

Elementary School Student Burnout Scale for Grades 6-8: A Study of Validity and Reliability

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Abstract

The purpose of this study is to develop an "Elementary School Student Burnout Scale for Grades 6-8". The study group included 691 students out of 10 schools in Eskişehir. Both Exploratory Factor Analysis and Confirmatory Factor Analysis were conducted on the data (Burnout stem from school activities, burnout stem from family, feeling of insufficiency in school, lack of interest towards school). A four factor solution was emerged with 26 items. These four factors explain 59 % of the total variance. Factor loadings ranged from .42-.81. Cronbach Alpha reliability coefficient for the sub-dimensions ranged from the lowest .76 to the highest .92. Split-half correlation coefficient for the sub-dimensions ranged from .65 to .81. The model indices emerged from the Confirmatory Factor Analysis [GFI=0.94, AGFI=0.91, PGFI=0.89, RMSEA=0.07, CFI=0.91; [$\chi^2=787.6$, $df=293$, $p<.01$]] indicated that there was a good fit. To establish criterion validity of the scale, "Academic Expectations Stress Inventory" was used. The correlation coefficients between the two scales as well as among the sub-dimensions of the scales varied from the lowest .20 to the highest .38.

Key Words

Burnout, School Burnout, Student, Confirmatory Factor Analysis.

Freduenberger defines burnout as failure, attrition or exhaustion as a result of the excessive use of power, energy, and other individual sources (Maslach, Schaufeli, & Leiter, 2001; Seidman & Zager, 1991). Professions that require intensive and permanent contact with human beings are thought to be inclined to develop burnout syndrome and uner risk concerning burnout (Farber & Miller, 1981; Van Horn, Schaufeli, & Enzmann, 1999) studies focused on these professional areas (Dyrbye, 2008; Hiscott & Connop, 1989; Huebner, 1992; Kaçmaz, 2005; Malanowski & Wood, 1984). However, over time studies extended to cover all the professions (Pines & Guendelman 1995; Shirom, 1989). Health and educational burnout research based on three strands: Organization, profession/work and individual (Grayson & Alvarez, 2008). Teacher and other school personnel burnout have been widely stud-

ied (Akçamete, Kaner, & Sucuoğlu 2001; Bakker & Schaufeli, 2000; Cemaloğlu & Kayabaşı, 2007; Farber & Miller, 1981; Friedman, 1999; Greenglass, Fiksenbaum, & Burke, 1994; Huebner, 1992; Ross, Altmaier, & Russell, 1989; Russell, Altmaier, & Van Velzen, 1987; Sandoval, 1993; Sucuoğlu & Kuloğlu 1996; Tatar & Horenczyk, 2003). That the main reason for that is burnout was defined as psychological processes in the dual structure between work and worker (Yang & Farn, 2005).

Burnout in Educational Settings

A quite large number of studies on school personnel assume that school alone might be a factor that produces stress (Chang, Rand, & Strunk, 2000). There are debates whether burnout syndrome could be observed among students or not (Maslach et al., 2001). Students could be directly influenced by the problems in school and thus they might develop burnout (Grayson & Alvarez, 2008; Howes, Matheson, & Hamilton, 1994; Tatar & Horenczyk, 2003; Woodrum, 2005).

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Although the effects of education and schools on students' social and psychological development are the subjects of many studies (Kuperminc, Leadbeater, & Blatt, 2001; Normandeau & Guay, 1998; Rigby, 1999; Schunk, 1991), burnout syndrome found a limited space on student based educational research (Friedman, 1999; Schwab, Jakson, & Schuler, 1986). School might be seen as a workplace for students (McCarthy, Pretty, & Catano, 1990; Salmela-Aro, Savolainen, & Holopainen, 2009; Yang & Farn, 2005). That the reason for that is students have been required to fulfill many responsibilities related to school (Balogun, Helgemoe, Pellegrini, & Hoerberlein, 1996; Chambel & Curral, 2005; Fimian Fastenau, Tashner, & Cross, 1989). Research that aims to determine burnout levels focused on college students (Bernhard, 2007; Fimian et al., 1989; Meier & Schmeck, 1985). The focus of the bulk of the research is specifically on medical and nursing schools (Cordes & Dougerthy, 1993; McCranie & Brandsma, 1988; Pick & Leiter, 1991; Turnispeed, 1998).

