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A Scale Development Study on Middle School Students' Resistance Behaviors

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Abstract

It is vital to detect the students' behaviors which can adversely affect the flow of learning process. Resistance behaviors are among the factors affecting the flow. It is important to determine these behaviors without mixing them with other behaviors however the number of the related studies is restricted. Therefore, it was thought that developing a scale for determining the students' resistance behaviors could contribute to the literature. Accordingly, the aim of the study was to develop such a scale. The sample of the research consisted of 1082 middle school students in central towns of Adana within 2017-2018 Education Year. Through the development of Students' Resistance Behaviors Scale-Student Form (SRBS-S), exploratory, confirmatory factor analyses and reliability analyses were conducted. At the end of the analyses a scale of 34 items and four dimensions was developed and the Cronbach Alpha values for these dimensions and the whole scale were between .78 and .90. Consequently, SRBS-S was found to be a reliable scale to be used to determine students' resistance behaviors.

Ortaokul Öğrencilerinin Direnç Davranışları Üzerine Bir Ölçek Geliştirme Çalışması

Makale Bilgisi

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Öz

Öğretim sürecini olumsuz etkileyen öğrenci davranışlarını belirlemek oldukça önemlidir. Direnç davranışları bu davranışlardan biridir. Bu davranışları diğer öğrenci davranışlarıyla karıştırmadan belirlemek önemlidir ancak bu konuyla ilgili yapılan araştırmaların sayısı kısıtlıdır. Bu bağlamda, öğrenci direnç davranışlarına yönelik bir ölçek geliştirmenin alanyazına katkı sağlayacağı düşünülmüştür. Araştırmanın amacı, böyle bir ölçek geliştirmektir. Araştırmanın örneklemini, 2017-2018 Eğitim-Öğretim yılında Adana'nın merkez ilçelerindeki 1082 ortaokul öğrencisi oluşturmuştur. Öğrenci Direnç Davranışları Ölçeği-Öğrenci Formu (ÖDDÖ-S) nun geliştirilmesinde, açıklayıcı, doğrulayıcı faktör analizleri ve güvenirlik analizleri yapılmıştır. Analizler sonucunda 34 madde ve 4 boyuttan oluşan bir ölçek geliştirilmiş ve bu boyutlara ve bütün yapıya yönelik Cronbach Alpha değerleri .78 ve .90 arasında bulunmuştur. Sonuç olarak, ÖDDÖ-S'nin, öğrenci direnç davranışlarını belirlemek üzere kullanılabilecek güvenilir bir ölçek olduğu görülmüştür.

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Introduction

Interventions within education could not be explained only by one specific reason. This could result from many factors such as teacher, the structure of curriculum, educational environment, student, administrators, and parents. In this picture, the effect of students who are at the center of teaching-learning process cannot be denied. The elements such as student's motivation, interest in education process, active participation, readiness etc., would be determinant of student's attitude towards teaching-learning process. Students not having these due to various reasons or feeling inefficient about them could emerge as resistance against teaching process and teacher. Throughout history, resistance behaviors have been much more identified with problems and bad behaviors; characterized as negative, rebellious, undesired. However, sociological and psychological theories put forward that overfitting could have adverse effects as well and resistance is an important social and political tool should be enhanced (Kearney & Plax, 1991). McLaren (1985, p.85), addressed resistance as student behavior which is symbolic, historical and possess a living meaning, stand up and involve a struggle with school culture and teaching process. It is assumed that students resist to school mostly feel independent from school, have feelings about questioning the purpose of school and reflect this as resistance. However, teachers and administrators generally interpret these students' behaviors as evil and apply discipline procedures (Hendrickson, 2012, p.37).

Students' behaviors such as standing up, staying passive in a way destroying the flow of learning-teaching process, sabotaging the process by planning in advance or without any plan, showing hostile attitudes towards teacher or other authorities could be accepted as indicators of student resistance. Yüksel (2004, p. 342) stated that students react to situations that do not match with their style of thinking or living and meet their expectations, these reactions turn into resistance. Resistance behaviors are the behaviors students mostly display when they feel angry, upset or out of the goings on in the classroom (Seidel & Tanner, 2013, p.586).

Student resistance behaviors are mostly mixed up with negative behaviors and used as synonyms. Yet, while negative behaviors could be sudden behaviors during an ongoing class activity, resistance behaviors contain determination with many sources (Sever, 2018, p. 127). Giroux (1983, cited in Erickson, 1984, p.538) also mentioned that not every negative behavior such as failure to do homework, fighting, drug-use, absence from school can be a sign of resistance. Moreover, it is seen that resistance behaviors involve a purpose; could be hidden in its way of occurrence or being displayed. Yüksel (2004, p.342) indicated that contrary to negative behaviors, resistance behaviors occur suddenly and at irregular intervals, resistance behaviors are planned beforehand and become permanent. Problematic behaviors are the behaviors displayed suddenly in various situations whereas resistance behaviors are purposeful ones exhibited knowingly and willfully (Sarı, 2018, p.227).

