PB Scale and between .79 and .86 for its subscales, while they were .84 for the entire PB Scale and between .76 and .84 for its subscales. Factor analyses on the SS and PB Scales were conducted separately by Gresham and Elliott (1990) to examine the construct validity of the SSRS-TEF. They found a three-factor structure for both the SS Scale (cooperation, assertion, and self-control) and for the PB Scale (externalizing problems, internalizing problems, and hyperactivity). A study conducted to investigate the criterion validity of the SSRS-TEF found medium to high correlations between the SS Scale and the Social Behavior Assessment, and between the PB Scale and the Child Behavior Checklist (Gresham & Elliott, 1990). Subsequent studies that investigated the psychometric properties of the SSRS also presented findings that supported the validity and reliability of the scale (see Van der Oord et al., 2005, for details).

The first validity and reliability study of the SSRS-TEF for Turkish children was conducted by Sucuoglu and Ozokcu (2005) on SEN and non-SEN students from the 1<sup>st</sup> to 3<sup>rd</sup> grades. It was found that the scale could be used to assess the social skills, problem behaviors, and academic competence of elementary school students. This adaptation study showed a three-

factor structure in the SS Scale, which was similar to the original form. However, the PB Scale included a two-factor structure (Internalized Behaviors and Externalized Behaviors), which differed from the three-factor structure reported by Gresham and Elliott (1990). Since the present study was conducted on 4<sup>th</sup> and 5<sup>th</sup> graders, the validity and reliability of the SS and PB Scales were re-examined by using the data obtained from the study group.

### Validity and Reliability Studies of the SSRS-TEF-Social Skills Scale

In order to determine the construct validity of the SS Scale, exploratory factor analysis (EFA) was performed on the data obtained from the study group ( $n = 272$ ). Before the analysis, appropriateness of the data for factor analysis was examined via the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy and Barlett's Sphericity Test. A KMO value of .95 and a significant Barlett's test result ( $X^2 = 5058.066$ ;  $p < .01$ ) pointed to the appropriateness of the dataset for factor analysis (Buyukozturk, 2007). The Principal Components Analysis (PCA) method with varimax rotation of factor analysis was carried out and three factors with eigenvalues over 1 were generated. Assertion, the first of the three factors obtained at the end of the analysis, included an eigenvalue of 13.59 and explained 45.31% of the total variance. Cooperation, the second factor, had an eigenvalue of 1.84 and explained 6.12% of the total variance. Self-control, the third factor, had an eigenvalue of 1.47 and explained 4.9% of the total variance. The total variance explained by all three factors was found to be 56.34%. Moreover, the factor analysis showed that items 15, 22, 25, and 30 were loaded onto more than one factor with similar factor loadings. Therefore, these items were removed from the scale and the factor analysis was repeated with the remaining 26 items. The analysis also showed that the original three-factor structure was retained and the item factor loadings ranged from .48 to .74 for the SS Scale. The eigenvalues of these three factors were 11.90, 1.81, and 1.44, and these three factors (Assertion, Cooperation, and Self-control) explained 45.76%, 6.95%, and 5.55% of the total variance, respectively. The three factors together explained 58.26% of the total variance.

All of the 10 items (2, 3, 6, 7, 10, 14, 17, 19, 23, and 24) included in the Assertion factor in the original scale were retained in the Turkish form. However, items 5 and 11 included in the Self-Control factor of the original scale were loaded onto the Assertion factor in the Turkish form, thereby making the number of

items in the Assertion factor 12 in total. Nine of the 10 items (8, 9, 15, 16, 20, 21, 26, 27, 28, and 29) in the Cooperation factor in the original form were also retained in the same factor in the Turkish form. Since item 15 was removed from the analysis, this factor consisted of nine items in the Turkish form. Five (1, 4, 12, 13, and 18) of the 10 items (1, 4, 5, 11, 12, 13, 18, 22, 25, and 30) included in the Self-Control factor in the original scale were loaded onto the same factor in the Turkish form. However, this factor was eventually composed of five items, since items 5 and 11 were loaded onto the Assertion factor and items 22, 25, and 30 were removed from the analysis. According to the results of the factor analysis, the factors included in the Turkish SS form were conceptually similar to the factors in the original form.

