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Scale of Life Skills Supporting Learning for Higher Education Students

Yükseköğretim Öğrencileri için Öğrenmeyi Destekleyen Yaşam Becerileri Ölçeği

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Özet

Bu çalışmada, üniversite öğrencilerinin öğrenmelerini destekleyen yaşam beceri düzeylerini belirlemek amacıyla bir ölçek geliştirilmiştir. Çalışma grubunu, Pamukkale ve Muğla Sıtkı Koçman Üniversitelerinin farklı fakültelerinde öğrenim gören 378 öğrenci oluşturmaktadır. Ölçeğin geliştirilmesi sürecinde, alanyazın tarama, madde havuzu oluşturma, uzman görüşleri alma, ön deneme çalışması yapma, birinci uygulama, ikinci uygulama, geçerlik ve güvenirlik analizleri yapma işlemleri gerçekleştirilmiştir. Açımlayıcı ve doğrulayıcı faktör analizleri ile madde analizleri sonucunda ölçekte 23 madde yer almıştır. Açımlayıcı faktör analizleri sonucunda ölçeğin, öğrenmeyi destekleyen yaşam becerilerine ilişkin tek boyutlu bir yapıya sahip olduğu görülmüştür. Ölçek maddeleri, belirtilen tek faktöre ilişkin toplam varyansın %43.94'ünü açıklamaktadır. Yapılan doğrulayıcı faktör analizleri sonucunda ölçek maddelerinin madde-faktör yük değerlerinin .50 ile .67 arasında değiştiği belirlenmiştir. Ölçek maddelerinde %27'lik alt-üst grupların ortalamaları arasındaki farkların anlamlı olduğu bulunmuştur. Tüm ölçeğe ait Cronbach alfa iç tutarlılık katsayısı, α=.94'tür. Bu bulguların, ölçeğin geçerliği ve güvenirliği için tatmin edici kanıtlar olduğu ifade edilebilir.

Anahtar sözcükler: Geçerlik, güvenirlik, öğrenmeyi destekleyen yaşam becerileri, ölçek, üniversite öğrencileri.

Abstract

In this study, a scale was developed in order to determine the levels of life skills supporting learning of university students. The study group consisted of 378 students from different faculties of Pamukkale and Muğla Sıtkı Koçman Universities. In the process of developing the scale, a literature review was conducted, a pool of items was constructed, expert opinions were sought, preliminary studies were carried out, first application, second application, validity and reliability analyses were carried out. As a result of the item analyses performed by using exploratory and confirmatory factor analyses, a total of 23 items remained in the scale. As a result of exploratory factor analysis, it was observed that the scale had one-dimensional structure related to life skills supporting learning. The scale items gathered under a single factor explained 43.94% of the total variance. As a result of the confirmatory factor analysis, item-factor loading values of the scale items were found to be ranging between .50 and .67. It was found that the differences between the means of the upper and lower 27% groups were significant. The Cronbach alpha internal consistency coefficient of the scale was found to be α=.94. It was concluded that these findings show that the scale is valid and reliable.

Keywords: Higher education students, life skills supporting learning, reliability, scale, validity.

Educators and families primarily expect education to strengthen children's life skills. Life skills are those that one needs in order to be successful in the world by adapting to his/her own socio-cultural context (Binkley et al., 2005). Individuals with improved life skills have characteristics required to be engaged in self-discovery and to find solutions to their problems in daily life (Goldsmith, 2005; World Health Organization [WHO], 1997). They can also develop skills necessary for knowledge generation, effective communication, and teamwork.

Life skills allow individuals to build self-confidence and help them cope with problems like bullying and discrimination successfully. They also help individuals gain experience and expertise necessary for individuals to claim rights and take responsibility while dealing with difficulties and making use of opportunities in their lives (Parry & Nomikou, 2014). These skills help young people to develop attitudes and knowledge so that they can reduce certain risky behaviors, make better career planning, make better decisions and improve positive communication skills (WHO, 1997).

