Development of Leadership Skills Scale for Students*

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ABSTRACT

The purpose of the research was to develop a valid and reliable scale aiming to measure the leadership skills of students attending grades 6 to 8. The sample of the research subjects consists of 571 students who attend from grades 6-8. To validate the scale, the authors consulted with experts to establish content validity. To establish construct validity, exploratory factor analysis conducted on the scale. The scale of 41 items factored into 10 sub-scales. After confirmatory factor analysis, we found that the model of the scale is hypothetically and statistically convenient. To establish reliability of the scale, internal consistency coefficient, split half reliability and test-retest reliability was used. The study found that the psychometric properties of leadership skills scale are acceptable and suitable for use.

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Introduction

Throughout history people needed leaders and it seems that the need for effective leaders is increasing in the future. Today the subject of leadership maintains its importance. There is numerous documents address the topic of leadership such as research articles, journals and books. Dubrin (2001) found 35.000 literature sources about leadership. According to Burns (1978), leadership is being one of the most observed but least understood concepts. It is one of the most popular and confusing subject in the literature (Cronin, 1984). In literature on leadership, there are many leadership definitions ranging from older, single trait definitions to newer, complicated, and based on person-process-position interaction.

According to Bass (1990), there are as many leadership definitions as the people who try to define leadership. Karnes & Bean (2010:5) summarized some of these such as:

- Coordinating and directing of the work of group members (Fiedler, 1967).
- Interpersonal relationship in which others accept because they want to not because they are have to (Hogan, Curpy & Hogan, 1994).
- An activity or set of activities, observable to others, that occurs in a group, organization or institution involving a leader and followers who willingly subscribe to common purposes and work together to achieve them. (Clark and Clark, 1994:19)

Although there are many different definitions, it is important not to forget that, there is no single and accurate one. This difference displays the multitude of factors that effecting leadership and different perspectives to leadership. However many similarities exist in the definitions of leadership; almost every

definition contains the concepts of leaders, followers, and the interaction of leader and followers (Karnes & Bean, 2010)

The debate about whether the leadership is "nature" or "nurture" is still controversial. Parker and Begnaud (2004) stated that there is no evidence which could support the idea of innate leadership and this idea was viewed as inaccurate. Gardner (1990) highlighted that most of the skills enable a person to become an effective leader are learned rather than innate. Conradie (1984) claimed that leadership potential be identified in early ages and that it also be continuous. He remarked that, as children grow up, social changes and leadership ability may occur. Hensel (1991) signified that leadership behaviors such as high verbal skill, sensitivity to others' needs and interests, popularity with their peers for friendship and ideas, comfortable interaction with peers and adults, easy adaptation to new situations, problem solving skill and conflict resolution can be observed in pre-school children. First of all, these leadership behaviors and skills should be recognized and identified to develop them in children.

The identification process for leadership training is not easy task. Different instruments and identification methods were developed to identify the leadership behaviors and skills in children. Olivero (1977) offered 3 identification methods: Families (a good indicator of leadership potential in children), sociometric means (for early adolescents) and self-esteem inventories (for upper secondary students). According to Cubba (2004), assessment of leadership is conducted as self-rating, group member's rating of the leader, rating by the people whom he/she was with and rating of independent observers.

As a result of the study carried out with 28 students attending grades 5 and 6, Friedman and Van Dyke (1984) found out that self-nomination is the single most effective method of identifying leadership potential in students. A similar research done by Renzulli et.al, (1976) with "Scales for Rating Behavioral Characteristics of Superior Students" showed that there is a significant relation between the self-ratings of the students and the teachers' ratings of students.

Some instruments based upon self-evaluating attempting to identify leadership skills in children were developed. One of these was developed by Louis Roets. "Roets Rating Scale for Leadership-RRSL" contains 26 items rated on a 5-point scale. The ratings are as follows: almost always, quite often, sometimes, not very often, and never. This self-rating instrument is for students in grades 5 through 12 with the approximate ages of 10 through 18 (Roets, 1986, 76-113). The scale has no sub scale but Roets developed a leadership skills training program prepared using the scale based on four themes: people of achievement, project planning, language of leadership and debate-discussion.

