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DO WE HAVE A FREE WILL? - DEVELOPING A FREE WILL SCALE AND RELATIONSHIP OF FREE WILL DEVELOPMENT WITH DEMOGRAPHIC VARIABLES[2]

Abstract

In this research, Free Will Levels of high school students were investigated. For that purpose, Free Will Scale (FWS) was primarily developed, and validity and reliability studies were carried out. Subsequently, free will levels of the high school students were investigated according to the variables of gender, age, number of people resident in the house, number of siblings, educational status of mother, educational status of father, profession of mother, profession of father, having a study room in the house or not, status of following up a daily newspaper, and status of following up a magazine. Content validity and construct validity of the scale were also investigated. Opinions of 10 specialists were asked for the content validity. According to the feedback of the specialists, the pool with 62 items was turned into the draft scale including 44 items. The free will scale with 44 items was performed to a student group including 238 participants, necessary feedbacks from the students were received, and 18-item free will scale was created. Exploratory and confirmatory factor analyses were successively employed for the construct validity of the free will scale. When item total correlations of the scale were investigated, total correlation values of the items in internal free will sub-dimension of the scale were noticed to vary between .36 and .70, and the correlation values of the items in external free will sub-dimension were determined to vary between .47 and .64. Model fit of the free will scale was investigated with first order CFA. Chi-square fit value ($\chi2=261,91$, Sd=134, p=.00) for the factor structure of the free will scale including 18 items and two sub-dimensions was found to be significant, and $\chi2/df$ value related to model fit was determined as 1.95. Internal consistency analysis and split-half reliability analysis were performed to determine the reliability of the Free Will Scale.

Key Words: Free will, Free will scale, scale development, validity, reliability

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[2] The 1st Congress of International Researches Academic INES (INES 2016) is Presented in the Verbal Presentation.

INTRODUCTION

People encounter some selections during their lifetime. At any moment in the life, the selections made or to be made change the life to a better or worse side. Therefore, place of selections in human life is significant. When individuals are considered as a living organism, human and a cultured person, human can be defined within the scope of a dictionary as a living being living around a culture in communities, having the ability of thinking and speaking, comprehending the universe as a whole and changing and shaping the universe as result of the findings (Crider, Goethals, Kavanaugh, Solomon, 2000:5).

The word of freedom is individuals' making decision (making selection) depending upon their own though, their own law, and their own will as independent from ant kind of external influences. It can be defined as "Individuals' possibility for acting by their own demand and will; and individuals' creating an effect without being prevented externally" (Schopenhauer, 2005:25; Sever, 2008:29).

Human is not a human through his intelligence and knowledge but his will. Intelligence and knowledge is also present in animals more or less. Will is not only a power and privilege, but also the unique mental strength creating superiority and inferiority difference among the people and differentiating them (Başgil, 2009:26).

Making decision includes making selection on the one hand and taking responsibilities, on the other. It is responsibility, individuals have to face with the results of the decisions they made or shared to be made (Darling-Hammond, 1984:44; Drucker, 2001:2; Ören, 2006:19). In this sense, willpower can be defined as making a selection (making a decision) and turning this selection into an act (Dökmen, 2006:213). Will is defined as the thing presaged directly. Will is the key of anything. It is narrow door of truth. We should understand the universe through our own presence. Will of individuals is on their own body. This will create the wish for intelligence in the mind and maintenance in the body (Schopenhauer, 1962:25).

Will means making decision at own request. However, the thing you mention as "the self"-"your own request" occurs as a reaction against the external effects even at the beginning of anything. Namely, there is no proclaimed self – absolute reality deciding what to do on its own called "self." Therefore, free will does not mean making decision as "totally independent!" ıt means making decision without subjecting to an external force or being under pressure (Allais, 2012:635).

When we find the will as a starter of an act or providing the act to be performed, we consider that what we find is in fact our own will. Freedom is the condition of real will, and the revealed will in the indicator of freedom. The feeling that tells us that we are free is also realized when we make selections among the actions before being lost in thought. The selection we made is the result of a foresight creating our senses. And the owner of foresight is the self (Larmore, 1996: 42; Popper, 2005, 87; Eroğlu, 2008:28). Freedom of will and thought is not sufficient. What is important is this will and thought's turning into an action freely (Güriz, 1967: 88; Çuhadar, 2007:147).

One of the most important problems of students in today's world is their believing that they cannot fulfill anything losing their trust even at the slightest failure. Children can be provided to make right choices developing their positive aspects. At this point, will becomes a part of the activity. Will training is needed in order to strengthen and notice these positive

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aspects of children. In order to provide will training completely, the factors creating the will, and what is efficient upon the will should be known, and a program should be prepared depending upon this (Lickona, 1991:157; Suparka, 1975:48). An appropriate measurement tool is needed in order to measure free will perceptions of students and to determine what properties are efficient upon their free will perceptions. In this research, it was aimed to eliminate this deficiency even partly, to develop the appropriate measurement tool for future studies, to determine what elements are efficient upon free will, to develop free will scale related to high school students, and to specify whether free will levels of the high school students changed or not according to different variables.

