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Development of Social Skill Rating Scale for Primary School Students-Teacher Form (SSRS-T) and Analysis of its Psychometric Properties

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Abstract

The aim of the study is to develop a new scale, called the "Social Skills Rating Scale for Primary School Students-Teacher Form" (SSRS-T). This study was carried out on four different groups consisting of primary school students from Burdur in Turkey. The psychometric properties of the Scale (SSRS-T) were analyzed by means of item analysis, exploratory factor analysis, the first level of the confirmatory factor analysis (CFA) and internal consistency and test-retest methods. The exploratory factor analysis (EFA) results demonstrated that the scale comprised two factors. As a result of the EFA, the factor loadings of 24 items in the two factors were found to vary between 0.61 and 0.84. These two factors explained 64% of the total variance. CFA results demonstrated that two dimensional model provides good fit as per obtained fit index values. The Scale (SSRS-T)'s internal consistency coefficient and test-retest reliability coefficient were each determined to be 0.97 and 0.87. In conclusion, Social Skills Rating Scale for Primary School Students can be used as a reliable and valid measure for Turkish primary school students.

Keywords: Social skils, primary school, primary school studentes, social skill rating scale

1. Introduction

Social life brings along adaptation to situation, environment and conditions, also establishing healthy relations in communicating with others. One of the basic skills that develop and reveal social adaptation of individuals is social

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skill. Social skills can be defined as behaviours that make communication with others possible, that are socially acceptable and learned (Yuksel, 1999), as well as defined as behaviours that enable individual to interact with others successfully. In interpersonal cases, the individual acquires reinforcement by showing these behaviours or maintains current reinforcements, and social skills emerge in the form of behaviours. At the same time, they constitute an interpersonal quality and are behaviours approved by surrounding people (Bacanlı, 1999).

Primary School level is a period when development of children's personality and social features gains importance. During this period, children become aware of others and their social development begins to gradually take shape, and they start to explore others (Bacanlı, 1999). In parallel to this exploration, one of the objectives of modern education is without doubt the development of individuals' social skills. Among purposes of primary education institutions specified in Regulations on Primary Education Institutions; there are procurement of students' all-round development by combining their skills and intellectual works; to contribute to their development in social, cultural, sportive, educational and scientific fields; to educate citizens who contribute to themselves, their families, society and surrounding positively, who is at peace with their family and environment, who is tolerant and knows how to share and those virtuous, good and happy (MEB, 2003). As can be seen from these objectives, it is apparent that the aim of education is to support only intellectual development field but also all development fields including an individual's social skills.

Social skills have great importance in revealing a child's academic ability and use of this ability. Therefore, schools and therefore classroom teachers must acquaint themselves with properties of students in advance of all kinds of educational activities arranged accordingly (Oliva, 2009; Tanner, and Tanner, 2007). It has been long known that characteristics such as undertaking the role of initiator in a group by means of leadership, thanking when received help or apologizing after behaving wrong, listening to friends and being ready to study together are basic determinative in maintaining group relations. Due to its nature as a group, classroom is an educational environment to develop these social skills and carries the quality of an arena in which these skills put into use (Steedly, Schwartz, Levin and Luke, 2008).

When social skills are not acquired in the process of education, this may bring about descent in school success, inadequacy in interpersonal relations and adaptation problems (Akkok, 1999). Furthermore, it is indicated that, in case of deficiency in social skills, individuals may have difficulty in maintaining relations in social and affective fields, also coping with problems faced (Sahin, 2001). Deficiency in social skills will affect the individual in every stage of life at home, school and in games. Researches have revealed that low social skills are the main factors for learning deficiencies. In these studies, while researches indicate that misreading social statuses, not behaving sensitive to others and feeling social repression pain are important social problem indicators (Bryan, 1991:297; in cited Seven, 2008); Elksnin and Elksnin (1995) indicated that social skills are associated with the interpersonal relationships, self, peer relationships, and with communication skills and academic achievement. Besides, while emphasizing the importance of social skills in healthy social development, it is remarked that children with positive social skills will have higher self-esteem and they will establish positive relationships with their peers at and outside school. In addition, positive social skills during childhood is emphasized to be associated with social skills during adolescence and adulthood (Tawana and Moorc, 2011).