Another instrument in leadership identification is "Leadership Skills Inventory, LSI" which was developed by Karnes and Chauvin (1985). Leadership Skills Inventory has 9 subscales as, 1-Fundementals of Leadership, 2- Written Communication Skills, 3- Speech Communication Skills, 4- Character-building skills, 5- Decision-making skills, 6-Group dynamics skills, 7- Problem solving skills, 8-Personal Skills, 9-Planning skills. According to Van Tassel-Baska (1998:351) the scale is one of the best instruments in terms of validity and reliability in leadership identification and it's more comprehensive comparing to other scales. Applicants also can use the scale to evaluate themselves.

Leadership Strengths' Indicator (Ellis, 1990) is designed as a self-rating to get students' evaluations of their leadership traits and abilities for grades 6-12. The inventory with 40-items consists of eight sub scales as Enjoys Group Activities, Key Individual in Group Activities, High-Level Participator in Group Activities, Journalistic, Sympathetic, Confident, Courageous, Conscientious, and Self-Confident. The rating scale's response choices are excellent, very good, better than most, okay, not so good.

Another self-rating instrument about leadership is Leadership: A Skill and Behavior developed by Sisk (Sisk & Rosselli, 1987). It contains 8 subscales as positive self-concept, communication skills, decision-making skills, problem-solving skills, group dynamics skills, organizing, planning skills, implementing skills, and discerning opportunities. The students use rating scale as never, seldom, sometimes, often, and always. But validity and reliability data are not provided (Karnes and Bean, 1996)

Gardner (1990:28) sorted some traits of leaders as physical vitality and durability, intelligence and right decisions in actions, eagerness to take responsibility, success in fulfilling a mission, understanding of others' need in the group , the skills in handling with people, the need of success the power to motivate, the power

of managing, deciding and setting priorities, tenacity and perseverance, reliance/ reticence, the power of achievement and reassurance, self-assertion, the flexibility and easy adaptability of the approach. According to Daft (2008) attitudes and behaviors are related to the leadership such as developing vision (purpose), communication, leadership and followership, creative thinking, reliability and teamwork. Northouse (2001:19) advocates that leadership has five general characteristics such as intelligence, self-esteem, insistence, honesty and sociality. Likewise Mariotti (1999) listed a good leader features as motivation, the ability of overcome the danger, responsibility, high expectations from self and others, good self-expression. Research on characteristics of leaderships indicate that leaders demonstrated personal power skills of creative insight, sensitivity, vision, versatility, focus, patience and conflict resolution skills (Sisk, 2001).

As London cited (2002) Hernez-Broome et.al. (2000) specified aspects of the success in leadership by asking how they see themselves to the best leaders and administrators. They were asked to explain the critical circumstances of effective and ineffective leadership to the executives who attend to the training organized by Creative Leadership Center. Expert readers analyzed key aspects in total 256 cases gathered from participants. The most significant three aspects of effective leadership came out that "motivation", "problem solving" and "planning and organization". Among another significant aspect there are "ethical attitudes and decisions", "risk-taking", "communication skills". They remarked as less important aspects "role definition", "informing", "observing", "acquaintance" and "mentorship". According to Spears (2000) communication skills, such as the ability to listen are a priority to be an effective leader. In the larger context, conflict resolution and the ability to be a follower are also important attributes. Risk taking is essential as it is to all successes.

Hensel and Franklin (1983) prepared a 10 behavior control list to identify leaders and divided these behaviors as task-based and interpersonal behaviors. Among task-based behaviors there are asking questions that reveal the problem, using clear statements, presenting alternative solutions, planning action, summarizing others' plans. As for interpersonal behaviors, it was listed as sensitivity to personal and emotional needs, understanding of the needs of group and individuals in the group, exploring and supporting of others skills, listening and eagerness to agreement. These 10 behaviors list are also important on behalf of identifying the indications of leadership in children.