METHOD

This research was a descriptive study. In the research, a scale related to determining the free will levels of the 11th grade high school students was developed. Moreover, whether free will scores obtained from 11th grade high school students differed according to the variables of gender, age, number of people resident in the house, number of siblings, educational status of mother, educational status of father, profession of mother, profession of father, having a study room in the house or not, status of following up a daily newspaper, and status of following up a magazine or not was also investigated through the scale. The study was carried out with 4 different study groups in order to investigate whether free will scores differed according to gender, age, number of people resident in the house, number of siblings, educational status of mother, educational status of father, profession of mother, profession of father, having a study room in the house or not, status of following up a daily newspaper, and status of following up a magazine and to prepare a tool related to measuring the free will levels of 11th grade high school students. The information related to the individuals participated into the research was presented below.

The group determined to develop Free Will Scale (First Research Group): This group was the one included into the study while creating the item pool at the beginning of scale development. While creating the item pool of the scale, a group with 800 participants from different professional groups and university students in Erzincan province was included into the research. Free-willed student properties were asked to the participants as open-ended questions. Obtained results were investigated. The properties determined as free-willed human properties by most of the participants were listed. During the listing, similar or approximate expressions were combined. Furthermore, relevant references were also investigated, and the expressions were written as significant sentences and scale items considering the properties free-willed individuals had and development levels and development responsibilities of 11th grade high school students. So that a draft scale including 62 items was prepared.

The group determined to conduct pilot study of Free Will Scale (Second Research Group): This one was the group determined to carry out pilot study upon the scale decreased to 44 items after providing the layout validity of the 62-item draft scale. The group included two classrooms with 35 participants each studying at 11th grade of Erzincan High School in Erzincan province. In terms of the items' understandability, the scale was implemented to a 70-participant student group. After the implementation, feedbacks were received from the students related to the understandability of the items and implementation process through interviews, and necessary changes were made.

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Procedures carried out during the process of asking specialist opinion: Experimental form of the prepared 62-item scale was presented to the views of specialists. Opinions of 2 Psychological Counseling and Guidance specialists, 2 Assessment and Evaluation specialists, and 2 psychologists were asked. Moreover, the items requested to be included into the scale were also asked. In accordance with the feedback, the expressions requested to be corrected in terms of their expression were also included into the scale. And the expressions agreed to be inappropriate were excluded. In the form after asking the opinions of specialists, the scale included 44 items.

Pilot study carried out upon the draft scale: The draft form of the scale including 44 items was performed to totally 238 11th grade students studying at Erzincan High School in Erzincan province. The students were asked to focus each item for answering, and selecting one of the choices for each item. At the end of the implementation, feedback related to understandability of the items and implementation process was received from the students through interview.

The procedures carried out during the implementation of Free Will Scale: Necessary permissions were obtained from Ministry of National Education in order to perform implementations. The schools where the implementations were performed had been visited and informed. The implementations were actualized on determined day and time. All implementations were carried out by the researcher in the classrooms. The students were informed about how the scales would be filled in, and asked to answer willingly because the results would affect validity and reliability. Necessary explanations related to filling in the scales were provided. The facts related to the confidentiality of the results and collective evaluation were mentioned.

The procedures carried out during the analysis of Free Will Scale's reliability and validity: The content validity of the scale was investigated asking the opinions of specialists. Factor analysis was performed for the construct validity studies. Internal consistency analysis, half-split reliability analysis and test re-test reliability analysis were all performed within the scope of the scale's reliability studies. The information related to the scales performed in this study was presented below.

PROCESS PATH

In order to determine psychometric properties of the scale, finalized scale form was performed to the study group. In exploratory factor analysis, in terms of determining the items to be included into the scale, eigenvalue of the items was regarded to be at least 1.0, item factor load value was regarded to be at least .30; moreover, including the items in only one factor and having at least .10 difference between the factor load values of the items included in two factors were also regarded. Furthermore, Maximum Likelihood Method and Direct Oblimin Rotation Method were used in Exploratory Factor Analysis (Büyüköztürk, 2002; Şimşek, 2007; Seçer, 2013).

FINDINGS

In this section, the findings obtained as result of the statistical analysis of data collected within the scope of the research were included. The findings were discussed in two parts; the first part included the findings related to developing the Free Will Scale.

Findings related to validity of Free Will Scale

For the validity studies of the scale, the data obtained from the third and fourth research groups were used. So that, content validity and construct validity of the scale were investigated.

Content validity

For the content validity, opinions of specialists were asked. Opinions of 2 specialists from Erzincan University Psychological Counseling and Guidance department, 1 specialist from Assessment and Evaluation department, 2 psychologists and ten 11th grade teachers were asked for the item pool including 62 items. Accordingly, they were asked to mention whether scale items reflected free will perceptions of the 11th grade students. Evaluating the feedbacks, totally 18 items inappropriate for the development level of the 11th grade students were excluded from the item pool. Besides, the requested changes in item expressions were also made.