School burnout describes excessive demands of schooling and education over students. In learning process, stress emerged from courses, heavy coursework or other psychological pressures may lead to emotional exhaustion, desensitization tendency, and feeling of low achievement. School burnout, in turn, may lead to absenteeism, low motivation to courses, and high dropout rates (McCarthy et al., 1990; Yang & Farn, 2005). Laursen et al. (2010) argue that school culture is crucial in understanding burnout syndrome. Their findings indicated that peer groups that experience burnout in school are usually fail and they may also develop some kind of antipathy towards more successful colleagues. Dyrbye et al. (2009) findings also point out some clues on the seriousness of the possible results of feeling of burnout in schools.

Students usually face pressures to get better education and grand point of average at all levels of education around the world and in Turkey. Students have always to spend more time to study and solve more tests in order to achieve from early on in their educational lives. Their parents and teachers have high achievement expectations from them while continuously reminding them to study more systematically (Yıldırım & Ergene, 2003). Thus, even beginning with the elementary educational level before approaching to secondary level, they may face higher levels of burnout syndrome. However, little or no research carried out on the burnout syndrome in elementary and secondary level on students (Erturgut & Soysekerci, 2010).

Burnout Inventories and School Burnout

Once the idea that students may face burnout syndrome is acknowledged from Maslach Burnout Inventory-Student Survey (MBI-SS) out of Maslach Burnout Inventory-General Survey (MBI-GS) was adapted (Schaufeli, Martinez, Pinto, Salanova, & Bakker, 2002). MBS-SS adapted by only replacing the words like "worklife" with "school" from the MBI-GS. For example, "work" or "working" replaced by "studying." A similar study was carried out by Salmela-Aro and Näätänen (2005). "School Burnout Inventory" (SBI) adapted from the Bergen Burnout Indicator 15 (BBI-15) was also developed originally to measure burnout in the work life. The adaptation process was similar to Schaufeli et al.' (2002) research. The finally research on school burnout inventory was carried out by Salmela-Aro, Kiuru, Leskinen, and Nurmi (2009). In this study, reliability and validity analyses of Salmela-Aro and Näätänen's (2005) inventory conducted. A three factor solution was emerged in all the inventories (Exhaustion, Cynicism and Efficacy). The only difference among the studies this time the contexts were schools rather than workplaces.

As it might be inferred from the studies summarized earlier, none of the inventories used to measure school burnout was developed directly to measure student burnout in school contexts. It is crucial to determine sources, reinforcers, and psychological effects on students for both student health and functions of educational systems (Grayson & Alvarez, 2008). However, this may require the use of inventories or questionnaires that are developed directly in school contexts. Thus, it is important to develop measurement instruments for specifically designed to measure burnout of students at all levels of education. The purpose of this study is to develop a valid and reliable instrument for measuring school burnout of students in secondary education in Turkey.

Method

Study Group

The study group included ten public primary elementary school students (6th -8th grades) in Eskişehir, Turkey. Participation was voluntary and 691 students filled out the questionnaires. Out of 691 students, 371 (54 %) were girls while 320 (46 %) were boys. 261 (38%) were in the 6th grade, 236 (34%) were in the 7th, and 194 (28 %) were in the 8th grade.