As a result of literature review about the leadership skills seen in children made by Landau and Weissler (1991), the skills are listed as below:

- Responsibility (Baldwin, 1934; Bellingrath, 1930; Burks, 1938).
- The urge of domination (Ackerson, 1942; Smelser, 1961; Stogdill, 1974; Tryon, 1939).
- Consistency and perseverance (Bellingrath, 1930; Pigors, 1935; Sheldon, 1927; Webb, 1915).
- Physical energy (Guilford, 1952; Powell, 1952).
- Success-oriented (Drake, 1944; Webb, 1915).
- Articulate and persuasiveness (Burnett, 1951; Flemming, 1935).
- Planning Skills (Colyer, 1951; Henry, 1949).
- Determination and courage (Fox, 1947; Henry, 1949; Roadman, 1964).
- Self-confidence (Bellingrath, 1930; Cattell & Stice, 1953; Cooley, 1902; Gibb, 1969; Guilford, 1952).
- Empathy with the group (Bell & Hall, 1954; Newcomer, 1955).
- Emotional balance and control (Ackerson, 1942; Caldwell & Wellman, 1926; Cox, 1926; Jennings, 1950).

Most of the current studies on leadership are related to adult leaders. Screening and identification instruments in leadership for elementary and secondary students are limited and in its infancy (Karnes & Meriweather- Bean, 1991). The identification should be done in primary level to develop the leadership skills of the students who have leadership potential (Hensel, 1991). It's clear that more proactive researches on the leadership development of youth should be done (Clark & Clark, 1994). Firstly, identification of students' leadership potential needs to be done. In Turkey it cannot be said that there are sufficient and qualified identification instruments for leadership in children.

As a result of the review in Turkey, whereas it was encountered scarcely to adapted scales assessing leadership skills of teenagers and children, it was not seen any unique and original identification instrument

for leadership potential. For this reason, developing a comprehensive, understandable and applicable leadership skills scale would be more functional. By focusing on youth leadership, it was intended to increase society's recognition of the need to give more attention to early development of leadership potential. In this study it's aimed to develop a leadership skills scale to identify children who have leadership potential. In accordance with this purpose, validity and reliability analysis of developed scale would be conducted.

Method

Participants

The research was conducted as a scale development study. In the study of development of leadership skills scale, the sample consists of randomly chosen 583 students attending to grades 6-8 during 2011-2012 academic years in Kocaeli. Leadership skills scale consists of 100 likert type items which was administered upon the 583 students in a class period by groups. The adequacy of obtained sample size was evaluated in the context of statistical analysis method, which was used in the study. There are many different views about sample size. Factor analysis is also used as a statistical analysis method in the study. Sample size should outnumber observed variable (question-statement) number for factor analysis (Akgül ve Çevik, 2005, 419). It's asserted that sample size should be at least five times larger than the number of observed variable (Albayrak, 2006, Bryman & Cramer, 1999; Tavşancıl, 2002). Therefore, it can be said that the sample used in the study is sufficient enough to conduct the relevant analysis because the draft scale contains 100 items and sample size is 583 students. The draft scale implementation was practiced in 14 primary schools in Kocaeli. As a result of the examination of obtained data one by one, it's detected that 12 were filled out incorrectly, leaving only 571 scales to be considered valid

The sample group of the study consisted of 259 girls (%45,4); 312 boys (%54,6), totally 571 students. 152 (%26,6) of students attends to grade 6, 207 (%36,3) grade 7; 212 (%37,1) grade 8.

Preparation and Implementation of Draft Form

First of all, theoretical framework was designated by doing literature review for the scale. The behaviors indicating leadership characteristics in that age group were determined in literature review. The literature review and instruments used in leadership studies were examined. As a result of the examinations, a comprehensive item pool was created in order to eliminate similar statements with the process of selective examination of all the statements. After that, created items were analyzed by two Turkish teachers to identify the semantic and grammatical errors. Necessary corrections were made on the draft form based on feedbacks. After necessary corrections, pilot application was carried out in order to determine whether statements were understood by students and the possible problems which could be confronted during the application process. During the pilot administration the items were reviewed with 20 students who are in 6th grade and got their opinions about the comprehensibility of items, method, quality, direction of answering, and what they understood from the items. Then these statements were re-edited complying with the writing rules of the items in order to express attitude. While preparing the direction of the scale it's emphasized that there were no right or wrong answers and even if there were, similar items would be marked regardless. Also, because of the desired or liked statements, they should mark not the wanted cases, but the real cases. Draft scale was submitted to subject area experts for the content validity. These experts study in education and leadership area. The opinions about comprehensibility of the questions, directions, and appropriateness for the purpose of the draft scale were taken in detail. As a result of the feedbacks from the specialists, the initial 113 items was cut down to 100. Items in draft scale prepared as 39 negative and 61 positive statements. 100 items in draft scale were distributed considering the order of positive and negative items in order to preclude the biases of the respondents