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Life skills that are widely used in education, health, social and human sciences have different definitions. Danish, Forneris, Hodge and Heke (2004) define life skills as "skills that allow individuals to be successful in different contexts like school, home and street". Parry and Nomikou (2014) emphasize the importance of experience and learning in terms of acquiring life skills and they define the term as follows; "life skills are a series of skills that are used to solve problems in daily life and gained through direct experience and learning". WHO (1999) describes life skills as positive behaviors and adaptable skills allowing individuals to cope with daily life problems in an effective way.

Life skills are learnable and improvable physical (e.g. a straight standing), behavioral (e.g. an effective communication), cognitive (e.g. effective decision making), interpersonal or internal skills (Cronin & Allen, 2017; Danish & Donohue, 1995; Danish & Nellen, 1997; Goudas, Dermitzaki, Leondari, & Danish, 2006). In this regard, these skills are variously classified based on the field or program. Gazda and Brooks (1985) classified life skills under seven categories as personal development, problem-solving, communication, determination, self-confidence, critical thinking, and central thinking (Özmete, 2011). Papacharisis, Goudas, Danish and Theodorakis (2005) grouped life skills as staying calm under pressure, problem-solving, setting an objective, communication, coping with success and failure, teamwork, receiving feedback. International Youth Forum (IYF, 2014) analysed 57 different life skills in a project funded by World Bank and identified 10 common standards. Fundamental life skills identified by the foundation are self-confidence, respecting others and self-respect, interpersonal skills (empathy, compassion), emotion management, personal responsibility (confidence, honesty, work ethic), positive attitude and motivation, conflict management, teamwork, communication (listening, oral and written), cooperation, creative thinking, critical thinking, problem-solving, and decision making. WHO (1999) and UNICEF (1999) classified life skills as decision making, problem-solving, creative thinking, critical thinking, effective communication, interpersonal relation skills, self-consciousness, empathy, coping with emotions and stress.

According to WHO (1997), given the characteristics of young people, traditional mechanisms (e.g. family, cultural factors etc.) may not be sufficient to improve their life skills. Therefore, in order for young people to lead a productive life in an era of change and development (Kolburan & Tosun, 2011), it is desirable that they take education on life skills through a planned and purposeful program. Life skills education is designed to foster cultural and developmental skills in a proper way. They help individuals in their self-development and social development, in having a healthy life and dealing with social problems and protecting human rights. Besides, life skills education encourages individuals gain competencies in many fields such as primary education, gender equality, democracy, good citizenship, child care, quality of education system, supporting lifelong learning, quality of life, promoting peace (WHO, 1999).

Teaching life skills is necessary to encourage growing healthy children and adolescents as well as preparing young people for the changing social conditions (WHO, 1999). Varied programs have been developed and administered in order to teach these skills to individuals in a purposeful and planned way. It is commonly believed that life skills can be measured and developed through qualified education. Life skills intervention programs aim to satisfy individuals' psychological needs, reduce negative behaviors, and encourage psychological well-being (Botvin & Griffin, 2004; Hodge, Danish, & Martin, 2012; Smith, Swisher, Vicary, & Bechtel, 2004; Wiedemann, 2013).

Life skills education is provided in various contexts to help individuals improve conscious decision making, effective communication, and lead a healthy and productive life. Danish and others (cited by Goudas et al., 2006) developed a 10-hour GOAL program for secondary school students. This program was designed with the aim of fostering self-control and self-confidence in adolescents so that they have better decision making and good citizenship behaviors (Goudas et al., 2006). Robinson and Zajicek (2005) carried out an experimental research with experimental and control groups to evaluate the development of life skills of primary school students attending school garden program. Pretest-posttest design was employed to determine the development of life skills in six categories; teamwork, self-understanding, leadership, decision making, communication, and willingness. At the end of one-year school garden program, findings of the evaluation showed that there was considerable increase in the experimental group scores.