Resistance behaviors might be perceived as both negative and positive and classified in different ways. Abowitz (2000, p. 880) indicates that resistance is a complicated human communication style changing everyone involved creating either better adaptation or a completely hopeless situation. Burroughs, Kearney and Plax (1989, cited in Kearney & Plax, 1991) define resistance behaviors as either constructive or destructive. Constructive resistance behaviors contain behaviors not familiar as a concept and having results such as correcting teachers' misbehaviors, making constructive criticism, helping other students to learn. On the other hand, destructive resistance behaviors include more familiar behaviors such as cheating, not attending the class, not fulfilling given duties or distracting the teacher. Generally, many teachers think that resistance behaviors are destructive and prevent resisting students' and the others' learning as well (Seidel & Tanner, 2013, p.587). Another classification regarding resistance behaviors is as active and passive. McLaren (1985, p.87), defines active resistance rituals as students' intentional and conscious behaviors intended to delay or destroy teaching process, rules and norms while indicates passive resistance as behaviors aimed at sabotage dominant school order in an unconscious or hidden way. Within this study, both active and passive resistance behaviors were based on and much more destructive behaviors were handled.

Students' attitudes within teaching-learning process effect many fields such as the effectiveness of teaching, teachers' job satisfaction. Therefore, analyzing the resistance behaviors of students and activities for finding solutions could be vital in terms of not having any troubles within education process, not preventing resisting or not resisting students' learning, teachers' having more constructive attitudes. Besides, the result of students' resistance behaviors could be more dangerous. When the student's resistance behaviors are not detected and not any precautions are taken, this could turn into a violence situation (Başar, 1991, p.148). In order to prevent these behaviors could have very serious results and hinder learning process, revealing these behaviors seems critical.

Student resistance behaviors could be related to different variables effecting teaching process and education itself. However, these behaviors are much more associated with teachers' personal characteristics and behaviors (Zhang, Zhang & Castelluccio, 2011, p.451). In this regard, teachers encounter resistance behaviors very frequently. Seidel and Tanner (2013) emphasized teachers' false behaviors as well in addition to peer interaction, students' own experiences and expectations while explaining the main reasons for student resistance in the university. When the effect of teachers through teaching-learning process was considered, it seems obvious that they could have effects on transformation of students' behaviors into resistance. Similar experiences could be seen with primary and middle school students as well. In this respect, realizing resistance behaviors against teachers and producing strategies for dealing with them could be significant for a healthier education process. Within this context, it was planned to develop a scale to show the frequency of students' resistance behaviors and which are the most frequently displayed. Therefore, the main research questions were: Which resistance behaviours are the most frequently displayed and how frequently are they displayed?". Based on these questions, a scale development process was conducted.

Method

Research Design

This study is scale development research regarding determining the middle school students' resistance behaviors they exhibit in their schools. Scale development consists of many steps and procedures. Carpenter (2018) put forwards ten steps in scale development; which are: 1. Research the intended meaning and breadth of the theoretical concept, 2. Determine sampling procedure, 3.Examine data quality, 4. Verify the factorability of the data, 5. Conduct common factor analysis, 6. Select factor extraction method, 7. Determine number of factors, 8. Rotate factors, 9.Retain and delete items based on a priori criteria, 10. Present results. Such as Carpenter, DeVellis (2014) puts forward some principles for scale development process. Some of these principles are; puttin forward the structure will be measured, preparing an item pool, determining the type of measurement, getting expert opinion, etc..

Within this study, based on these steps, some phases were followed as well. These were;

- Literature review and putting the theoretical background; then forming an item pool
- Expert opinion
- Pilot study
- Application of the scale for exploratory factor analysis
- Exploratory factor analysis and reliability analyses
- Retain and delete items based on a priori criteria
- Application of the scale for confirmatory factor analysis
- Confirmatory factor analysis and reliability analyses
- Retain and delete items based on a priori criteria
- Present results

After exploratory and confirmatory factor analyses, the results were reported in detail below.

Study Group

The target population of the study consisted of 6th, 7th and 8th graders in middle schools in central towns of Adana in 2017-2018 Education Year. Among these schools, state schools with low, middle and high socio-economical level were chosen via stratified cluster sampling method. In the study, there were two samples, one for exploratory factor analysis (EFA) and the other for confirmatory factor analysis (CFA). The detailed information about these processes was presented below.