In order to express the compliance level of items, the draft scale was prepared as a 5 point likert type scale. Positive items are marked on a five point scale with a numerical value 5 to 1 like "Always appropriate for me =5", "Usually appropriate for me =4", "Sometimes appropriate for me =3", "Rarely appropriate for me

=2", "Never appropriate for me =1"; negative items were calculated reversely. It's assumed that in case of the high points from the scale the students had high leadership skills and if they were low, their leadership skills were low.

Data Collection

After obtaining the required permissions from MEB, the administrators of schools were informed about the study. Later the scale was implemented with the assistance of guidance counselors in schools during lesson period. Along with the scale a questionnaire including demographic information of students was handed out to students.

Data Analysis

For the validity analysis of the scale, content validity, construct validity and concurrent validity were carried out. Exploratory factor analysis was used in the construct validity of the scale. Factor structure obtained from exploratory factor analysis was tested for model fit by confirmatory factor analysis. For concurrent validity, it was calculated correlation between the scale and Roets Rating Scale for Leadership. Pearson product-moment correlation coefficient was used in order to determine item-total and item-reminder analyses for the inventory item-differentiation whereas independent samples t-test was used to compare 27 % of the lower-upper group item scores. Internal consistency, test-retest reliability, split half reliability were analyzed for reliability studies.

Results

The Validity Analysis of the Scale

In the study of the validity of scale, content validity, construct validity and concurrent validity were analyzed. Both exploratory and confirmatory factor analysis techniques were used in construct validity.

Content validity. Content validity, is about how well a test measures the behavior for which it is intended and it can be explained according to author view (Balcı, 1995). Specialist opinion was consulted to evaluate the leadership items in the form created for that purpose. Evaluation form includes 100 items and experts evaluated all items in terms of content and appropriateness. According to the evaluations from the experts, it's concluded that leadership skills scale (LSS) has sufficient content for assessing students' leadership skills

Exploratory factor analysis. Factor analysis is a class of procedures used for data reduction and summarization. It is a statistical technique aiming to explain with small number of factor by gathering variables measuring same structure or quality (Büyüköztürk, 2005: 123). In this study Principal Components with varimax rotation and Rotated Component Matrix technique that are most commonly used and easily interpretable was used to reduce variables and to reach significant conceptual structures in factor analysis (Büyüköztürk, 2005; Tavşancıl, 2002). Before examining the factor structure of Leadership Skills Scale (LSS), whether or not the suitability of data for factor analysis is checked by determining KMO (Kaiser-Meyer-Olkin) parameter and using Bartlett test

Table 1. KMO and Bartlett's Test Values

Statistic	Value
Kaiser-Meyer-Olkin Value	,896
Barlett Test Sphericity	19465,462
Sd	4950
P	,000

If the value of KMO is more than .05, the sample size is adequate. In the study .896 shows that this study's data is coherent in regards to factor analysis. Bartlett's Test proves that the measured variables come whether from a multidimensional variable or not. Significance level smaller than .05, all the values accepted as adequate for multidimensionality. It is significant that the test results of Bartlett Test 0,00 in this study. The variable used in this study is proved to be come from a multidimensional variable for the sample

In first factor analysis, 27 factor came up above 1 factor eigen value and explaining % 59.78 variance. Considering the criteria of factor loadings must be at least .30 (Meranda, 1997), the variances between two items factor loadings fit into two factors must be .10 were considered and factor analysis reapplied. In first phase, 20 items, and second phase 17 items were omitted. The items number cut down to 54 in the third analysis. With repeated analyses, when the items that have no place in factors or have proximal loads inseparably in more than one factors and items that have factor load below .35 eliminated, and finally, 41 items explaining %54.81 variance is summed up in 10 factors.

Factor loadings, the eigen value of items in 10 factors and explained variance percentage after rotated solution of leadership skills scale given in Table 2.