Özmete (2008) argues that life skills should be included in education programs and continues that modern societies discuss the types of life skills promoting healthy and qualified life-style for young people. Social Development Group in Washington University studied more than 150 life skills programs in 2002 (Catalano, Berglund, Ryan, Lonczak, & Hawkins, 2002). Findings of this study underlined that conceptualizing, program components, and outcomes should be defined more clearly in life skills programs. Thus, there has been institutional and individual research carried out on conceptualizing and functionalizing positive components of young development (Duerden, Witt, Fernandez, Bryant, & Theriault, 2012).

Life skills programs, education and scale development have been carried out in Turkey both by Ministry of National Education (MoNE) and individual researchers (Akfırat & Kezer, 2016; Bahçeci & Kuru, 2008; Bolat & Balaman, 2017; Güvenç & Aktaş, 2006; Kolburan & Tosun, 2011; Özmete, 2008; Sefer & Akfırat, 2009; Ümmet & Demirci, 2017). Kolburan and Tosun (2011) conducted life skills education between 2006 and 2010 in a private secondary school to improve school success and life skills. Critical thinking, learning to learn, problem-solving, creative thinking, decision making, setting a target, effective communication, self-confidence and effective listening are among the skills that were observed and evaluated during the program. Later, this program was reported as an example model. Life skills activity book was written as an outcome of the Fight Against Violence Towards Children Project in 2013–2015 funded by MoNE Special Education Department, European Union and Turkish Republic. This book provides subjects and activities on communication, awareness of rights and responsibilities, conflict resolution, overcoming the stress, and objective evaluation of information tools. The project aimed to provide children with necessary skills to fight with psychosocial problems and fulfil their potential (Demircioğlu, Arıcı-Şahin, Demirtaş-Zorbaz, & Kepir-Savoly, 2015).

Besides these education programs, MoNE aims to put life skills into various disciplines in schools. Life skills are involved in each course curriculum. For example, there are 23 life skills in the life sciences course curriculum. Moreover, improving and employing life skills are included among the objectives of these courses (MoNE, 2018).

Life skills, which have contribution to behavioral development, are tested through specific measurement tools developed by researchers (Bolat & Balaman, 2017; Cronin & Allen, 2017; Kadish, Glaser, Calhoun, & Ginter, 2001; Kennedy, Pearson, & Brett-Taylor, 2014; Özmete, 2008; Seevers, Dormody, & Clason, 1995; Sharma, 2003; Subasree & Nair, 2014). Researchers use different ways to develop these instruments depending on their aims. For example, Seevers and others (1995) used Miller's scale (1976) on life skills as a sub-dimension in their own life skills measurement tool. The Youth Leadership Life Skills Development Scale measures communication, decision making, living together with others, learning, self-understanding and teamwork skills with 30 items (Seevers et al., 1995). Cronin and Allen's (2017) scale measures the perception of life skills development through sports. This scale measures life skills under eight sub-dimensions as teamwork, goal setting, time management, emotional skills, interpersonal communication, social skills, leadership and problem-solving, and decision making.

When the measurement tools of life skills developed in Turkey are analyzed, it is seen that Özmete (2008) developed the first prominent scale. The scale items were created on the basis of the interviews conducted with 121 high school students. The scale consists of 23 items and 5 sub-dimensions (personal development, health, family life, consumer education, financial planning, and career planning). Bolat and Balaman (2017) developed a scale to determine life skills of education faculty students. This scale was developed from the data gathered from 471 education faculty students attending eight different departments and it consists of 30 items under 5 different sub-dimensions (coping with stress and emotions, empathy and self-consciousness, decision making and problem-solving, creative and critical thinking, communication and interpersonal relations).

There are many skills addressed in curriculums apart from life skills. This means not all of the academic skills are compulsory life skills and it is not possible to teach all of the life skills at schools (Binkley et al., 2005). However, individuals' competence to cope with life problems and discovering and developing life skills contribute to the development of their academic skills. Gazda and Brooks (1985) argue that life skills should be considered in four categories as family, school, society, and career (Yuen, 2011). In the accessible literature, no measurement tool has been found that measures life skills that support learning. In the present study, the learning-oriented dimension of life skills, which has been discussed from different perspectives in the literature, is addressed. The ultimate goal of the study was to develop a scale to measure the life skills supporting learning based on literature.