In the present study, it was found that the item-subscale correlation coefficients of the SS Scale ranged from .58 to .73 for the Assertion subscale, from .59 to .80 for the Cooperation subscale, and from .50 to .67 for the Self-Control subscale. Item-SS Scale correlation coefficients were found to be between .50 and .75, while Cronbach's alpha internal consistency coefficients were as follows: .95 for the SS Scale; .92 for both the Cooperation and Assertion subscales; and .81 for the Self-Control subscale.

#### **Validity and Reliability Studies of the SSRS-TEF-Problem Behaviors Scale**

In order to determine the construct validity of the PB Scale, exploratory factor analysis (EFA) was performed on the data obtained from the study group ( $n = 272$ ). Before the analysis, appropriateness of the data for factor analysis was examined via the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy and Barlett's Sphericity Test. A KMO value of .90 and a significant Barlett's test result ( $X^2 = 2,483; p < 0.05$ ) pointed to the appropriateness of the dataset for factor analysis (Buyukozturk, 2007). The Principal Components Analysis (PCA) method with varimax rotation of factor analysis was carried out. The analysis yielded a two-factor structure (Externalizing Problems and Internalizing Problems) for the Turkish form, unlike the original scale construction that included three factors (Externalizing Problems, Internalizing Problems, and Hyperactivity). The factor loadings of the items in the PB Scale ranged from .58 to .80. Externalizing Problems (EP), the first factor, had an eigenvalue of 6.96 and explained 38.68% of the total variance. Internalizing Problems (IP), the second factor, had an eigenvalue of 2.99 and explained 16.63% of the total variance. The total variance explained by the two factors was found to be 55.31%.

All of the items included in the EP factor (43, 31, 33, 44, 42, and 41) and the IP factor (34, 46, 38, 32, 39, and 45) in the original form were retained in the same factors in the Turkish form. However, one (item 35) of the six items (35, 48, 40, 36, 47, and 37) included in the Hyperactivity factor in the original scale was loaded onto the IP factor, while the rest were retained in the EP factor in the Turkish form. Therefore, the EP dimension included 11 items while the IP dimension had seven items.

Factor analyses performed for the original PB scale yielded three factors (Internalizing Problems, Externalizing Problems, and Hyperactivity) only in the elementary level-teacher form, whereas the Hyperactivity dimension was not obtained in the preschool and secondary level-teacher forms (Gresham & Elliott, 1990). In the present study, the Hyperactivity factor was not obtained in the elementary level-teacher form of the PB scale and the items in this factor were loaded onto the Externalizing Problems factor. Another study conducted by Sucuoğlu and Ozoku (2005) for the Turkish version of the elementary level-teacher form provided similar findings to the ones presented in the current study. It was found that the item-subscale correlation coefficients of the PB scale ranged from .51 to .74 in the EP subscale and from .47 to .69 in the IP subscale in the present study. Moreover, Cronbach's alpha internal consistency coefficients were found to be .90 for the PB Scale, .91 for the EP subscale, and .84 for the IP subscale. In light of the current findings, it can be stated that the Turkish version of the SSRS-TEF Social Skills and Problem Behaviors Scales can be used as a valid and reliable data collection tool to assess the social skills and problem behaviors of SEN and non-SEN students attending 4<sup>th</sup> and 5<sup>th</sup> grades in inclusive elementary classrooms.