Construct validity

Factor analysis is performed to decrease the number of variables defining the basic variables or factors grouped in observed several variables. Each defined factor includes a variable set related to each other measuring the same property as result of measuring the relationship between the variables. In other words, factor analysis is the process of obtaining a factor as result of grouping the variables that measure the same dimension and in relation with each other calculating the correlation between the variables according to the answers experiments give on a subject (Ural and Kılıç, 2005; Şimşek, 2007). Exploratory and confirmatory factor analyses were successively performed to reveal the hidden structure of the Free Will Scale and confirm the structure explained in its original form.

Exploratory Factor Analysis

Exploratory factor analysis was performed in order to determine the factor structure of the scale. So as to determine the fitting of data collected from the study group to the factor analysis, KMO and Barlett tests were performed. Factor loads of the scale items and the variances explained by the sub-scales were presented in Table 1.

Table 1. Item Factor Loads of Free Will Scale, the Variances expressed by the Sub-Scales and Item Analyses

Item No	Sub-Scale Factor Loads		Total Item Correlation
	Internal Will	**External Will**	
1	.51		.54
2	.61		.51
3	.44		.60
7	.54		.70
8	.57		.68
9	.43		.36
11	.36		.54
12	.39		.67

15	.41		.70
4		.55	.64
5		.56	.59
6		.50	.47
10		.46	.59
13		.62	.69
14		.55	.47
16		.59	.55
17		.58	.50
18		.48	

As result of the exploratory factor analysis, KMO was found as .833, and Barlett test χ2 value was found as 1335,205 (p<.001). KMO value's being over .60 and Barlett test's significance proved that the data were appropriate for the factor analysis. A two-factor structure was obtained at the end of the analysis.

First of these factors included totally nine items as the 1st, 2nd, 3rd, 7th, 8th, 9th, 11th, 12th, and 15th items. Item load value of the items in this factor varied between .36 and .61. This factor explaining 24.22% of the total variance in the scale was internal will sub-dimension. The second factor in the scale was external will sub-dimension explaining 10.21% of the total variance in the scale and including 9 items as the 4th, 5th, 6th, 10th, 13th, 14th, 16th, 17th, and 18th items with factor loads varying between .46 and .62. When item total correlations of the scale was investigated, total correlation values of the items included into the internal free will sub-dimension was noticed to vary between .36 and .70, and correlation values of the items included into the external will sub-dimension was determined to vary between .47 and .64.

When item factor load values and item total correlation values of the scale were considered, the scale could be mentioned to have required criteria (Büyüköztürk, 2002; Şimşek, 2007; Seçer, 2013).

Confirmatory Factor Analysis

Model fit of the free will scale was investigated through the first order CFA. As in general, multiple fit indices were used in CFA. In CFA; >.90 was accepted as the acceptable limit for CFI, NFI, RFI, NNFI and IFI, >.95 was accepted as the perfect fit limit. For GFI and AGFI, >.85 was accepted as acceptable fit limit, and >.90 was accepted as the perfect fit limit. And for RMSEA, SRMR and RMR, <.08 was accepted as acceptable limit, and <.50 was accepted as the perfect fit level (Hu and Bentler, 1999:55; Cole, 1987: 65). Confirmatory factor analysis is a method that is frequently used during the process of investigating the model fit of an implicit structure obtained through the exploratory factor analysis and the process of adapting the measurement tools developed in different cultures and samples (Sümer, 2000; Seçer, 2013;77-89).

The findings related to the model fit of the two-factor structure obtained through the exploratory factor analysis in terms of the free will scale were presented in Figure 1.
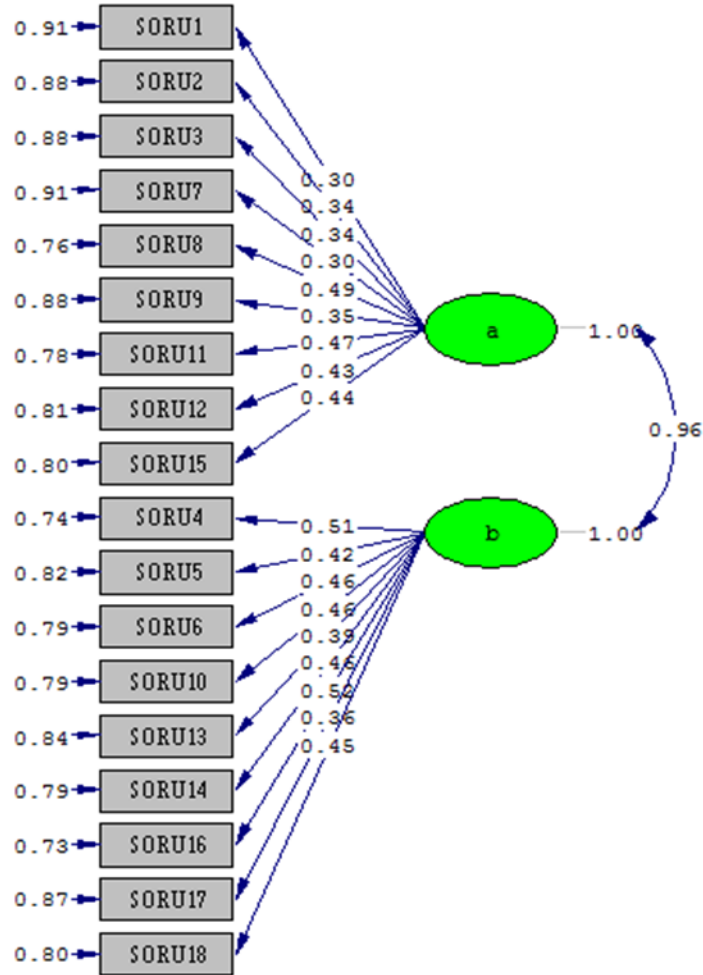
Chi-Square=261.91, df=134, P-value=0.00000, RMSEA=0.048