Group 1: Exploratory factor analysis: The data for exploratory factor analysis was collected in six state schools as two from each socio-economical level (low-middle-high) determined through the processes explained above.

In these schools, the volunteer students in one randomly assigned class at each grade level (6th, 7th and 8th grades) constituted the sample. Then, 558 students participated in the study. The mean age of the students was 13.03 while the standard deviation was 1.03. The demographic information of students was presented on Table 1.

Table 1. Demographic Information about the Participants in Sample I

		F	%
Sex	Female	284	50.9
	Male	274	49.1
Grade	6th Grade	188	33.7
	7th Grade	166	29.7
	8th Grade	204	36.6

N=558, Age average =13.03 (Sd=1.03)

Group 2: Confirmatory factor analysis: Within confirmatory factor analysis, to collect the data six state schools having low, middle and high socio economical level were chosen. In these schools, 524 volunteer students in one randomly assigned class at each grade were the participants of the study. The age average of students (10-15 years) was 12.95. Their personal information was shown on Table 2.

Table 2. Personal Information about the Participants in Sample II

		F	%
Sex	Female	252	48.1
	Male	261	49.8
	No answer	11	2.1
Grade	6th Grade	170	32.4
	7th Grade	208	39.7
	8th Grade	146	27.9

N= 524, Age average = 12.95 (Sd=.96)

Data Collection

At the beginning of development process of SRBS-S the steps to be followed for a scale development were analyzed from sources within literature (Erkuş, 2007; Güngör, 2016; Karakoç & Dönmez, 2014; Şahin & Boztunç-Öztürk, 2018; Tavşancıl, 2014; Tezbaşaran, 1996). Moreover, the literature was analyzed regarding the classifications made for resistance behaviors. In line with these analyses, it was found that resistance behaviors are mostly classified as active and passive or constructive and destructive; under these classifications resistance behaviors against teachers and their authority, hostile behaviors towards them, passive resistance were some types of resistance behaviors (McLaren, 1985; Sever, 2018; Kearney & Plax, 1991; Seidel & Tanner, 2013). Hence, preparing the item pool, these categories were taken into consideration. After definition of student resistance and theoretical explanations were examined, an item pool with 75 items was prepared. For this item pool expert opinion was provided by six instructors in Çukurova University Faculty of Education Educational Sciences Department and two teachers. According to their views, some changes were applied to the statements of some items, eight items were subtracted and four items were added. This pilot form of 71 items was checked for language and expression conducted to a group of middle school students. In line with this pilot study, some items were revised. As a result of all these studies, the last version of the form was applied to 558 students chosen in six middle schools and data was collected. After the exploratory factor analysis conducted on this data a structure of 34 items and 4 factors were obtained. These factors were "Hostile Attitudes Towards Teacher", "Continuous Anger", "Resistance to Teacher Authority" and "Passive Resistance". The reliability values for both subscales and total scale scores were calculated. In order to conduct confirmatory factor analysis, 34-item form was reapplied to 524 students in sample II. Conducting CFA on these data, the structure obtained by EFA was tested.

Data Analysis

Within the validity and reliability studies of SRBS-S, for reliability Cronbach Alpha analysis via SPSS Package Program (17.0), for content validity expert opinions and as for construct validity exploratory and confirmatory factor analyses were used. Moreover, mean and standard deviation values and item-total score correlations of items were examined as well.

Findings

Findings regarding construct validity and reliability of SRBS-S

In this study, concerning the construct validity and reliability of SRBS-S, exploratory and confirmatory factor analyses were conducted and the related findings were presented below.

Results regarding exploratory factor analysis

Before starting factor analysis on data collected from 558 students in sample I, firstly missing and extreme values were examined for preparing the data for analysis. Therefore, for each participant, Mahalanobis distance and z standard scores were analyzed over total scores. As a result of these analyses, 51 participants with very extreme values were decided to be excluded from analyses and factor analysis was conducted on the data from 507 students. At the beginning of this analysis, the Kaiser-Meyer-Olkin (KMO) coefficient and Barlett Sphericty test results were examined in order to examine the suitability of the data for analysis and these values were found to be statistically significant (KMO = 0.90; Barlett Sphericty testi $\chi 2 = 5123.305$, df = 561, $p<.001$). In addition, skewness and kurtosis values of the items included in the scale were analyzed. Through this analysis, + 1 interval was taken as criterion (Çokluk, Şekercioğlu & Büyüköztürk, 2014, 16). Within the conducted analyses, evaluating the items, item-total score correlations, communalities, factor loads (min .40) and the differences between the loads of items loaded on more than one factor (min. .15) were analyzed and as a result 51 items were required to be removed. These operations were carried out using principal components factor extraction method and orthagonal (varimax) rotation process. The analysis process is presented in detail below.