#### **Data Analysis**

After data collection, incomplete or erroneously filled forms were excluded from the analyses. Reliability and validity analyses of the SSRS-TEF Social Skills and Problem Behaviors Scales were conducted on the data obtained from a total of 272 students (140 SEN students and 132 non-SEN students). To identify whether there are significant differences between the SEN and non-SEN students in terms of their self-concept, social skills, problem behaviors, and loneliness levels, normality tests for the scores obtained from the PHCSCS, the SS, the PB, and the CLS Scales were performed for both groups. The results of Levene's test showed that, except for the PB scores, the variance for the CLS ( $F_{1,270} = 39.03$ ,

$p = .000$ ), the PHCSCS ( $F_{1,270} = 8.36, p = .004$ ), and the SS scores ( $F_{1,270} = 6.03, p = .015$ ) were not equal. Moreover, the fact that the skewness and kurtosis values of all of the scales' total score distributions obtained from non-SEN students were higher than 1, and that the results obtained from Kolmogorov-Smirnov test were found to be significant, pointed to a distribution that was not normal (Buyukozturk, 2007). Based on these findings, the CLS, PHCSCS, SS, and PB scores of the SEN and non-SEN students were compared via the Mann Whitney-U test for unrelated samples, which is a non-parametric test. Finally, multiple regression analysis was performed to determine the roles of self-concept, social skills, and problem behaviors in predicting the loneliness levels of SEN students.

**Results**

This section presents the findings of the research questions mentioned earlier in this paper. Table 2 presents the descriptive statistics of the scores obtained from the loneliness (CLS), self-concept (PHCSCS), social skills (SS), and problem behaviors (PB) scales for the SEN and non-SEN students.

Table 2  
Descriptive Statistics of the CLS, PHCSCS, SS, and PB scores of the SEN\* and non-SEN\*\* Students

Variables	SEN Students (n = 140)		non-SEN Students (n = 132)	
	x	sd	x	sd
CLS	33.93	11.46	21.56	7.89
PHCSCS	53.81	10.83	65.89	8.69
SS	28.09	10.49	41.79	8.66
PB	13.67	6.93	8.01	6.38

\*SEN: Students with special educational needs.  
\*\*non-SEN: Students without special educational needs.

**1. Comparison of the SEN and non-SEN Students in terms of Loneliness, Self-Concept, Social Skills, and Problem Behaviors**

This study examined whether there were significant differences between students with and without special educational needs in terms of loneliness (CLS), self-concept (PHCSCS), social skills (SS) and problem behaviors (PB) via the Mann Whitney-U Test for unrelated samples. The results are presented in Table 3.

According to Table 3, there is a significant difference between the SEN and non-SEN students in terms of the CLS ( $U = 3.34, p < .001$ ), PHCSCS ( $U = 3.40, p < .001$ ), SS ( $U = 2.78, p < .001$ ), and PB scores ( $U = 4.71, p < .001$ ). Comparing the mean ranks of the SEN and non-SEN students showed that the SEN students' loneliness levels and problem behaviors were higher than those of non-SEN students, whereas their self-concepts and social skills were lower. In light of these findings, it can be stated that the SEN students had higher levels of loneliness, had more negative self-concepts, and the teachers rated these students as having poor social skills and exhibiting more problem behaviors than the non-SEN students.

**2. The Roles of Self-Concept, Social Skills, and Problem Behaviors in Predicting the Loneliness Levels of SEN Students**

Hierarchical multiple regression analysis was performed in order to determine whether self-concept, social skills, and problem behaviors (independent variables) predicted the loneliness levels (dependent variable) of SEN students. The outliers in the dataset were examined by calculating Mahalanobis distance values and one case, identified as an outlier, was removed from the dataset since it exceeded the critical table value ( $X^2_{(3)} = 16.27, p < .001$ ). Prior to the regression analysis, Pearson correlation coefficients were calculated to determine the relationships among self-concept, social skills, problem behaviors, and loneliness in the SEN students. The results are presented in Table 4.