Figure 1. First Order CFA Result Related to the Free Will Scale

When Figure 1 was analyzed, chi-square fit value for the factor structure of free will scale including 18 items and two-sub-dimensions ($\chi2$=261.91, Sd= 134, p=.00) was found to be significant, and $\chi2$/df value related to the model fit was 1.95. Marcoulides and Schumacher (2001), Schumacher and Lomax (2004) and Kline (2005) suggested that this value has to be below 3. These obtained findings proved that $\chi2$/df value was sufficient to decide model fit of the scale. First order CFA fit index values were found as REMSEA: .048, RMR: .032, SRMR: .044, NFI: .97, NNFI: .98, CFI: .98, IFI: .99, RFI: .97, GFI: .96, AGFI: .91.

When fit index values obtained as result of the first order CFA for the Free Will Scale were considered, it was possible to mention that model fit of the scale was provided, and two-factor structure was confirmed.

Reliability Analysis

Internal consistency analysis, half-split reliability analysis and test re-test reliability analysis were performed to determine the reliability of the Free Will Scale, and the obtained findings were presented in Table 2.

Table 2. Reliability Coefficients of Free Will Scale Calculated with Internal Consistency and Half-Split Reliability Methods

Dimensions	Internal Consistency	Half-Split Reliability
Internal Free Will	.83	.82
External Free Will	.85	.84
Scale Total	.84	.83

When the findings related to the Cronbach Alpha internal consistency coefficient, Spearman Brown half-split reliability coefficient, test re-test reliability coefficient of Free Will Scale were investigated, obtained values could be mentioned to be at an adequate level for each sub-factor.

In scale development and adaptation processes, the scale with reliability coefficient at and over .70 are accepted as reliable (Shaver and Wrightsman, 1991). Internal consistency, half-split and test re-test coefficients of the Free Will Scale were possible to be mentioned as reliable.

THE FINDINGS RELATED TO WHETHER FREE WILL SCALE OF ELEVENTH GRADE HIGH SCHOOL STUDENTS DIFFERED ACCORDING TO THE DEMOGRAPHIC VARIABLES OR NOT

Did the Free Will Levels of Eleventh Grade High School Students Significantly Differ According to Their Gender?

Independent samples t-test was performed in order to determine whether free will levels of 11th grade high school students differed according to their gender, and obtained findings were presented in Table 3.

Table 3. The findings related to the variable of gender

Gender		n	X	Sd	t	p	
Internal free will	Female	201	15.39	3,96	.240	.810	
	Male	212	15.30	3,77			
External free will	Female	201	14.62	4.06	.001	.999	
	Male	212	14.62	4.05			

When Table 3 was investigated, it was noticed that internal free will levels (t_{411} = .240, p>.05) and external free will levels (t_{411} = .001, p>.05) of 11th grade high school students did not differ significantly according to their gender. In accordance with this obtained finding, it was possible to mention that the gender was not a variable affecting the internal and external free will levels of the 11th grade high school students.

Did the Free Will Levels of Eleventh Grade High School Students Significantly Differ According to Their Age?

Independent samples t-test was performed in order to determine whether free will levels of 11th grade high school students differed according to their age, and obtained findings were presented in Table 4.

Table 4. The findings related to the variable of age

Age		n	X	Sd	t	p
Internal free will	16 Years old	304	15,34	3,94	-.050	.960
	17 Years old	109	15,36	3,63		
External free will	16 Years old	304	14.25	3,92	-3.190	.002
	17 Years old	109	15.67	4,25		

When Table 4 was investigated, it was noticed that internal free will levels (t_{411} = -.050, p>.05) of 11th grade high school students did not significantly differ according to their ages. In contrast, it was found that external free will levels of 11th grade high school students significantly differed according to the variable of age (t_{411} = -.3.190, p<.05). According to this, it was possible to mention that in external will sub-dimension, arithmetic average of the children at the age of 16 was X=14.25, and arithmetic average of the children at the age of 17 was X= 15.67, and external free will scores of the students at the age of 17 was significantly higher.