Method

Firstly, sub-dimensions of the Life Skills Supporting Learning Scale were identified and related items were created. Five-point Likert scale format is used in the scale. The scale measures university students' levels of life skills supporting learning. The participants of this study are university students.

Data Collection

Participants - First Application

Prior to the first application, the necessary permissions and ethical approvals were taken. The first application was carried out with the participation of 441 students during the spring term of the 2017–2018 academic year at different faculties of Pamukkale and Muğla Sıtkı Koçman Universities. Convenience sampling was used in identifying the participants. Demographics of the participants of the first application are presented in the Table 1.

Table 1. First application participant demographics.

First application		*n*	%
Gender	Female	232	52.6
	Male	209	47.4
University	Pamukkale University	191	43.3
	Muğla Sıtkı Koçman University	250	56.7
Department	English Language Teaching	50	11.3
	Turkish Language and Literature	80	18.1
	Art History	1	.2
	Physical Education and Sports	48	10.9
	Geography	8	1.8
	Food and Beverage Services	41	9.3
	Accounting and Finance	64	14.5
	Theology	6	1.4
	Philosophy/Sociology	44	10.0
	Computer and Instructional Technologies Education	22	5.0
	Psychological Counseling and Guidance	32	7.3
	Early Childhood Education	45	10.2
First application (Total)		441	100.00

Participants - Second Application

For the exploratory factor analysis (EFA), first application was done. Prior to the second application, the necessary permissions and ethical approvals were taken. For the final format of the scale, the second application was carried out with 378 students during the spring term of the 2017–2018 academic year at different faculties and departments of Pamukkale and Muğla Sıtkı Koçman Universities. Convenience sampling was used in identifying the participants for the second application as well. Second application was needed to make confirmatory factor analysis (CFA). Demographics of the participants of the second application are presented in Table 2.

Table 2. Second application participant demographics.

Second application		*n*	%
Gender	Female	243	64.3
	Male	135	35.7
University	Pamukkale University	186	49.2
	Muğla Sıtkı Koçman University	192	50.8
Department	Turkish Language and Literature	46	12.2
	Physical Education and Sports	31	8.2
	Philosophy/Sociology	9	2.4
	Early Childhood Education	59	15.6
	Mathematics	28	7.4
	History	42	11.1
	Social Sciences Education	68	18.0
	Turkish Language Teaching	34	9.0
	Math Education	25	6.6
	Nursing	3	.8
	Economy/ Business	3	.8
	English Language and Literature	22	5.8
	Contemporary Turkish Dialects and Literature	8	2.1
Second application (Total)		378	100.0

Development of the Life Skills Supporting Learning Scale

Preparation of the Pilot Form of the Scale

During the process of scale development, the researchers conducted a comprehensive literature review and generated items based on the certain studies (Bolat & Balaman, 2017; Botvin & Griffin, 2004; Cronin & Allen, 2017; Hodge et al., 2012; Kadish et al., 2001; Kennedy et al., 2014; Özmete, 2008; Seevers et al., 1995; Sharma, 2003; Smith et al., 2004; Subasree & Nair, 2014; WHO, 1997; Wiedemann, 2013). When creating the item pool, eight dimensions (research skills, thinking skills, affective competencies, communicative skills, learning competencies, planning skills, technological competencies, and social skills) were determined and 55 items related to the dimensions were created. Six experts with scale development expertise in the field of educational sciences were consulted in order for the scale to reflect the desired structure in full, and to have content and face validity. In line with the expert opinions, the scale items were reviewed and the number of items was decreased to 23. The trial form of the last scale was administered to two university students and a high school student and then a high school and a university student were interviewed. At the end of the interview, it was seen that there was no problem about the comprehensibility of the items.