Table 3  
Mann Whitney-U Test Results for the Comparison of SEN and non-SEN Students in terms of the CLS, PHCSCS, SS, and PB Scores

Variables	SEN Students* (n = 140)		non-SEN Students** (n = 132)		U	z	p
	Mean rank	Rank sum	Mean rank	Rank sum			
CLS	178.62	25007.50	91.82	12120.50	3.34	-9.11	.000
PHCSCS	94.82	13274.50	180.71	23853.50	3.40	-9.01	.000
SS	90.37	12651.50	185.43	24476.50	2.78	-9.96	.000
PB	168.84	23637.00	102.20	13491.00	4.71	-6.99	.000

\*SEN: Students with special educational needs \*\*non-SEN: Students without special educational needs

Table 4  
Correlations among Loneliness, Self-Concept, Social Skills, and Problem Behaviors

Variables	Loneliness	Self-concept	Social skills	Problem behaviors
Loneliness	1.00	-.52**	-.36**	.26*
Self-concept		1.00	.25*	-.24*
Social skills			1.00	-.70**
Problem behaviors				1.00

\* $p < .01$ , \*\* $p < .001$ .

There were significant negative correlations between Loneliness and Self-concept ( $r = -.52, p < .001$ ) and Loneliness and Social Skills ( $r = -.36, p < .001$ ), whereas there was a significant positive correlation between Loneliness and Problem Behaviors ( $r = .26, p < .01$ ). In addition, there was a significant positive correlation between Self-concept and Social Skills ( $r = .25, p < .01$ ), a significant negative correlations between Self-concept and Problem Behaviors ( $r = -.24, p < .01$ ) and between Social Skills and Problem Behaviors ( $r = -.70, p < .01$ ).

Three methods were used in order to determine whether there was multicollinearity among the independent variables: (1) the calculation of correlation coefficients among independent variables; (2) a tolerance test; and (3) Variance Inflation Factor (VIF). Although the correlation coefficients were significant, no multicollinearity was detected since none of these coefficients were over .80, tolerance values were lower than .20, and VIF values were higher than 5 (Buyukozturk, 2007). Therefore, hierarchical regression analysis was performed on the data obtained from the 139 SEN students to examine the roles of the independent variables in predicting the loneliness levels of these students. The results are presented in Table 5.

The problem behavior scores were entered first into the regression equation and this variable was found to be effective in predicting loneliness levels. In addition, it explained approximately 7% of the total variance in the loneliness scores ( $R^2 = .067, F_{(1,137)} = 9.915, p < .01$  [Model 1]). When the social skills scores were entered

into the model in the second phase, 13% of the total variance related to loneliness was obtained. Thus, the social skills variable significantly contributed to the explained variance by 6% ( $\Delta R^2 = .061, F_{(2,136)} = 10.026, p = .001$  [Model 2]). However, when the social skills variable was entered into the model, it was found that the problem behavior variable was no longer a predictor of loneliness ( $\beta = .02, p > .05$ ). The self-concept variable, which was entered into the regression equation in the third phase, was found to be significant for the model ( $\Delta R^2 = .197, F_{(3,135)} = 21.699, p = .001$  [Model 3]). The self-concept variable contributed 20% to the variance explained in the loneliness scores, while the third model explained 32.5% of the total variance of the loneliness scores. It was found that the most important predictor of loneliness is self-concept ( $\beta = -.46$ ), followed by social skills ( $\beta = -.27$ ), and both variables are negatively related to loneliness. Based on these findings, it can be stated that the SEN students with more positive self-concepts and better social skills have lower levels of loneliness. As a result, self-concept and social skills were identified to be important variables that affect the loneliness levels of SEN students, whereas problem behavior was not found to be a predictor of loneliness ( $\beta = -.041, p > .05$ ).

## Discussion

In this study, the SEN students in inclusive elementary classrooms were compared with their typically developing peers in terms of self-concept, social skills, problem behaviors, and loneliness levels. Moreover, the roles of self-concept, social skills, and problem behaviors in predicting loneliness in the SEN students was investigated. During the first part of the study, it was found that the SEN students had lower self-concepts, fewer social skills, more problem behaviors, and higher levels of loneliness compared to the non-SEN students.