As a result of factor analysis, 10 factors determined and the factor load of the items are between 0.38-0.85 (Table 2). According to these results, it's agreed to accept these ten factors by considering the specialist opinions. These factors are named in order; "problem solving", "group dynamics", "timidity", "goal setting", "empathy", "leading", "anger management", perseverance", "creativity" and "speech communication". Also as a result of Pearson product-moment correlation coefficient analysis for determination of relation between subscales it's seen that the subscales are related to each other significantly (p <.01). The results are shown in Table 3.

Table 3. Correlation between Subscales

Factors	$\overline{X}$	SS	Problem Solving	Group D.	Timidity	Goal Setting	Empathy	Leading	Anger M.	Perseverance	Creativity	Speech
Problem Solving	24,38	5,22	1									
Group D.	24,87	3,77	,433**	1								
Timidity	9,20	3,88	,238**	,253**	1							
Goal Setting	17,93	4,10	,432**	,409**	,381**	1						
Empathy	9,94	2,16	,446**	,516**	,155**	,295**	1					
Leading	7,62	3,01	,402**	,244**	,265**	,392**	,204**	1				
Anger M.	5,63	3,30	,198**	,197**	,250**	,122**	,273**	,075	1			
Perseverance	8,87	2,62	,284**	,361**	,378**	,418**	,245**	,189**	,257**	1		
Creativity	6,35	1,74	,475**	,314**	,207**	,320**	,242**	,382**	,084*	,259**	1	
Speech	6,30	1,57	,375**	,331**	,234**	,353**	,272**	,231**	,148**	,183**	,233**	1

** p <0.01

Table 2. Factor Loadings and Eigen Values of The Scale

İtems	Factor Loadings									
	Fac.1	Fac.2	Fac.3	Fac.4	Fac.5	Fac.6	Fac.7	Fac.8	Fac.9	Fac.1
s11	,696									
s13	,662									
s8	,635									
s3	,634									
s10	,558									
s70	,531									
s66	,492									
s28	,442									
s56		,725								
s54		,686								
s57		,665								
s53		,651								
s59		,650								
s100		,458								
s99		,455								
s77			,700							
s79			,651							
s29			,633							
s80			,553							
s47				,672						
s45				,608						
s44				,436						
s38				,424						
s50				,404						
s24				,380						
s63					,667					
s85					,649					
s15					,625					
s55						,787				
s7						,695				
s51						,642				
s82							,859			
s61							,855			
s87							,567			
s88								,661		
s68								,590		
s90								,583		
s9									,669	
s76									,612	
s22										,714
s32										,486
Eigenvalue	3,55	3,41	2,30	2,09	2,06	2,04	2,02	1,83	1,66	1,46
E.Variance	8,66	8,32	5,61	5,11	5,03	4,99	4,93	4,48	4,06	3,58

Confirmatory factor analysis. According to Şimşek (2007), despite a scale gives very good results in the end of the exploratory factor analysis, it may not give the same results in the end of the confirmatory factor analysis. In this study, confirmatory factor analysis (CFA) was applied to the ten-factor construct obtained

from the scale's exploratory factor analysis. It is used to test whether measures of a construct are consistent with a researcher's understanding of the nature of that construct (or factor). CFA is an analysis method frequently used in model development and providing facilities (Jöreskog ve Sörbom, 1993). In the process of interpretation of latent variable analyses and creation of variables, considering LSS is multidimensional, the number of observable variable (item) explaining latent variable (factor) set as at least two (Kline, 1998).

In all LISREL analyses, Maximum Likelihood Method was used. Variable fit indices were used to evaluate model data fit. According to Beauducel and Wittman (2005) these indices present adequate information in evaluating the results of confirmatory factor analyses. As Gizir and Gizir (2005) cited, X^2 is a significant test evaluating absolute adequacy of model to database (Bollen, 1989) but x^2 is sensitive to test sample size and it gives unreliable results when sample size is above 200 (Schumacker and Lomax, 1996). On the other hand, for x^2 is a frequently used criterion, being X^2/df (degree of freedom) rate below 2 evaluated as a significant criterion indicating the model adequacy (Byrne, 1989). The fit statistics of the scale are seen in Table 4.