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Did the Free Will Levels of Eleventh Grade High School Students Significantly Differ According to the Number of People Resident in the House?

Independent samples t-test was performed in order to determine whether free will levels of 11th grade high school students differed according to the number of people resident in the house, and obtained findings were presented in Table 5.

Table 5. The findings related to the variable of number of people resident in the house

Number of people		n	X	Sd	t	p
Internal free will	Between 1-5	173	14,58	3,35	-3,513	.000
	Between 6-10	239	15,92	4,11		
External free will	Between 1-5	173	14,05	3,75	-2.476	.014
	Between 6-10	239	15,05	4,22		

When Table 5 was investigated, internal free will levels (t_{410} = -3.513, p<.05) and external free will levels (t_{410} = -2.476, p<.05) of 11th grade high school students significantly differed according to the variable of number of people resident in the house. According to this, in internal free will sub-dimension, arithmetic average of the participants with 1-5 people resident

in the house was X=14.58, and arithmetic average of the participants with 6-10 people resident in the house was X= 15.92, and internal free will level of the students with 6-10 people resident in the house was significantly higher. In external free will sub-dimension, similarly, arithmetic average of the students with 1-5 people resident in the house was X=14.05, and arithmetic average of the participants with 6-10 people resident in the house was X= 15.05, and internal free will level of the students with 6-10 people resident in the house was significantly higher.

Did the Free Will Levels of Eleventh Grade High School Students Significantly Differ According to the Educational Status of Mother?

Descriptive values of 11th grade high school students' free will levels related to the educational status of mother were presented in Table 6.

Table 6. Descriptive values related to educational status of mother

Education		N	X	Sd	
Internal free will	Illiterate	76	15,8947	3,85600	
	Primary	168	15,7619	4,08332	
	Secondary	63	15,3175	3,56880	
	High school	73	14,5753	3,60909	
	University	33	13,7879	3,27641	
External free will	Illiterate	76	15,6711	4,06083	
	Primary	168	15,0952	4,41586	
	Secondary	63	14,5079	3,55543	
	High school	73	13,0685	3,40069	
	University	33	13,5152	3,22220	

One-factor variance analysis was performed in order to determine whether there was a significant difference between the descriptive values presented in Table 7 related to free will levels of 11th grade high school students, and obtained findings were presented in Table 7.

Table 7. Variance analysis result related to educational status of mother

		Average Total	Sd	Average Square	F	p
Internal free will	Inter-groups	175,456	4	43,864		
	Intra-groups	5970,636	408	14,634	**2.997**	**.019**
	Total	6146,092	412			
External free will	Inter-groups	6780,576	412			
	Intra-groups	175,456	4	43,864	**5.363**	**.000**
	Total	5970,636	408	14,634		

When Table 7 was investigated, it was found that internal free will scores (F_{408}= 2,997, p<.05) and external free will scores (F_{408} = 5,363, p<.05) of 11th grade high school students significantly differed according to the educational status of mother. Post-Hoc Tukey test was performed in order to determine the reason for the difference among the averages.

It was determined in internal free will sub-dimension that external free will scores of the students with illiterate mothers and mothers who graduated from primary school were significantly higher rather than the scores of the students with mothers who graduated from high school and university.

It was found in external free will sub-dimension that external free will scores of the students with illiterate mothers and mothers who graduated from primary school were significantly higher rather than the scores of the students with mothers who graduated from high school.

Did the Free Will Levels of Eleventh Grade High School Students Significantly Differ According to the Educational Status of Father?

Descriptive values of 11th grade high school students' free will levels related to the educational status of father were presented in Table 8.

Table 8. Descriptive values related to educational status of father

	Education	N	X	Sd
	Illiterate	10	16,6000	3,27278
	Primary	102	15,7941	4,31056
Internal free will	Secondary	65	16,0308	4,03488
	High school	132	15,5682	3,61969
	University	104	14,0962	3,38334
	Illiterate	10	17,0000	3,77124
	Primary	102	15,5294	4,48475
External free will	Secondary	65	15,8000	4,21752
	High school	132	14,1894	3,74193
	University	104	13,3365	3,44333

One-factor variance analysis was performed in order to determine whether there was a significant difference between the descriptive values presented in Table 8 related to free will levels of 11th grade high school students, and obtained findings were presented in Table 9.