Studies in the literature have showed that SEN students in inclusive settings generally have lower self-concepts compared to their typically developing peers (Cambra & Silvestre, 2003; Kanay & Girli, 2008; La Greca & Stone, 1990; Polloway, Epstein,

Table 5  
Hierarchical Regression Analysis Results to Predict Loneliness in SEN Students

Model	Variables	R	R <sup>2</sup>	$\Delta R^2$	F	B
1	Problem behaviors	.260	.067	.067	9.915*	.26*
2	Problem behaviors Social skills	.360	.128	.061	10.026**	.02 -.35*
3	Problem behaviors Social skills Self-concept	.570	.325	.197	21.699**	-.041 -.270* -.461**

\* $p < .01$ , \*\* $p < .001$ .

& Cullinan, 1985; Valas, 1999). A similar finding was also obtained in the present study. Difficulties experienced by children at school may negatively affect their self-concept. It was suggested that students with special needs in inclusive settings generally feel frustrated or overwhelmed while attempting to meet the demands of the academic tasks; consequently, their self-perceptions can be negatively affected (Daniel & King, 1997). It was reported that, especially the students with learning disabilities, tend to develop negative attributions about themselves (Humphrey, 2002) and that they may develop negative self-concept since they are more sensitive to negative feedback when they perceive themselves as continuously having low academic performance and having no control over this situation (Allodi, 2000). In a study conducted by Girli and Aksoy (2012) in Turkey, students with intellectual disabilities and autism attending general education classrooms reported that they had academic difficulties, especially in science and math courses, and that they needed educational support. Other studies have also found that students who had no special educational support in regular education classrooms had lower academic self-concepts (Chapman, 1988) and lower levels of social-emotional functioning (Wiener & Tardif, 2004) than those who received special educational support. Making adaptations in the curriculum, in the instructional strategies, and in the learning environment and providing special educational support for SEN students are considered as important factors for successful inclusion (Kircaali-İftar, 1998). However, there are several problems such as inappropriate educational environments, insufficient support services for SEN students, and teachers' lack of knowledge and skills regarding the implementation of effective inclusion practices (Kargin et al., 2005; Kucuker et al., 2006; Sucuoglu et al., 2013; Sucuoglu et al., 2014). These limitations observed in inclusion practices in Turkey may lead to academic difficulties experienced by SEN students in inclusive classrooms. Therefore, the self-perceptions of these students may also be negatively affected.

Consistent with previous studies (Bramlett, Smith, & Edmonds, 1994; Lyon, Albertus, Birkinbine, & Naibi, 1996; Sabornie & Beard, 1990; Stinnett, Oehler-Stinnett, & Stout, 1989; Sucuoglu & Ozokcu, 2005), the present study found that the SEN students in inclusive classroom have significantly fewer social skills than the non-SEN students. Gresham and McMillan (1997) reviewed the studies that investigated the socio-emotional characteristics of children with learning disabilities,

mild intellectual disabilities, behavioral disorders, and attention-deficit/hyperactivity disorder, and found that these children had more social skills deficits than their typically developing peers. Gresham and Elliot (1990) stated that SEN students may demonstrate either social skills acquisition deficits, which refer to the absence of knowledge of how to behave in a socially acceptable way or social skills performance deficits, which refer to the situations in which children fail to perform their social skills at acceptable levels or appropriate times. Inclusion students' deficits in social and communication skills may lead to difficulties in developing and maintaining appropriate social relations with peers and adults (Sabornie & Beard, 1990), whereas developing these skills can positively affect academic achievement as well as social interactions (Gresham, Sugai, & Horner, 2001; Malecki & Elliott, 2002). Hence, it is considered necessary for teachers to identify the social skills deficits of SEN students and implement interventions for improving these skills in order to obtain positive outcomes from inclusive education. It has been reported that effective social skills teaching programs can promote the social skills of SEN students (Colak, Vuran, & Uzuner, 2013; Sazak-Pinar & Cifci-Tekinarslan, 2003).