Analyzing the field literature, it can be seen that there are limited number of scales developed to measure social skills. It can be seen that some of these scales are developed for preschool students and some of them for students older than 72 months. By means of changing primary school start age to earlier years, age range for students starting primary school during 2012-2013 education term changed, it can be seen that some students was born in 2005, some in 2006 and 2007. Different levels of social skills among these different aged children were considered as a problem, and this issue put forth the necessity to develop a measuring tool for primary school students younger than 72 months. Starting from here, the aim of this study was specified as to develop social skill rating scale teacher form for primary school students and analyse psychometric characteristics in a Turkey sample.

2. Method

2.1. Research Group

Research group consists of students attending primary school in total 20 primary schools in Burdur Center, Bucak and Cavdır districts as of 2012-2013 academic years. In the sample, there a total of 916 participants chosen by

means of simple random sampling method and divided into four separate groups. Focus group interviews were conducted with a view to establish item pool for 'primary school students' social skills rating scale-teacher form' with attendance of 50 teachers included in the first group. Data obtained from 492 students included in the second group was processes with explanatory factor analysis. 246 of students included in this group are girls (50%) and 246 of them are male (50%). 87 students (17.7%) were born in 2005, 347 of them (70.5%) were born in 2006, and 58 of them (11.6%) were born in 2007. Confirmatory factor analysis was applied on data obtained from 229 third and fourth grade students included in the third group. Data obtained from 145 students included in the fourth group was used to calculate test-retest reliability of 'primary school students' social skills rating scale-teacher form'.

2.2.Formation of Social Skill Expressions in the Scale

Teachers working in primary schools in Burdur City Center in 2012-2013 academic years were asked to write a text that reports social skill characteristics they observed among first and second grade students by considering students starting primary school at an early age as well. By considering these texts, various expressions in other social skill observation scales and field literature in a theoretical framework, 36 social skill observation expressions were established. These expressions were sent to 3 field experts regarding whether they were social skill observation expression, they resembled with other items and were consistent, and scale trial form was prepared by taking related field experts' views on these expressions. Afterwards, 15 teachers were applied with pilot application to check whether expressions in testing scale were comprehensible, and they were asked to specify incomprehensible items. Following analysis of these items and arrangement of incomprehensible expressions, the final form for testing form of the scale was achieved. In this form, there are 36 directly graded expressions.

2.3.Research Data

In this study, 4 point likert scale including 36 items that was developed for primary school students' social skill rating scale-teacher form was applied to various official primary schools located in Burdur City Center, Bucak and Cavdır districts in 2012-2013 academic years, and the data obtained as a result of application was analysed. As a result of analysis, the final 24-item scale form was achieved.

2.4.Analyzing the Data

In this study, explanatory and confirmatory factor analyses were applied within the scope of validity of primary school students' social skill rating scale-teacher form. Factor analysis is a statistical method aiming at explaining measuring the same structure by gathering in one point through the use of fewer factors (Buyukozturk, 2012). Before starting exploratory factor analysis, KMO and Barlett's sphericity test results were used to check whether data structure was suitable for factorization. As a result of the analysis, it was concluded that data structure was suitable for factorization. Then, "first-level" Confirmatory Factor Analysis (CFA) was applied. To determine reliability of the scale, Cronbach Alpha (α) internal consistency coefficient, split half test reliability and test-retest analyses were applied. Thanks to this research, verification status of theoretical structure constituted by three components such as social skill variable, social adaptation factor and self-confidence factor was tested using CFA (Simsek, 2007).

3.Findings

In this section, findings related to validity and reliability studies into "primary school students' social skills rating scale-teacher form" were included.

3.1.Findings Related to Validity of Primary School Students' Social Skills Rating Scale-Teacher Form

3.1.1.Findings Related to Structural Validity

3.1.1.1. Explanatory Factor Analysis

To put forward structure validity of the scale, explanatory factor analysis was applied. With a view to review suitability of data to factor analysis prior to factor analysis, it was controlled whether there are extreme values in data set. Significant z table values at 0.01 level for single-variable extreme values towards dependent and independent variables were reviewed and 12 data exceeding 3.29 were removed from the data set. For multivariate extreme values, Mahalanobis distance was analysed and was not found over value of 1 (Tabachnick and Fidell, 2007). Thus, 492 data were used for the explanatory factor analysis.