Table 9. Variance analysis result related to educational status of father

		Average Total	Sd	Average Square	F	p
	Inter-groups	235,652	4	58,913		
Internal free will	Intra-groups	5910,440	408	14,486	**4.067**	**.003**
	Total	6146,092	412			
	Inter-groups	427,278	4	106,820		
External free will	Intra-groups	6353,298	408	15,572	**6.860**	**.000**
	Total	6780,576	412			

When Table 9 was investigated, it was found that internal free will scores (F_{408}= 4,067, p<.05) and external free will scores (F_{408} = 6,860, p<.05) of 11th grade high school students significantly differed according to the educational status of father. Post-Hoc Tukey test was performed in order to determine the reason for the difference among the averages, and it was determined in internal free will sub-dimension that score averages of the students with fathers who graduated from primary and secondary schools were significantly higher rather than the scores of the students with fathers who graduated from university.

It was also found in external free will sub-dimension that score averages of the students with fathers who graduated from primary and secondary schools were significantly higher rather than the scores of the students with fathers who graduated from university.

Did the Free Will Levels of Eleventh Grade High School Students Significantly Differ According to the Profession of Father?

Descriptive values of 11th grade high school students' free will levels related to the profession of father were presented in Table 10.

Table 10. Descriptive values related to profession of father

	Profession	N	X	Sd
	Unemployed	53	14,9811	3,66633
	Officer	114	16,4123	3,44055
Internal free will	Self-employed, other	246	14,6504	4,02337
	Unemployed	53	14,1887	4,22017
External free will	Officer	114	16,5965	3,43774
	Self-employed, other	246	14,7683	4,17172

One-factor variance analysis was performed in order to determine whether there was a significant difference between the descriptive values presented in Table 10 related to free will levels of 11th grade high school students, and obtained findings were presented in Table 11.

Table 11. Variance analysis result related to profession of father

		Average Total	Sd	Average Square	F	p
	Inter-groups	143,553	2	71,777		
Internal free will	Intra-groups	6002,539	410	14,640	**4.903**	**.008**
	Total	6146,092	412			
	Inter-groups	255,232	2	127,616		
External free will	Intra-groups	6525,344	410	15,915	**8.018**	**.000**
	Total	6780,576	412			

When Table 11 was investigated, it was found that internal free will scores (F_{408}= 4,903, p<.05) and external free will scores (F_{410} = 8,018, p<.05) of 11th grade high school students significantly differed according to the profession of father. Tukey test was performed in order to determine the reason for the difference among the averages, and it was determined in internal and external free will sub-dimensions that free will score averages of the students with fathers who were employed as officer were significantly higher than the scores of the students with unemployed and self-employed fathers.

Did the Free Will Levels of Eleventh Grade High School Students Significantly Differ According to the Profession of Mother?

Descriptive values of 11th grade high school students' free will levels related to the profession of mother were presented in Table 12.

Table 12. Descriptive values related to profession of mother

	Variable	N	X	Sd
Internal free will	Unemployed	374	15,5134	3,83208
	Officer	32	14,1250	4,10939
	Self-employed, other	7	12,2857	1,88982
External free will	Unemployed	374	14,7701	4,06061
	Officer	32	13,6250	4,02212
	Self-employed, other	7	11,5714	1,98806

One-factor variance analysis was performed in order to determine whether there was a significant difference between the descriptive values presented in Table 12 related to free will levels of 11th grade high school students, and obtained findings were presented in Table 13.

Table 13. Variance analysis result related to profession of mother

		Average Total	Sd	Average Square	F	p
Internal free will	Inter-groups	123,730	2	61,865	**4.212**	**.015**
	Intra-groups	6022,362	410	14,689		
	Total	6146,092	412			
External free will	Inter-groups	105,137	2	52,569	**3.229**	**.041**
	Intra-groups	6675,439	410	16,282		
	Total	6780,576	412			

When Table 13 was investigated, it was determined that internal free will scores (F_{410}= 4,212, $p<.05$) and external free will scores (F_{410} = 3,229, $p<.05$) of 11th grade high school students significantly differed according to the profession of mother. Tukey test was carried out in order to determine the reason for the difference among the averages, and it was determined in internal free will sub-dimensions that score averages of the students with mothers who were unemployed were significantly higher than the scores of the students with officer and self-employed mothers.

In external free will sub-dimension, it was proved that score averages of the students with unemployed mother were significantly higher rather than the score averages of the students with self-employed mothers.

Did the Free Will Levels of Eleventh Grade High School Students Significantly Differ According to Having a Study Room or Not?

Independent samples t-test was performed in order to determine whether free will levels of 11th grade high school students differed according to having a study room or not, and obtained findings were presented in Table 14.

Table 14. The findings related to having a study room or not

Study Room	n	X	Sd	t	p
Internal free will	Yes	212	16,5000	3,59634	-4.716	.000
	No	201	14,2488	3,93800		
External free will	Yes	212	15,6698	3,55784	-5.071	.000
	No	201	13,6368	4,30725		

When Table 14 was investigated, it was determined that internal free will scores (t_{411} = -4.716, p<.05) and external free will scores (t_{411} = -5.071, p<.05) of 11th grade high school students significantly differed according to having a study room or not. According to this, it was possible to mention that in internal free will sub-dimension, score averages of the students with a study room was X=16.50, and score averages of the students without a study room was X=14.24, and internal free will scores of the students with a study room was significantly higher.