Table 4. Goodness of Fit Indices Of The Scale

Fit Index	X^2	df	X^2/df	CFI	NFI	NNFI	GFI	AGFI	RMSEA	RMR	Srmr	RFI
	1393,16	734	1,89	0.97	0.94	0.96	0.90	0.89	0.047	0.061	0.046	.93

To evaluate the goodness of fit of the defined model, the primary fit indices were determined Fit index taken into consideration is X^2. However X^2 is not a statistical evaluated itself alone. X^2 is calculated by proportioning with degree of freedom. As seen in Table 3, X^2=1393,16 and sd=734. When proportioned these values, X^2/sd is 1,8. In big sample size, the division below 3 means perfect matches, below .5 or more means acceptable match. Within this scope it can be said that X^2/sd ratio for first analysis is perfect match.

According to Şimşek (2007) being the results of CFI more than .90 indicates an adequate fit value, more than .95 indicates that a good fit value. The .97 CFI value indicates that study has a good fit value. Similarly being RMSEA and SRMR below .05 indicates a good fit value and below .08 indicates an acceptable fit value. When RMSEA examined it's seen that fit index at a level of 0.047 is obtained. Being RMSEA lower than .05 indicates perfect and lower than .08 indicates good and lower than .10 indicates weak. In this context it can be stated that the fit index done for first analysis is perfect. When continued to examination of fit indices, it's seen that GFI is .90 and AGFI is .89. Being GFI and AGFI indices above .95 indicates perfect match, above .90 indicates good fit. In the first analyses it's shown that GFI is good fit and AGFI is acceptable fit. Standardized sRMR's fit index is .046. Due to being RMR and standardized RMR below .05 indicates perfect fit the values of standardized RMR indicate perfect fit. NNFI appears to be .96. Due to being NNFI fit indices above .95 indicates perfect fit, NNFI has perfect fit. Also RFI value .93 indicates that analysis have a good fit. Hence, these values can be perceived as sufficient goodness of fit

On the other hand while interpreting the confirmatory factor analysis; values of Lambda (factor load), t and R^2 according to CFA are significant either. In CFA, t value shows whether the relation between latent variables and observable variables is significant or not. Critical t value, according to literature significance value for .05 is 1.96. In case of being obtained t value below mentioned 1.96 value, it's concluded that the relation between observable and latent variable isn't significant (Şimşek, 2007). t values obtaining variable values between 9.12 and 16.24 in LSS and these values are significant. As a result of confirmatory factor analysis obtained multiple correlation square (R^2) values gives variance explained in each variable (Şimşek, 2007). The latent variables have the exploratory values of observable variables between .17 and .58. Consequently, according to the result of the confirmatory and exploratory factor analyses conducted upon to test the construct validity of instrument, it can be said that the scale shows a ten factor construct.

Concurrent validity. After construct validity was examined, Roets Rating Scale for Leadership was used for concurrent validity. Concurrent validity refers to the degree to which two measures of constructs that theoretically should be related. Roets Rating Scale for Leadership (RRSL) is a one-factor, five point likert scale test consisted of 26 items prepared as self-evaluation for children between 10-18 ages (grades 5.-12)

(Roets, 1986:76-113). In original format the scale is filled as "1-Always", "2-Frequently", "3-Sometimes", "4-Occasionally", "5- Never". Total points vary between 0-78. In U.S.A. with 1057 people, average (X=48), standard deviation (d=13) and variance was found as 174.010. The scale was adapted to Turkish by Acar (2007) and Cronbach-alpha value of RRSL was found to be .86. Split half test reliability of the scale was found 74. Acar (1997) examined correlation between this scale and the scale of "Leadership: Skills and Behaviors" developed by Sisk (1987). It was found that r=.34, p<.01. The correlation coefficients between leadership skills scale and Roets rating scale for leadership are examined in Table 5.

Table 5. Correlation between LSS and RRTSL

	RRTSL	LSS
RRTSL	1	,687**
LSS	,687**	1

** $p < 0.01$

Positive and highly significant correlation was found between two scales' total points ($p < .01$). In accordance with these results, it can be said that leadership skills scale has the quality to measure the aiming purpose.