In addition to having more social skills deficits, SEN students were also found to have more problem behaviors compared to non-SEN students in the present study. A number of studies in the literature have reported that SEN students display more problem behaviors such as hyperactivity, aggressive behaviors, disobeying rules or requests, irritability, inattention, shyness, introversion, and anxiety compared to their typically developing peers (Cicekci, 2000; Lyon et al., 1996; Polloway et al., 1985; Sucuoglu & Ozokcu, 2005; Vostanis et al., 1996). It has been reported that problem behaviors observed in children with intellectual disabilities may stem from emotional regulation deficits and these deficits are considered as one of the most important factors that can interfere with developing and maintaining appropriate social interactions with peers (Guralnick, 2006). Furthermore, SEN students may often display aggressive or less socially acceptable behaviors due to their social skills deficits (Gresham & Elliot, 1990).

In the present study, the finding that showed a significant negative correlation between the SEN students' social skills and problem behaviors also pointed to a necessity for improving social skills to prevent or decrease problem behaviors. As a matter

of fact, there has been an increasing trend of using a preventive approach, known as Positive Behavior Support, for reducing problem behaviors by teaching students appropriate social behaviors (Meier, DiPerna, & Oster, 2006). Sucuoglu and Ozokcu (2005) stated that problem behaviors should not be solely regarded as a result of students' deficits, however, they may also be related to inappropriate learning environments, lack of adaptations in the curriculum and in the instructional strategies for the needs of inclusion students, and teachers' insufficient classroom management skills. It was also observed that students had less engagement in academic tasks, displayed less positive behaviors, and exhibited more problem behaviors when their teachers were incompetent in providing effective teaching and preventive classroom management (Akalin & Sucuoglu, 2015; Evertson, Emmer, Sanford, & Clements, 1983; Sucuoglu, Unsal, & Ozokcu, 2004). Several studies conducted in Turkey have shown that teachers in inclusive classrooms did not have sufficient knowledge and skills in teaching social skills (Colak et al., 2013; Sazak-Pinar, 2014; Sazak-Pinar, Sucuoglu, & Cikrikci-Demirtasli, 2013), in managing problem behaviors (Akalin, Demir, Sucuoglu, Bakkaloglu, & Iscen, 2014), and providing preventive classroom management (Guner, 2011; Sucuoglu et al., 2004). In the present study, the findings showed that the SEN students having more social skills deficits and more problem behaviors can be also considered as related to the limitations in their teachers' levels of knowledge and skills in implementing effective inclusive practices.

Another significant finding of this study was that the SEN students reported more loneliness compared to the non-SEN students. Several other studies also presented that students with intellectual disabilities, physical impairments, and learning disabilities in regular classrooms reported more loneliness compared to their typically developing peers (Bakkaloglu, 2010; Heiman & Margalit, 1998; Pavri & Luftig, 2000; Pavri & Monda-Amaya, 2000). Several reasons that were suggested for explaining the loneliness experienced by the SEN students included being unaccepted or ignored by their peers and having difficulties in creating social relationships with their peers in classroom environments (Pavri & Luftig, 2000; Papoutsaki et al., 2013).

In the present study, self-concept, social skills, and problem behaviors, as predictors of the loneliness of SEN students in inclusive classrooms, were examined. It was found that self-concept and social skills had a negative relationship with and were significant predictors of loneliness. Moreover,