The first results of factor analysis showed that the scale consisted of 18 factors with eigenvalue above 1.00. Eigenvalue, number of items, the percent of contribution to total variance and scree plot were among the criteria suggested to be used for determining the number of factors (Büyüköztürk, 2002; Çokluk, Şekercioğlu, Büyüköztürk, 2014; Güngör, 2016; Kalaycı, 2009; Stevens, 2009; Tavşancıl, 2014). According to these criteria, when the first analysis results were examined, it was observed that six of the factors showed up consisted of only one item each, items were loaded above .30 on other factors as well within several factors and these loads were very close to each other. When eigenvalues of factors were analyzed, it was seen that eigenvalues of first four factors were above 2.00, the others' were getting closer to 1.00. Evaluating the criterion of contribution to explained variance, it was obvious that first eight factors' contribution was above 2.054, first four factors' contribution was above 3.356; while the rates of explained variance by the rest of factors were seem to get lower significantly. The other criterion taken into consideration through determining the number of factors was analysis of scree plot. According to Büyüköztürk (2002), the point that there are decreases at higher acceleration rate indicates the number of significant factors. The break point of the graphic was between 4. and 5. factors (Figure 1).

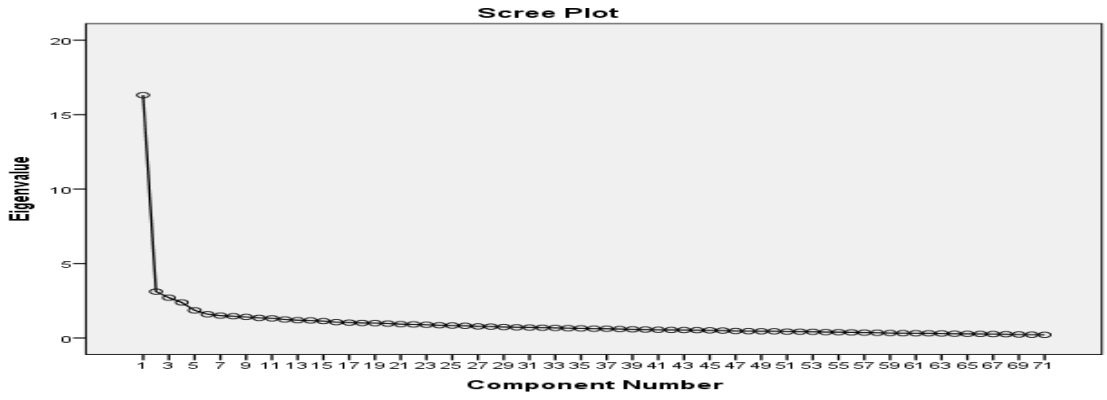

Figure 1. *Scree Plot Obtained at the End of First Analysis*

Besides all these examinations, considering that the item pool prepared in line with theoretical explanations regarding student resistance behaviors also consisted four different resistance dimensions, it was determined that factor numbers should be four within the rest of analyses. In scree plot, it was seen that the breaking point at the 4th factor was very clear. (Figure 2).

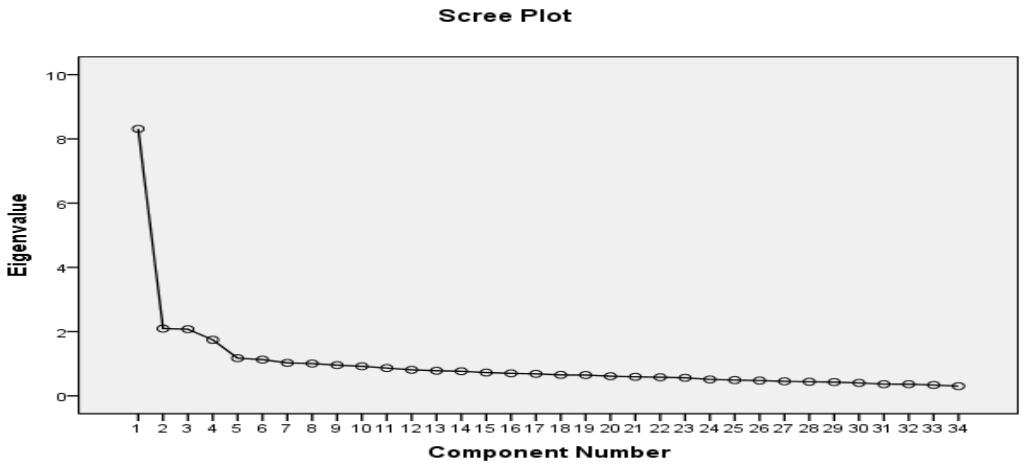

Figure 2. *Scree Plot of the Last Analysis*

After the factor analyses were completed, the reliability analyses of the scale were also carried out. Factors, factor loads, eigenvalues, explained variance percentages by factors and Cronbach Alpha internal consistency coefficients; item-total score correlations (r), communalities, mean and standard deviation values of items were presented on Table 3.