Data Collection Instruments

The concept of burnout was defined as a syndrome with three dimensions (Maslach & Jackson, 1981). They are: Exhaustion (Sweeney & Summers, 2002), cynicism (Vasalampi, Salmela-Aro, & Nurmi, 2009) and efficacy (Jacobs & Dodd, 2003; Maslach et al., 2001; Salmela-Aro, Savolainen et al., 2009). Kelecioğlu & Bilge (2009) argued that in addition to students' own expectations, parents' and teachers' expectations played an important role for students to experience stress. When they fail to meet these expectations, students face a negative influence on their self-confidence and self-respect. Thus, Academic Expectations Stress Inventory (Kelecioğlu & Bilge, 2009) was used to check the criterion validity of the school burnout scale.

Academic Expectations Stress Inventory (AESI):

Academic Expectations Stress Inventory was adapted by Kelecioğlu & Bilge (2009). For the validity of AESI, a total of 475 students in public and private schools in Ankara in 9th, 10th, and 11th grades were included. Kaiser-Meyer-Olkin sampling adequacy was .80 and Bartlett's test $\chi^2_{(36, N=35391)}=866.36, p<.00$, was significant. A two-factor solution emerged from the factor analysis. The first factor was named as parent/teacher expectations while the second factor was on students' own expectations. The Cronbach alpha reliabilities of the total AESI was .81 while the sub-dimensions were .81 and .65, respectively. Test-retest reliabilities for the whole instrument was .66, .64, and .49, respectively.

Procedure

In order to develop the "School Burnout Scale," information collected from the elementary school students. A total of 150 students from two elementary schools (grades 6-8, one from Ankara and one from Eskişehir) was asked to report all the negative feelings, ideas, and experiences concerning school homework, lessons, and all school activities. Moreover, students were asked to report all the problems that affect the quality of their life negatively in school.

A total of 50 item pool was created based on the information in the texts that had been provided by the students. The researcher included 38 items that were negatively worded and as a whole an 88-item pool created for the draft instrument. A five-point Likert-type scale (1=I strongly disagree, 5= I strongly agree) was used. The instrument was sent to a total of 8 faculty experts from five different universities (one in psychology of education, 5 in

guidance and counseling, 2 in measurement and evaluation) and the experts were asked to provide comments and suggestions. Based on the expert opinions and suggestions, a 44-item draft instrument was formed with a four-point Likert-type scaling (1= Completely disagree 4= Completely agree).

The draft instrument was given to a group of 10 elementary school students to check whether they understand the questions and they indicated that the instrument was clear and understood. After that, the data collected from 730 students at 10 elementary schools in the spring of 2009-2010 in Eskişehir, Turkey. Some of the data were not usable and the analyses were carried out with a total of 691 students.

Data Analyses

In addition to descriptive statistics, correlations, Exploratory Factor Analysis (EFA), Confirmatory Factor Analysis (CFA), and reliability analyses were conducted. The data were divided into two equal groups. EFA was used in the first group with Varimax rotation. The reason for that is EFA assumes that the factors are related, how many factors are needed to explain reciprocal relationship and what kind of factor structure exists (Çokluk, Şekercioğlu, & Büyüköztürk, 2010, p. 189; Pett, Lackey, & Sullivan, 2003, p. 3; Şencan, 2005, p. 778-779). CFA was used in the second half of the study group. The factor structure was determined with EFA and whether the factor structure was confirmed or not with CFA (Şencan, 2005, p. 778). AESI was used to check the criterion validity of the total scores and sub-dimension scores of the Elementary Students School Burn-out Scale for Grades 6-8. The reliability of the instrument was determined with Cronbach Alpha Scores (both the total and sub-dimensions) and split-half correlations were used.

Results

Findings for the Elementary Students School Burnout Scale for Grades 6-8 (ESSBS)

An EFA was conducted for the validity of ESSBS. KMO value for sampling adequacy was .93 and Bartlett's value ($\chi^2_{(946)}=3831,155, p<.01$) was significant. The results of factor analysis were presented in the Table 1. A four-factor solution with eigenvalues over 1 was emerged from the EFA explaining 59 % of the variance. The eigenvalues of the factors were: 6.29, 3.10, 2.94, and 2.89, respectively. Common variance of the factors ranged from .37 to .75.