The Kaiser-Meyer-Olkin (KMO) coefficient calculated for compatibility of sample with factor analysis was found to be 0.97. Barlet field test value χ^2: 14854,687, was found to be significant as p<.05. In addition, the common factor variance (Communalities) of analysed items was observed to range between .572-.741. The fact that KMO value (Buyukozturk, 2007) was found to be higher than 0.60 shows that the data is suitable for factor analysis. After ensuring suitability of data set to explanatory factor analysis, factor analysis process was conducted.

As a result of factor analysis of 36-item primary school students' social skill rating scale-teacher test form and varimax rotation process, 4 factors were revealing having an Eigenvalue higher than 1.00. Variance of these 4 factors explained related to the scale is 68.466. As a result of Anti-image Correlation process applied in conjunction with varimax rotation technique, items 3, 5, 15, 25, 31 and 32 were removed from the scale since they gave similar weight to two separate factors. Afterwards, re-rotation process was carried out with remaining scale items. As a result of the second varimax rotation process, KMO coefficient was found to be 0.967. As a result rotation process, 3 factors were revealed with the eigenvalue higher than 1.00. Variance of these 3 factors explained related to the scale is 65.759. As a result of rotation, items 13, 29 and 30 give close weights to two separate factors. That's why these items were removed from the scale. Afterwards, re-rotation process was carried out with remaining scale items. As a result of the third varimax rotation process, KMO coefficient was found to be 0.962. As a result rotation process, 3 factors were revealed with the eigenvalue higher than 1.00. Variance of these 3 factors explained related to the scale is 66.72. As a result of rotation, items 17, 18 and 19 were removed from the scale since they gave close weights to other factors. Afterwards, re-rotation process was carried out with remaining scale items. As a result of the fourth varimax rotation process, KMO coefficient was found to be 0.965. As a result rotation process, 2 factors were revealed with the eigenvalue higher than 1.00. The total variance of these 2 factors explained related the scale is 64.406%. As a result of analyses, while items 2, 6, 7, 9, 11, 14, 16, 20, 24, 27, 33, 34, 35 were found in the first factor and items 1, 4, 8, 10, 12, 21, 22, 23, 26, 28, 36 were included in the second factor.

The final primary school students' social skills rating scale-teacher form was processed with factor analysis again. Eigenvalues for factor loads obtained as a result of factor analysis on 24-item primary school students' social skills rating scale-teacher form, variances explained by factor and revealed total variances are shown in Table 1.

Table 1. Eigenvalues and explained variance percentages for primary school social skill rating scale-teacher Form

Factors	Eigenvalues	The Percentage Of Explained Variance	The Percentage Of Total Explained Variance
Factor 1	13.069	33.175	33.175
Factor 2	2.388	31.231	64.406

Analysing Table 1, it can be seen that 24 items in the scale are gathered under the two factors with eigenvalues higher than 1. The variance explained by these two factors together is 64.406%. 33.175% of the variance related to the first factor; 31.231% of the variance related to the second factor can be explained. Loads belonging to these two effective factors were found as shown in Table 2.

Table 2. Factor loads belonging to elementary school students' social skills rating scale-teacher form

No	Item	Factor 1	Factor 2	Total
1(9)	Follows the rules.	.830		
2(35)	If necessary, apologizes.	.806		
3(34)	Behaves according to directives	.794		
4(33)	When necessary, thanks	.787		
5(16)	Asks for permission when joining a game.	.771		
6(2)	Listens when someone talks to him.	.706		
7(14)	Copes with his/her anger.	.689		
8(24)	Accepts criticism without getting angry.	.668		
9(27)	Sensitive to surrounding events.	.666		
10(6)	Takes part in group studies.	.656		