Table 3. Factors, Factor Loads, Percentages of Explained Variance by Factors, Item-total score correlations (r), Communalities, Mean and Standard Deviation Values of Items in SRBS-S

New Item Number	CFA. No	F1	F2	F3	F4	r*	h2**	$\overline{X}$	Sd
1	M1	.66				.57	.47	1.42	.81
2	M5	.64				.62	.54	1.67	1.15
3	M9	.62				.52	.43	1.77	1.23
4	M13	.62				.53	.50	1.41	.81
5	M17	.55				.47	.35	1.31	.68
6	M21	.53				.53	.39	1.54	.97
7	M25	.53				.51	.37	1.61	1.00
8	M28	.52			.32	.43	.40	1.35	.74
9	M30	.52	.35			.54	.40	1.74	1.11
10	M32	.50	.35			.50	.38	1.67	1.10
11	M33	.45	.34			.52	.37	1.68	1.08
12	M34	.38				.47	.30	1.47	.88
13	M2		.77			.66	.63	2.62	1.62
14	M6		.73			.64	.60	2.73	1.54
15	M10		.67			.57	.49	2.84	1.54
16	M14		.63			.53	.48	2.02	1.27
17	M18		.63			.55	.46	2.50	1.51
18	M22		.40			.42	.33	1.85	1.14
19	M3			.57		.49	.40	1.62	.973
20	M7	.31		.57		.44	.42	1.53	.89
21	M11			.56		.39	.36	1.52	.86
22	M15	.34		.55		.49	.44	1.66	1.05
23	M19	.34		.54		.46	.43	1.77	1.15
24	M23			.50		.42	.36	1.75	1.07
25	M26			.48	.33	.41	.36	1.57	.96
26	M29			.48		.34	.32	2.63	1.22
27	M31			.43		.31	.27	2.48	1.28
28	M4				.68	.58	.57	1.59	1.05
29	M8				.66	.49	.45	1.52	.90
30	M12				.63	.49	.47	1.68	1.07
31	M16				.59	.35	.41	2.04	1.29
32	M20	.31			.48	.43	.37	1.65	1.01
33	M24				.47	.38	.32	1.78	1.14
34	M27				.42	.33	.25	1.57	.86
Eigenvalue		8.313	2.095	2.076	1.745	Total			
Variance %		24.45	6.16	6.10	5.13	41.85			
Cronbach Alpha		.85	.80	.73	.72	.89			

*r: Item-total score correlations, **h2 : Mutual factor variance (communality)

Notes: To follow more easily factor loads under .30 were not shown on the table. F1: Hostile Attitudes Towards Teachers, F2: Continuous Anger, F3: Resistance to Teacher Authority, F4: Passive Resistance

The first factor obtained as a result of exploratory factor analysis was "Hostile Attitudes towards Teachers" dimension consisting of behaviors students feel and consciously exhibit towards their teachers. Some of the items within this factor were as: "I intentionally break the classroom rules, I frequently gibe to some teachers, I incite my classmates against teachers I don't like." The number of items in this factor was 12 (Item no: 1-2-3-4-5-6-7-8-9-10-11-12). The factor loads of items ranged between .38-.66; while item-total score correlations were between .43-.62. Cronbach Alpha value for this dimension was .85.

The second factor of SRBS-S included the items reflecting the students' anger and aggressiveness towards teachers, named as "Continuous Anger". Through this dimension, six items (Item no: 13-14-15-16-17-18) such as "Teachers' mistakes make me very angry, I get angry very quickly at school, some teachers annoy me too much". These items' factor loads were changing between .40-.77, on the other hand the item-total score correlations were between .42-.66. Cronbach Alpha coefficient was .80 for this dimension.

"Resistance to Teacher Authority" was the third factor of the scale. Some of the nine items (Item no: 19-20-21-22-23-24-25-26-27) in this dimension were as "I try to push some teachers' limits, I do intentionally not bring my stuff for some courses, I mostly think that I'm right against teachers". The factor loads ranged between .43 and .57; while item-total score correlations were between .31-.49. Cronbach Alpha value was calculated as .73.