Table 1.
Results of EFA for ESSBS

Factor Loadings Following Rotation					
Factor Name	Item No	Factor-1	Factor-2	Factor-3	Factor-4
Burnout from School Activities (BSA)	7	.767	.186	.247	.103
	3	.750	.044	.168	.151
	1	.749	.142	.104	.014
	4	.708	.134	.116	.119
	16	.702	.178	.153	.211
	2	.683	.104	.184	.115
	9	.670	.086	.016	.192
	6	.668	.190	.016	.284
	25	.626	.219	.301	.278
	10	.607	.261	.041	.078
	20	.589	.057	.432	.250
Burnout from Family (BFF)	21	.571	.211	.393	.159
	14	.163	.809	.257	.087
	5	.204	.749	.128	-.017
	23	.230	.736	.317	.154
	26	.164	.709	.237	.107
Inadequacy in School (IIS)	22	.269	.409	.272	.239
	11	.150	.297	.730	.085
	12	.131	.237	.712	.289
Loss of Interest in School (LIS)	17	.096	.323	.686	.089
	8	.248	.136	.593	.009
	24	.136	-.030	.110	.763
	19	.048	.078	.123	.753
Cronbach Alpha	15	.310	.134	.006	.696
	13	.454	.175	.115	.593
Explained Variance Total: 59 %	18	.380	.182	.359	.559
		.92	.83	.76	.81
		Factor-1: 24.2 %	Factor-2: 11.95 %	Factor-3: 11.34 %	Factor-4: 11.12 %

The first factor with 12 items explained 24.2 % of the variance and it was named as Burnout from School Activities (BSA). The second factor explained 11.95 % of the variance and it was named as Burnout from Family (BSF). The third factor explained 11.34 % of the variance and it was named as Inadequacy in School (IIS). The fourth factor explained 11.34 % of the variance and it was named as Loss of Interest in School (LIS).

Since the items emphasized in school related activities such as studying, doing homework, and taking exams led students to experience exhaustion, distress, and boredom as well as absurdity towards these activities, this factor was named as “Burnout from School Activities (BSA).” The second factor

included items that stem from family attitudes regarding school related activities and led to exhaustion, tension, and psychological depression, this factor was named as “Burnout from Family (BFF).” The items in the third factor were on feeling of inadequacy concerning school and school related activities (doing homework and studying), this factor was named as “Inadequacy in School (IIS).” The items in the fourth factor were on loss of interest towards school, this was named as “Loss of Interest in School (LIS).” Correlations of the ESSBS with the sub-dimensions were presented in Table 2.

Table 2.
Correlations of ESSBS and Its Sub-dimensions

Scale and Sub-dimensions	1	2	3	4
1. ESSBS - Burnout from School Activities (BSA)	.91**	-		
2. ESSBS - Burnout From Family (BFF)	.76**	.54**	-	
3. ESSBS - Inadequacy in School (IIS)	.68**	.45**	.57**	-
4. ESSBS - Loss of Interest in School (LIS)	.71**	.59**	.34**	.35**

* $p < .05$ ** $p < .001$

Table-2 indicates that correlations of ESSBS with the total scores were all positive and ESSBS highly correlated with BSA (.91) and BFF (.76). Correlations of ESSBS sub-dimensions were all positive and medium level. Medium level correlations

among scale sub-dimensions indicate that they measure different contents (Kline, 2005).

Once the factorial structure emerged via EFA, to provide further evidence concerning to what extent the data fits the structure a CFA was used. Table-3 presents the CFA results, goodness of fit indices, and chi-square with significance levels. Chi-square value for the model fit was significant [$\chi^2=787.6, df=293, p < .01$] (Kline, 2005). When the sample size included, chi-square/df was low ($787.6 / 293 = 2.68$).