In external free will sub-dimension, similarly, score averages of the students with a study room was X=15.66, and score averages of the students without a study room was X=13.63, and external free will scores of the students with a study room was significantly higher.

Did the Free Will Levels of Eleventh Grade High School Students Significantly Differ According to the Status of Following-up a Newspaper?

Independent samples t-test was performed in order to determine whether free will levels of 11th grade high school students differed according to the status of following-up a newspaper, and obtained findings were presented in Table 15.

Table 15. The findings related to following-up a newspaper

Variable	n	X	Sd	t	p
Internal free will	Yes	131	15,6260	3,12394	-2.619	.009
	No	282	14,6879	4,12291		
External free will	Yes	131	14,0305	3,36484	-1.045	.062
	No	282	14,9043	4,31847		

When Table 15 was investigated, internal free will level of 11th grade high school students was determined to differ significantly according to the variable of following-up a newspaper (t_{411}= -2.619, p<.05). According to this, score averages of the students following-up a newspaper was X=15.62, score averages of the students who did not follow-up a newspaper was X= 14.68, and internal free will scores of the students following-up a newspaper were significantly higher.

In external free will sub-dimension, no significant difference was found according to the variable of following-up a newspaper in terms of 11th grade high school students' scores (t_{411} = -1.045, p>.05). This obtained finding proved that the status of following-up a newspaper had a significant effect upon external free will scores of 11th grade high school students.

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Did the Free Will Levels of Eleventh Grade High School Students Significantly Differ According to the Status of Following-up a Magazine?

Independent samples t-test was performed in order to determine whether free will levels of 11th grade high school students differed according to the status of following-up a magazine, and obtained findings were presented in Table 16.

Table 16. The findings related to following-up a magazine

Magazine		n	X	Sd	t	p
Internal free will	Yes	80	15,0875	3,43546	.679	.497
	No	333	15,4144	3,96020		
External free will	Yes	80	14,3125	3,84047	.772	.440
	No	333	14,7027	4,10904		

When Table 16 was investigated, it was determined that internal free will scores (t_{411} = .679, p>.05) and external free will scores (t_{411} = .772, p>.05) of 11th grade high school students did not significantly differ according to the status of following-up a newspaper. According to this finding, it was possible to mention that the status of following-up a magazine did not have a significant effect upon internal and external free will scores of the 11th grade high school students.

Did the Free Will Levels of Eleventh Grade High School Students Significantly Differ According to the Variable of Number of Siblings?

Independent samples t-test was performed in order to determine whether free will levels of 11th grade high school students differed according to the variable of number of siblings, and obtained findings were presented in Table 17.

Table 17. The findings related to number of siblings

	Magazine	**n**	**X**	**Sd**	**t**	**p**
Internal free will	1-5 siblings	343	15,1516	3,75107	2.336	.020
	6-10 siblings	70	16,3286	4,26214		
External free will	1-5 siblings	343	14,2449	3,81342	4.329	.000
	6-10 siblings	70	16,5000	4,68036		

When Table 17 was investigated, it was noticed that internal free will scores (t_{411} = 2.336, p<.05) and external free will scores (t_{411} = 4.329, p>.05) of 11th grade high school students significantly differed according to the variable of number of siblings. In external free will sub-dimension, score averages of the students with 1-5 siblings was X=15,15, and score averages of the students with 6-10 siblings was X=16,32, and internal free will scores of the students with 6-10 siblings was possible to be mentioned as significantly higher. In external free will sub-dimension, score averages of the students with 1-5 siblings was X=14,24, and score averages of the students with 6-10 siblings was X=16,50, and external free will scores of the students with 6-10 siblings was possible to be mentioned as significantly higher.

CONCLUSION, DISCUSSION AND SUGEGSTIONS ACCORDING TO THE FINDINGS OBTAINED IN THE RESEARCH

In the research, validity and reliability studies of Free Will Scale (FWS) related to free will perceptions of 11th grade high school students were carried out. Moreover, free will perceptions of 11th grade high school students were investigated using the developed scale, and significant differences were found in free will perceptions of the students.

According to the content validity, construct validity and reliability tests performed with internal consistency methods, the scale was both valid and reliable. Accordingly, the scale had a quality that could be used for the 11th grade students.

According to the findings obtained from the study varied out whether free will perception differed according to the research variables, it was determined that internal-external free will levels of the students studying at high school 11th grade did not significantly differ according to gender. On the other hand, external free will levels of the students at the age of 17 were higher rather than external free will levels of the students at the age of 16. And internal free will scores were determined not to differ according to age. Free will scores of the students with 6-10 people resident in the house were found to be higher rather than the scores of the students with 1-5 people resident in the house. Free will scores of the students with illiterate mother or mothers who graduated from the primary school were determined to be higher than the scores of the students with mothers who graduated from high school. Similarly, free will scores of the students with fathers who graduated from primary or secondary schools were specified to be higher than the scores of the students with fathers who graduated from university. Free will score averages of the students with fathers working as an officer were determined to be higher than the averages of the students with self-employed and unemployed fathers. In internal free will sub-dimension, score averages of the students with unemployed mothers were specified to be significantly higher rather than the scores of the students with officer and self-employed mothers.