Within the last factor of SRBS-S, seven items (Item no: 28-29-30-31-32-33-34) including students' behaviors such as not attending the teaching process on purpose, showing a hidden resistance towards teacher. Some of the items in "Passive Resistance" were: "I prefer sitting at desks that teacher could hardly see me, I do not like to attend to lesson even if I am interested in the topic, and I do not like to talk about the topic in the lesson". The factor loads of items were between .42 and .68. Item-total score correlations ranged between .33-.58 while Cronbach Alpha of this factor was .72.

Four factors of scale explained 41.85 % of total variance. Cronbach Alpha internal consistency coefficient for the whole scale was .89. Mean values for 34 items in the scale ranged between 1.31 and 2.63; standard deviation values were between .68 and 1.62. Items' factor loads ranged between .38-.77, mostly seem to be loaded under the related factor. However, in the first factor 11th item, within the third factor item 2 and item 32 in the fourth factor loaded on two different factors and there was .10 difference between these loads. Yet, it was considered to keep these items where they were as they were more compatible with the factors they loaded more and they matched with the items semantically. Furthermore, it was also seen that it is accepted in some resources to have at least .10 difference between the loads of items loaded on two different factors (Büyüköztürk, 2005; Tavşancıl, 2014).

Results regarding confirmatory factor analysis

The data for Confirmatory Factor Analysis of scale were collected from 524 students in Sample II. Before conducting factor analysis on collected data, primarily missing values and outliers were examined to prepare the data for analysis. As a consequence of these examinations data from 21 students determined to include outliers were removed from the analyses, then the factor analysis was conducted on 503 students. Through confirmatory factor analysis, the validity of the structure revealed within exploratory factor analysis. The structure with four factors and the fit indexes regarding this structure were presented on Figure 3 and Table 4. It was seen that fit indexes of SRBS-S for 34 items and four dimensions were significant and mostly showed good fit ($X2=1204.87$, $df=495$, $p=.000$, $X2/df=2.43$).

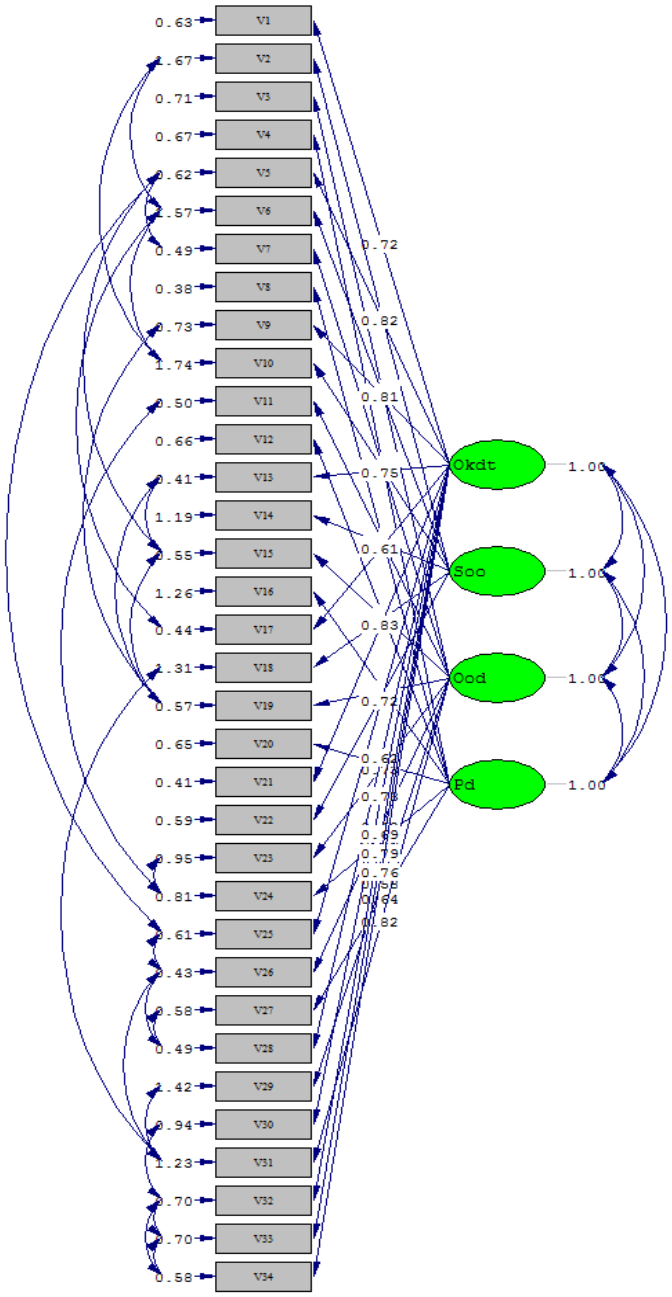

Figure 3. *Confirmatory Factor Analysis Results for Student Resistance Behaviors Scale-S Form*