11(11)	If necessary, collaborates.	.656		
12(20)	Willing to participate in lessons.	.653		
13(7)	Fulfils his/her responsibilities.	.636		
14(23)	Leads the group.		.846	
15(12)	Expresses his/her thoughts		.821	
16(8)	Leads while playing with friends.		.819	
17(22)	Expresses any disagreement with others.		.814	
18(1)	Expresses his/her feelings.		.749	
19(4)	Says no when necessary.		.718	
20(28)	Mediate between friends in problem solving.		.707	
21(21)	Meets easily with others.		.666	
22(36)	Expresses accordingly when s/he is behaved unfairly.		.664	
23(26)	Tells what makes him/her angry when gets angry.		.660	
24(10)	Become aware of his/her feelings.		.615	
	Variance Explanation Percentage	%33.175	%31.231	%64.406

Although it can be seen that the scale is in a two-factor structure in Table 2, eigenvalue of the first factor was found to be 13.069. In Scree plot graphic drawn according to eigenvalues, a highly accelerated drop is observed after the first factor. This situation shows that the scale may have a general factor (Buyukozturk, 2012). Determined factors of the scale were specified as the first factor being social adaptation and the second one being self-confidence. Furthermore, total point can be received from the scale.

3.1.1.2.Confirmatory Factor Analysis

Table 3. The values of the goodness-of-fit test

X^2	df	X^2/df	P-Value	NFI	RFI	CFI	GFI	AGFI	SRMR	IFI	RMSEA
592.18	251	2.359	.000	0.93	0.92	0.96	0.82	0.79	0.07	0.96	0.07

* p<0.001

Confirmatory factor analysis studies for 24-item main form of the scale was applied on 229 primary school students. In studies conducted towards analysis availability of data set, 15 data demonstrating extreme values and one third of which left blank were not included in analyses. The values gained by analysis were given Table 3. Fit indices of the model obtained from CFA and Chi-square value ($x2$= 592.18, N= 229, df= 251, p= 0.00) were found to be significant. Fit index values were found to be RMSEA= .07, NFI= .93, CFI= .96, IFI= .96, RFI= .92, GFI= .82 and RMR= .047 respectively. It is indicated that it is enough that GFI, NFI, RFI, CFI and IFI goodness of fit indices are greater than .90, and RMSEA is lower than .08 and RMR is lower than .05 (Hu and Bentler, 1999; Cokluk, Sekercioglu and Buyukozturk, 2010). Accordingly, we can say that two dimensional model provides good fit as per obtained fit index values.

3.2.Findings Related to Reliability of Primary School Students' Social Skills Rating Scale-Teacher Form

3.2.1.Item Total Score Correlation: Analyses related to comparison of item scores of lower 27% and higher 27% groups with item total correlation were applied on sampling group consisting 492 people, item total score correlation values and t-test results were given in Table 4.

Table 4. Item total correlation coefficients and lower-higher 27% group comparison results

Item	Item Total Correlations a	*t* (Lower 27%-Higher 27%)b
1(9)	.743	20.897*
2(35)	.730	17.696*
3(34)	.807	24.001*
4(33)	.725	17.752*

5(16)	.736	18.625*
6(2)	.776	21.699*
7(14)	.707	20.481*
8(24)	.700	20.351*
9(27)	.839	28.060*
10(6)	.815	25.288*
11(11)	.846	27.097*
12(20)	.766	23.824*
13(7)	.786	26.668*
14(23)	.750	28.082*
15(12)	.790	27.940*
16(8)	.717	24.108*
17(22)	.721	21.086*
18(1)	.724	21.590*
19(4)	.751	21.769*
20(28)	.804	29.714*
21(21)	.769	23.696*
22(36)	.792	24.810*
23(26)	.790	25.530*
24(10)	.830	24.680*

a n=492,   b n1=n2=123   *p<.001

Analysing the Table 4, it can be seen that corrected item-total correlations of primary school students' social skills rating scale-teacher from range between .700 and .846. In general, we can say that items with item total correlation of .30 and higher can distinguish individuals very well (Buyukozturk, 2012). Furthermore, it can be seen that t (df= 244) values related to differences in 27% lower and higher groups' item scores range between 17.696 and 29.714, and that obtained t values are significant at .001 level. These results can be interpreted in a way that items' validities in the scale are high, they distinguish students in terms of procedural competence and they are items towards measuring similar behaviour (Buyukozturk, 2012).