In external free will sub-dimension, score averages of the students with unemployed mother were determined to be significantly higher than the average scores of the students with self-employed mothers. Free will scores of the students with a study room were proved to be higher than the free will scores of the students who did not have a study room. In internal free will sub-dimension, free will scores of the students following-up a newspaper were found to be higher than the free will scores of the students who did not follow up. Following-up a magazine did not have a significant effect upon the internal and external free will levels of the 11th grade high school students. Free will scores of the students with 6-10 siblings were found to be higher than the free will scores of the students with 1-5 siblings.

Every person has a will. In accordance with the obtained findings, will perceptions of the children was possible to be mentioned as changing according to the socio-cultural and socio-economic values.

1-) Research findings indicated that will perceptions of the older students were higher than the free will perceptions of the younger ones. Children could be behaved according to their developmental periods and critical stages. Free will is a trait helping children to achieve their tasks during the developmental period successfully, and developing the developmental tasks through the positive inculcations of the people around. The first thing to be fulfilled is providing

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will to be strengthened more through appropriate studies. Teachers and parents should accord freedom of choice for the children. Children can maintain what they do pertinaciously because they fulfill it as they request. This is the situation of continuous determination for willpower. It means protection of the attitude as wanting to want under any circumstances (Özen, 2014:173-175).

2-) Research findings proved that free will perceptions of the children with parents who did not have academic education were higher than the free will perceptions of the children with parents who had academic education. Academic education should be provided to the families, and families should also be trained on how they should behave to their children.

3-) Research findings indicated that free will perceptions of the students with higher number of siblings were higher. In order to provide this, rules can be established to children in their daily life, and they can be expected to obey these rules. If we consider that children start to school at the age of 5, adaptation to the rules and maintaining to obey them at home and in a community are possible to be mentioned as important for children.

Because the children are in a crowd even at home, they present the will of keeping their requests under control. There are rules to be obeyed at home among the siblings beside the rules of the parents, and this help development of personality traits such as obeying the rules, making decisions and controlling the self and help will perception to be strengthened.

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EXPANDED SUMMARY

Will means making decision at own request. However, the thing you mention as "the self"-"your own request" occurs as a reaction against the external effects even at the beginning of anything. Namely, there is no proclaimed self – absolute reality deciding what to do on its own called "self." Therefore, free will does not mean making decision as "totally independent!" ıt means making decision without subjecting to an external force or being under pressure. One of the most important problems of students in today's world is their believing that they cannot fulfill anything losing their trust even at the slightest failure. Children can be provided to make right choices developing their positive aspects. At this point, will becomes a part of the activity. Will training is needed in order to strengthen and notice these positive aspects of children. In order to provide will training completely, the factors creating the will, and what is efficient upon the will should be known, and a program should be prepared depending upon this. An appropriate measurement tool is needed in order to measure free will perceptions of students and to determine what properties are efficient upon their free will perceptions. In this research, it was aimed to eliminate this deficiency even partly, to develop the appropriate measurement tool for future studies, to determine what elements are efficient upon free will, to develop free will scale related to high school students, and to specify whether free will levels of the high school students changed or not according to different variables.

In this research, Free Will Levels of high school students were investigated. For that purpose, Free Will Scale (FWS) was primarily developed, and validity and reliability studies were carried out. Subsequently, free will levels of the high school students were investigated according to the variables of gender, age, number of people resident in the house, number of siblings, educational status of mother, educational status of father, profession of mother, profession of father, having a study room in the house or not, status of following up a daily newspaper, and status of following up a magazine. Content validity and construct validity of the scale were also investigated. Opinions of 10 specialists were asked for the content validity. According to the feedback of the specialists, the pool with 62 items was turned into the draft scale including 44 items. The free will scale with 44 items was performed to a student group including 238 participants, necessary feedbacks from the students were received, and 18-item free will scale was created. Exploratory and confirmatory factor analyses were successively employed for the construct validity of the free will scale. When item total correlations of the scale were investigated, total correlation values of the items in internal free will sub-dimension of the scale were noticed to vary between.36 and.70, and the correlation values of the items in external free will sub-dimension were determined to vary between .47 and .64. Model fit of the free will scale was investigated with first order CFA. Chi-square fit value ($\chi^2=261{,}91$, Sd=134, p=.00) for the factor structure of the free will scale including 18 items and two sub-dimensions was found to be significant, and χ^2/df value related to model fit was determined as 1.95. Internal consistency analysis and split-half reliability analysis were performed to determine the reliability of the Free Will Scale.