Okdt: F1, Söo: F2, Öod: F3, Pd: F4

Table 4. Fit Indexes and Good Fit Values of the Scale

Fit Indexes	Good Fit Values	Acceptable Fit Values	Acquired Values
*X2/df	0≤ X2/df≤2	2≤ X2/df≤3	2.43
*P value	0.05≤p≤1	0.01≤p≤0.05	.000
*RMSEA (Root Mean Square Error of Approximation)	0≤RMSEA≤0.05	0.05≤RMSEA≤0.08	0.05
*NFI (Normed Fit Index)	0.95≤NFI≤1.00	0.90≤NFI≤0.95	0.97
*NNFI (Non-Normed Fit Index)	0.97≤NNFI≤1.00	0.95≤NNFI≤0.97	0.98
*SRMR (Standardized Root Mean Square Residual)	0≤SRMR≤0.05	0.05≤SRMR≤0.10	0.05
*GFI (Goodness of Fit Index)	0.95≤GFI≤1.00	0.90≤GFI≤0.95	0.88
*AGFI (Adjusted Goodness of Fit Index)	0.90≤AGFI≤1.00	0.85≤AGFI≤0.90	0.85
*CFI (Comparative Fit Index)	0.97≤CFI≤1.00	0.95≤CFI≤0.97	0.99
*RFI (Relative Fit Index)	0.90≤RFI≤1.00	0.85≤RFI≤0.90	0.97
**IFI (Incremental Fit Index)	0.90≤IFI≤1.00	0.80≤IFI≤0.90	0.99
**RMR (Root Mean Square Residual)	0≤RMR≤0.05	0.05≤RMR≤0.08	0.078

*Schermelleh- Engel-Moosbrugger, 2003 (cited in Özabacı, 2011); ** Nayır, 2013

As seen on Figure 3 and Table 4, the fit indexes regarding confirmatory factor analysis were significant. When the fit values obtained for the scale were compared to standard values, X2/df, RMSEA, SRMR, RMR, GFI and AGFI values had acceptable fit values whereas NFI, NNFI, CFI, RFI and IFI were the ones showed good fit.

Regarding the last structure acquired by confirmatory factor analysis, reliability analysis was carried out again. According to these analyses, Cronbach Alpha internal consistency coefficient were calculated; for Hostile Attitudes Towards Teacher dimension .90, for Continuous Anger .78, for Resistance to Teacher Authority .84 and for Passive Resistance .81. Cronbach Alpha value for the whole scale was .94. Looking at these values, it was observed that internal consistency coefficients were high for both sub-scales and the whole scale.

The correlation matrix belongs to Student Resistance Behaviors Scale-S Form (SRBS-S) total scores and subscales and mean, and standard deviation values were shown on Table 5.

Table 5. Correlation matrix, Mean and Standard Deviation Values belong to Student Resistance Behaviors Scale-S Form (SRBS-S) Total Scores and Subscales

	1	2	3	4	X	Sd
1. Hostile Attitudes Towards Teacher	-				1.81	.53
2. Continuous Anger	.64**	-			2.13	.70
3. Resistance to Teacher Authority	.71**	.64**	-		1.64	.56
4. Passive Resistance	.68**	.64**	.62**	-	1.91	.64
5. SRBS-S Total Scores	.90**	.82**	.86**	.84**	1.84	.51

N= 507, **p<0.01

It is seen on Table, four subscales of SRBS-S showed significant correlations with each other and total scores (p<0.01). Hostile Attitudes Towards Teacher dimension had significant correlations with the other dimensions

respectively .64, .71, .68 and total scores .90. Continuous Anger dimension's significant correlation values with the other dimensions were .64, .64 and total scores .82; while Resistance to Teacher Authority had significant correlations with Passive Resistance dimension as .62 and total scores as .86. Passive Resistance subscale showed significant correlations with total scores at the value of .84. Mean values for the subscales ranged between 1.64 and 2.13 whereas standard deviation values were between .51 and .70.