self-concept was found to be the most important predictor of loneliness in the SEN students of this study. Several other studies in the literature also reported that students with positive self-concepts were able to form close relationships with others and they experienced less loneliness, whereas students with negative self-concepts experienced more loneliness since they had difficulties in making friends and forming close relationships (Coplan, Findlay, & Nelson, 2004; Galanaki & Kalantzi-Azizi, 1999; Hymel, Rubin, Rowden, & LeMare, 1990; Rubin et al., 2004; Tsai & Reis, 2009). Previous studies have also showed that students with good social skills were more accepted by their peers (Baydik & Bakkaloglu, 2009; Koster et al., 2010), whereas students with poor social skills experienced more loneliness since they were less accepted by their peers (Cassidy & Asher, 1992; Jobe & White, 2007; Pavri & Luftig, 2000; Pierson & Edwards, 2003; Williams & Asher, 1992). Juntilla, Vauras, Niemi, and Laakkonen (2012) reported that students who perceived themselves as being less skilled in cooperation and empathy than their peers may be at risk for experiencing social and emotional loneliness in later stages of life. Moreover, it was stated that better social skills and forming positive social relationships with the others play a crucial role in receiving positive feedback for social behaviors and promoting a positive sense of self in children (Sucuoglu & Cifci, 2001). This claim was also supported by the present study, which found a significant positive correlation between the social skills and self-concepts of the SEN students. Therefore, improving the social skills of SEN students in inclusive classrooms can positively affect their self-concept, which may help them create more positive social relationships with their peers and reduce their feelings of loneliness.

Several studies have reported that emotional and behavioral problems in children are related to lower peer acceptance (Rubin, Chen, & Hymel, 1993; Ummanel, 2007) and loneliness (Cassidy & Asher, 1992; Crick & Ladd, 1993; Galanaki et al., 2008; Rubin et al., 1993). The present study also found a significant positive correlation between the loneliness levels of students with disabilities and their problem behaviors. When the problem behavior scores were entered into the regression equation, it was found that this variable significantly predicted loneliness by itself. However, when the social skills variable was added into the model, it was observed that the problem behavior variable was no longer a predictor of loneliness. This finding may be due to the strong relationship between social skills

and problem behaviors ( $r = -.70$ ) that was obtained in the present study. In the related literature, it was reported that students with poor social skills displayed more internalized and externalized problem behaviors (Guralnick et al., 2003; Rubin et al., 1993). The relationship between SEN students' problem behaviors and loneliness levels was examined by using the total scores from the Problem Behavior (PB) scale. However, each of the subscale scores (Internalizing and Externalizing Problem Behaviors) of the PB scale were not utilized in the present study. Thus, investigating the relationships between loneliness and the internalizing and externalizing problems separately may provide in-depth information regarding the social-emotional and behavioral functioning of SEN students.

This study identified that the SEN students in inclusive classrooms had fewer social skills, more problem behaviors, lower self-concepts, and more loneliness than the non-SEN students. It was also shown that self-concept, social skills, and problem behaviors were found to be related to loneliness and that self-concept and social skills were important predictors of loneliness in SEN students. In light of these findings, it can be stated that implementing effective interventions to enhance social skills and reduce/prevent problem behaviors of SEN students may contribute to positive and satisfactory interactions between these students and their peers. Thus, teachers

can create learning environments that support positive social interactions among their students. Moreover, teachers can facilitate SEN students to develop positive self-concepts by providing positive experiences, giving positive feedback, and supporting their academic achievements.

The findings obtained in this study should be interpreted with several limitations in mind. First, this study was conducted on a sample composed of students with various disabilities. The fact that the majority of the participants in this study were students with mild intellectual disabilities (70.7%) and that a small number of the students had other disabilities limits the generalization of the findings. Therefore, future studies should focus on more representative samples from different disability groups to examine SEN students' self-concept, social skills, and problem behaviors as well as the relationships of these variables with loneliness. Second, whether the loneliness levels of SEN students differ in terms of gender and age should also be studied. Finally, this study was a cross-sectional investigation that focused on several variables related to loneliness in SEN students in inclusive classrooms. However, longitudinal studies that examine the self-concepts, social skills, problem behaviors, and loneliness of SEN students may expand our understanding about the social-emotional and behavioral functioning of these students.

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