Figure-1 presented the results of the path diagram. The CFA results indicate that the standardized coefficients of the relationship between factors and items ranged from 0.54 to 0.83.

Table 3.
CFA Fit Goodness of Indices for ESSBS.

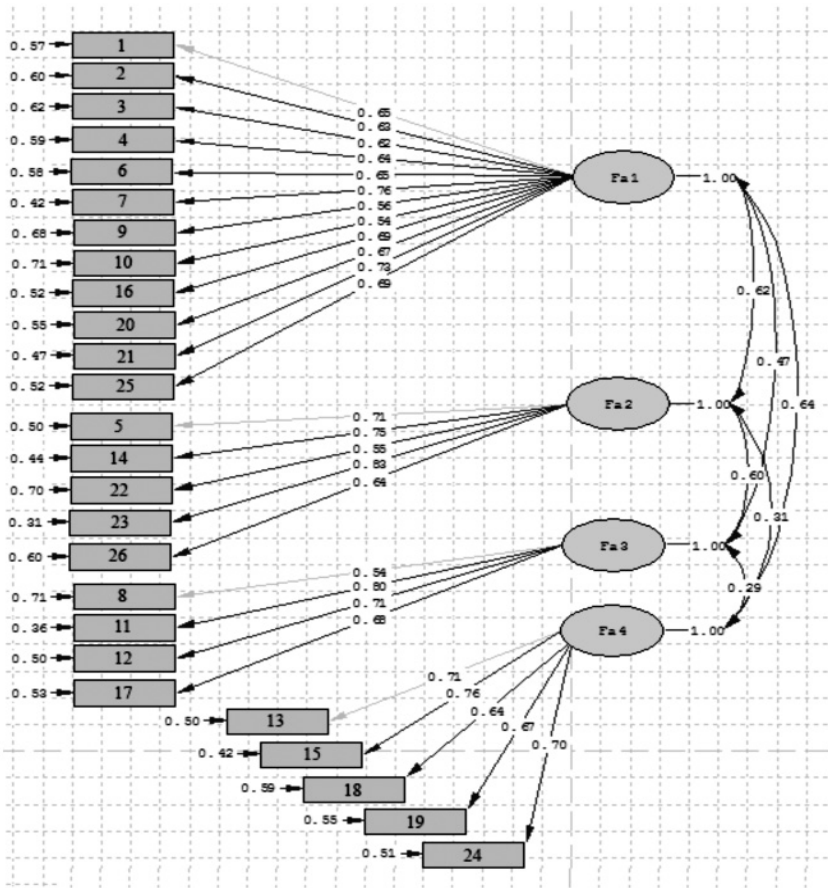


Figure 1.
CFA Results for ESSBS.

Parameter	Coefficient
GFI	0.94
AGFI	0.91
PGFI	0.89
RMSEA	0.07
CFI	0.91
df	293
χ^2	787.6
χ^2/df	2.06

Note. GFI: Goodness of Fit Index; AGFI: Adjusted Goodness of Fit Index; PGFI: Parsimonious Goodness of Fit Index; RMSEA: Root Mean Square Error; CFI: Comparative Fit Index; df: Degrees of Freedom; χ^2 : Chi-square goodness of fit.

In order to test the criterion validity, AESI was used. Correlation coefficients between ESSBS and AESI were presented in Table 4.

Table 4.
Correlation coefficients between ESSBS and AESI

Scales	AESI	ABSE-Family/Teacher Expectations	ABSE-Students' Self-Expectations
ESSBS - BSA	.12	.00	.24**
ESSBS - BFF	.31**	.20**	.38**
ESSBS - IIS	.33**	.23**	.07
ESSBS - LIS	.00	.07	.09

Note: AESI: Academic Expectations Stress Inventory; AESI-FTE: Family/Teacher Expectations; ABSE-KB: Students' Self-Expectations.