The Reliability Analyses of the Scale

Internal consistency coefficients, test-retest reliability and split half method was used for reliability studies. To determine the internal consistency of the scale, Cronbach Alpha coefficient was used. Internal consistency coefficient of leadership skills scale with 41 items was found .89. The internal consistency coefficients of subscales were seen to be obtained: problem solving .80, group dynamics .81, timidity .65, goal setting .64, empathy .70, leading .67, anger management .72, perseverance .55, creativity .58, speech communication .48.

The items of the scale were analyzed via computing item-total correlations and the independent samples t test values were computed to compare both the item and factor scores of upper and lower 27% groups. All item-total correlation coefficients fell within the range of .26 to .50 in the research. Likewise, all independent samples t test values for the difference between the scores of upper and lower 27% of the items and factors found out to be significant ($p<0.01$).

For the half split test reliability of the scale, scale is divided into two as half. Consisting of two forms from the first half and last half, Guttman Split-Half Coefficient was found as .81 and Spearman-Brow coefficient as .81 of leadership skills scale. The Cronbach Alpha Value of the first half is .83, the second half's Cronbach Alpha value is .80, the correlation of two halves is .81.

To test the reliability of the scale, test-retest technique was used. For that reason, 15 days intervals the test was reapplied to 37 student group. In the first and second application, when compared the subscale and total point correlations, test-retest scale point correlation was found out that r=.92. This result shows that between the average of first and second applications there isn't a significant difference.

Discussion and Conclusion

In this study, Leadership Skill Scale was developed in order to determine children's (6-7-8 grade) leadership skills. The statistical analyzes adequateness of the developed scale was provided in terms of both the number of students as well as the diversity of them. To achieve the final shape of the scale, 517 students participated in the study. The reliability and validity results show that the scale is appropriate to use in children. To validate the scale content validity, construct validity and concurrent validity were tested on the scale. KMO value (.896) shows that sample size of the study is sufficient for analysis.

Seven experts were consulted on the content validity. The first draft form of scale was shaped with 100 items by the views of experts who were consulted to establish content validity. 100 items on draft form

reduced to 41 items as a result of exploratory factor analysis and scale items were grouped into 10 factors that considered as sub-scales. These are Problem Solving, Group Dynamics, Timidity, Goal Setting, Empathy, Leadership, Anger Management, Perseverance, Creativity, and Speech Communication. Concurrent validity was calculated after examining the construct validity of the scale. Roets Rating Scale for Leadership was used for this purpose. The results show that there is a .01 point significant correlation between two scales.

Compliance of the scale to model was examined by confirmatory factor analysis. As a result of confirmatory factor analysis, t values ranged between 4.96 and 16.24 and being higher than 2.76 shows these are .01 point significant. In consequence of the analysis fit indexes were found as $\chi2=1393,16$ (sd=734, p.=.0000), $\chi2/sd=1,89$, RMSEA=0.047, RMR=0.061; SRMR=0.046, GFI=0.90, AGFI=0.89, CFI=0.97, NFI=0.94 and NNFI=0.96.Fit indexes are acceptable. From this aspect, the structure of the scale has acceptable fit index values. According to the internal consistency testing for determining the reliability of 41-item scale, Cronbach's alpha reliability coefficient .89, half split reliability coefficient .81 and test-retest test reliability coefficient was found .92. These values can be considered as substantially good (Özdamar, 1997). Therefore, the items of the scale are consistent with each other. Also as a result of the independent group t-test a significantly difference was found averages of sub and super groups of the scores obtained from items for all items. These evidences were regarded as another proof of the reliability of the scale.

The frame of the scale parallels with other leadership evaluation tools in literature. Leadership Skills Scale is a valid scale that measures the leadership skills with its' factor structure and correlations with some previously known variables. When it's considered with high reliability coefficient, a reliable and available tool was achieved. Thus the development of a suitable leadership scale for elementary education students in this research will make an important contribution to the field. The initial purpose of this study was reached within this scope.

Every research that will be held with this scale will contribute to the measuring even being more powerful. The scale should also be applied in other age groups with some regulations and the validity and reliability studies can be done. Proximal and remote predictive validity of the scale should be investigated. In addition, leadership potential should be evaluated with different method and techniques in different settings apart from academic environments.

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