Cronbach's Alpha Internal Consistency Analysis: The scale was applied to 492 people and Cronbach's alpha internal consistency coefficient for the whole scale was found to be .973 respectively.

3.2.2.Split Half-Test Reliability

Split half test technique was applied to the scale with a sample of 492 people, and as a result, Cronbach's alpha for the first half was found to be .959 and for the second half as .959 as well.

3.2.3.Test Retest Reliability Analysis

For test retest analyses of the scale, Pearson product-moment correlation coefficient calculated for two applications in scale implementations conducted every two months on 145 people was found to be .873.

4.Conclusion and Discussion

As a result of explanatory and confirmatory factor analyses carried out for the determination of psychometric features of the scale (SSRS-T), a construct with four factors, it can be seen that 24 chosen items describe half of the total variance (64.406%). The observed explanation rate is at an acceptable level. We can say that the two factors were appropriate theoretically and statistically. The results are also proof of structural validity of the scale.

Reliability, test retest reliability coefficient and Cronbach's alpha coefficient of the scale were calculated. The Cronbach's alpha for the scale was .97, the computed test-retest reliability coefficient was .87; and Cronbach's alpha

for the first half was found to be .959 and .959 for the second half in terms of split half test reliability (p<0.000).

According to these results, SSRS-T (Social Skills Rating Scale for Primary School Students-Teacher Form) had a satisfactory level of reliability and validity for Turkish primary school students. This scale can be used by academicians to determine students' social skill levels. As for the application, school guidance counsellors can use this scale to test effectiveness of applications towards increasing social skills.

Acknowledgements

References

Akkok, F. (1999). The development of social skills in primary school: Parents hand books. İstanbul: Ozgur Yayınları.

Bacanlı, H. (1999). Social skills education. in guidance in the primary school, p. *171-188*. Edt. Yıldız Kuzgun, Ankara: Nobel Publication.

Buyukozturk, S. (2012). *Handbook for social science data analysis.* (17. Edition).Ankara: PegemA Publication.

Cokluk, O, Sekercioglu, G. & Buyukozturk, S. (2010). *Multivariate statistics for the social sciences. SPSS and LISREL applications.* Ankara: Pegem Publication.

Elksnin L.K., & Elksnin, N. (1995), *Assessment and instruction of social skills.* San Diego CA: Singular Publishing Group.

Hu, L.T. and Bentler, P.M. (1999), Cutoff Criteria for Fit Indexes in Covariance Structure Analysis: Conventional Criteria Versus New Alternatives. *Structural Equation Modeling, 6* (1), 1-55.

Regulation of the Ministry of Primary Education Institutions (2003). Item 5.

Olivia, P. F. (2009). Developing the Curriculum (7 th. ed.). USA: Pearson Education Inc.

Seven, S. (2008). Examining social skills in seven and eight years old children. *Fırat University Journal of Social Science, 18*(2), 151-174.

Steedly, K.M., Schwartz, A., Levin, M.A., & Luke, S.D. (2008). Social skills and academic achievement. *Evidence for Education, 3*(2), 1-8.

Sahin, C. (2001). Social skill and social competence. *G.U. Journal of Kırsehir Education Faculty, 2*(1), 9-19.

Simsek, O. F. (2007). Structural equation modelling Introduction: Basic principles and LISREL applications. Ankara: Ekinoks publication.

Tabachnick, B. G., & Fidell, L.S. (2007). Using *Multivariate Statistics* (5th ed.). Needham Heights, MA: Allyn and Bacon Publishers.

Tanner, D. &. (2007). Curriculum Development Theory into Practice (4 th. ed.). Upper Saddle River, New Jersey, Colombus, Ohio: Pearson Prentice Hall.

Tawana, B.B.S, & Moorc, K.A. (2011). What works for promoting and enhancing positive social skills: Lessons from experimental evaluations of programs and interventions. *Child Trends, March,* 1-12.

Yuksel G. (1999). The Effects of Social Skill Training on Social Skill Levels of University . *Turkish Psychological Counseling and Guidance Journal, 2*(11),37-47.