* $p < .05$ ** $p < .001$

As the Table-4 indicated, there is a low positive correlation between ESSBS-BSA sub-dimension score and AESI-SSE sub-dimension (.24). A medium level correlation (.31) exists between ESSBS-BFF sub-dimension and AESI total score while there are low (.20) and medium (.38) level correlations exist between ESSBS-BFF and AESI-FTE and AESI-SSE, respectively. Medium positive correlations exist between ESSBS-LIS sub-dimension score and AESI total score (.33) as well as with AESI-SE (.37). A low positive correlation is found between ESSBS-LIS and AESI-FTE (.23).

Findings for the Reliability of ESSBS

The reliability of ESSBS measured with Cronbach Alpha and split-half. For the ESSBS sub-dimensions such as BSA, BFF, IIS, and LIS Cronbach Alpha coefficients were: .92, .83, .76, and, .81, respectively. For the same sub-dimensions of ESSBS split-half correlations were: .81, .72, .65, and, .65, respectively

Discussion

This study was to develop a burnout scale for elementary school students for grades 6-8. EFA and CFA were used to test the validity of ESSBS. A four-factor structure was emerged from the factor analysis and the factors named as “Burnout from School Activities”, “Burnout from Family”, “Inadequacy in School”, and “Loss of Interest in school.” CFA was used whether this structure was confirmed. Chi-square/df value was low (787.6/293= 2.68) and the CFA results indicated a good fit [GFI=0.94, AGFI=0.91, PGFI=0.89, RMSEA=0.07, CFI=0.91]. Standard values for the indices were: GFI and AGFI values should be between 0 and 1. Although there is an agreement in the literature concerning these values, if the value was over 0.85 and 0.90, it indicates a good fit (Anderson & Gerbing, 1984; Cole, 1987; Kline, 1994; Marsh, Balla, & McDonald, 1988; Schumacker & Lomax, 1996). RMSEA values also vary between 0 and 1. If these values closer to 1, they indicated a good fit. χ^2/df ratio indicate a good fit and if it is lower than 2 it indicates an excellent fit (Jöreskog & Sörbom, 2001; Kline, 2005). Thus, all standardized fit indices indicate that the model factor structure was confirmed. Both EFA and CFA result indicate that the ESSBS was a valid scale.

For the criterion validity, AESI was used. ESSBS and AESI total and sub-dimension scores were positive and ranged between .20 and .38. Correlation coefficients in such cases have usually been low. Correlations for such relationships ranged from .30 and .50. However, some scholars claim that validity scores could be as low as .20 (Şencan, 2005). Based on the findings in the literature, it could be argued that correlations between ESSBS and AESI support ESSBS' validity. Moreover, reliability scores for both Cronbach Alpha and split-half coefficients indicated that ESSBS measure student burnout in schools (Şencan, 2005).

None of the instruments in the literature developed to measure school burnout in schools. Thus ESSBS is an original instrument. Other instruments

adapted from work life (Salmela-Aro, Kiuru et al., 2009; Salmela-Aro & Näätänen, 2005; Schaufeli et al., 2002) and the factor structure on those instruments were all three (Exhaustion, Cynicism & Efficacy). When the factor structures in this study were investigated, exhaustion, loss of interest, feeling of meaningless and inadequacy emerged from both school and family dimensions. Moreover, it is hard to separate these dimensions from the others and they reflect the inner worlds of students.

ESSBS factor structure may be more appropriate to measure student burnout from school in Turkey. Elementary school students always have to take some kind of competitive examinations in Turkey and these exam results largely determine their future. Thus, both students and families are under a pressure to study more. On the other hand, students face a feeling of competition that never seems to end. Students have always been encouraged to take private tutoring courses in addition to their schoolwork, study more, solve more tests, and complete a great deal of homework. Further research might be on student burnout of different types of schools. In addition, how these excessive demands placed on students that stem from education vary based on a number of variables such as family background, SES, demographics, school readiness, absenteeism, and drop-out may be investigated.

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