Answering and scoring Student Resistance Behaviors Scale-Student form

SRBS-S as a tool could be used to determine the existence and frequency of resistance behaviors primary and middle school students exhibit is a 5 point Likert scale (1. Strongly Disagree, 2. Disagree, 3. Don't Know, 4. Agree, 5. Strongly Agree). There are 34 items in the scale. Through these items, the resistance behaviors of students were stated and they were asked to mention whether they agree with them or not. As all the items consisted of negative statements, there is no need to make any transformations. High scores on the scale imply that students frequently exhibit resistance behaviors. The highest score could be got from the scale is 170 points while the lowest score is 34. When the scoring is done for subscales, for the first subscale "Hostile Attitudes Towards Teacher" with 12 items from 12 to 60 points, for "Continuous Anger" subscale with 6 items between 6-30 points, for "Resistance to Teacher Authority" with 9 items from 9 to 45 and for "Passive Resistance" subscale with 7 items from 7 to 35 points were the scores could be got. In order to interpret the scores, each subscale score should be divided by item numbers to transform 1-5 scale. The interpretation about the scale mean values is as 1.00-1.80 "very low resistance"; 1.80-2.60 "low resistance"; 2.60-3.40 'medium'; 3.40-4.20 'high'; 4.20-5.00 'very high'.

Discussion and Conclusion

As a result of exploratory and confirmatory factor analyses regarding SRBS-S developed within this research, a structure of four factors which are "Hostile Attitudes towards Teachers", "Continuous Anger", "Resistance to Teacher Authority", "Passive Resistance" was obtained. The resistance behaviors mentioned within 34 items in the subscales are compatible with the behavior types could mostly be destructive and shown actively or passively throughout the teaching process as also explained in the literature (McLaren, 1985; Sever, 2018; Kearney & Plax, 1991; Seidel & Tanner, 2013). Therefore, it could be asserted that the items within four subscales also compose a comprehensive structure regarding resistance behaviors.

The values obtained by the reliability and validity studies of the scale are seen as complying with the accepted values within literature. Firstly, sample size for exploratory and confirmatory factor analyses was matching the suggestions through literature (Tabachnick & Fidell, 2001; Gorsuch, 1997; Büyüköztürk, 2002). The factor loads within exploratory factor analysis were between .38-.77. However, apart from several items factor loads were mostly around .45 and above. Büyüköztürk (2002) indicated that factor loads between .30 and .59 are at medium level and values could be accepted for a scale, and values as .60 and above could be accepted as high. Also within SRBS-S scale, items' factor loads seem to be medium and high values. Besides, explained variance value for the whole scale was found as 41.85 %. For the analyses in social sciences, 40% and above is stated as acceptable values (Scherer, Wiebe, Luther & Adams, 1988; Çokluk, Şekercioğlu & Büyüköztürk, 2014). The correlations between the factors of scale and the factors and total scores were calculated as well. It was observed that the factors (subscales) had a lower significant correlation (at medium level) with each other, while they had a high significant correlation with total scores.

As for reliability of the scale, Cronbach Alpha internal consistency coefficients were calculated. These coefficients were calculated after both exploratory and confirmatory factor analyses. While after exploratory factor analyses these values were .85, .80, .73, .72 for subscales and .89 for the scale, the values calculated after the confirmatory factor analyses were .90, .78, .84, .81 for subscales and .94 for the whole scale. These reliability values are seen as parallel to the accepted values within the literature (Çokluk, Şekercioğlu & Büyüköztürk, 2014; Nunnally & Bernstein, 1994; Pallant, 2001; Downing, 2004).

The structure of four factors obtained by exploratory factor analysis was tested by conducting confirmatory analysis. Primarily, Chi-Square goodness of fit value (X2/Sd) was 2.43. This value is interpreted as good fit in many sources within the field (Çokluk, Şekercioğlu & Büyüköztürk, 2014; Barrett, 2007). The other fit indexes (GFI, AGFI, CFI, NFI, NNFI, RMSEA, etc.) also match the accepted values through literature (Schermelleh-Engel-Moosbrugger, 2003, cited in Özabacı, 2011; Nayır, 2013; Hooper, Coughlan & Mullen, 2008; Barrett, 2007; Jöreskog & Sörbom, 1993; Sümer, 2000; Tabachnick & Fidell, 2001; Harrington, 2009).

When exploratory and confirmatory factor analyses were examined together, it is seen that all the values are compatible with the literature and the scale structure obtained point out a valid and reliable scale. In this respect, SRBS-S could be used in studies would be conducted to put forward students' resistance behaviors. Moreover, it could be used as a tool in other studies dealing with different variables with resistance behaviors. Revealing the students' resistance behaviors deeply influencing student learning forms the basis for the studies related to preventing or decreasing the resistance behaviors. With respect to this, this scale is considered to be vital in terms of determining the frequency and level of students' resistance behaviors.

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