Five-point Likert scale format was used in the scale with the following response options; "never suitable for me= 1 point", "not suitable for me= 2 points", "a bit suitable for me= 3 points", "suitable for me= 4 points" and "completely suitable for me= 5 points". A total score is calculated for the scale by adding the points taken from each item. Higher scores taken from the scale indicate high level of life skills supporting learning.

Data Analysis: Reliability and Validity Analysis

Validity analysis for The Life Skills Supporting Learning Scale was carried out in three stages. Firstly, the researchers generated items based on the literature review and different scales on learning responsibility. Secondly, these generated items were examined in terms of comprehensibility and content by a group of faculty members from the departments of psychological counselling and guidance (2), curriculum development (3), and philosophy teaching (1) departments. This process was finalized with a scale including 23 items. Thirdly, EFA and CFA were conducted. Factor and item analysis were carried out with SPSS 22.0, AMOS, and MS Excel programs.

To reveal the underlying structure among the items, an EFA was conducted. Then, the factor structure obtained with the EFA was tested with a CFA to test whether this structure was consistent with the data. Pearson correlation coefficients were analysed to determine the relations between the scale factors. The item analysis was performed considering overall scores correlation (*t*-test). The Cronbach's alpha coefficients were calculated for the reliability analysis.

Results

Various analyses and calculations were carried out for testing variability and reliability of The Life Skills Supporting Learning Scale. In this regard, outlier analysis was applied. While determining the outliers, *z*-scores ($z<3$) and Mahalanobis distance values were calculated. The normality of the distribution was tested through Shapiro-Wilk analysis and the distribution was found to be normal (first application .809, second application .942). Cronbach's alpha reliability coefficient for the 42-item pilot form used for the first application was calculated as .89. Besides, Cronbach's alpha reliability coefficient of the 23-item scale was calculated as .94. Kaiser-Meyer-Olkin (KMO) coefficient (.904) and Bartlett's test calculation results (4396.693, df=595, p=.000) used to test fit of the data in the first application were found to be significant. The factor structure of The Life Skills Supporting Learning Scale was analysed with EFA and confirmed with CFA which was carried out on 23-item scale. CFA item coefficients were found to be between .50 and .58. These analyses yielded a construct that consisted of 23 items and one factor explaining 43.94% of the total variance. Descriptive statistics of the scale are as follows: arithmetic mean= 90.62, median=92.00, mode=83.00, standard deviation= 10.17, variance=103.43, standard error of mean=.52, the lowest score= 54.00, the highest score= 115.0, and range=61.00.

Findings on the Validity of the Scale

Experts' opinions were obtained in order to ensure the scale's comprehensibility and content. Based on these opinions, seven items were removed from the scale. Data was collected from 441 students. Construct validity was analysed with EFA and confirmed with CFA. KMO coefficient (.904) and Bartlett's test calculation results (4396.693, df=595, p=.000) used were found to be significant. Data are suitable for factor analysis if KMO is higher than .60 and Bartlett's test is significant (Büyüköztürk, 2005; Seçer, 2013). According to the results of the CFA carried out, the number of items in the scale was decreased to 23 because it was found to be sufficient for the scale to have one factor. Table 3 shows the EFA results of The Life Skills Supporting Learning Scale.

EFA item values are between .50 and .67 and the scale explains 43.94% of the total variance. Construct validity was

ensured with CFA in AMOS program. Table 4 shows the CFA results (AGFI, GFI, CFI, RMSEA, SRMR, χ^2, χ^2/df) and criteria of fit index (Schermelleh-Engel, Moosbrugger, & Müler, 2003).

Fit indexes of the obtained model for The Life Skills Supporting Learning Scale were examined with the CFA and it was observed that fit index values were as follows: AGFI=.92 (perfect fit); GFI=.93 (acceptable fit); CFI=.96 (acceptable fit); RMSEA=.07 (acceptable fit); SRMR=.043 (perfect fit). Schermelleh-Engel and others (2003) argue that these fit indexes are sufficient and convenient. Chi-square result (χ^2=712.509; df=252; p<.001) is significant and the ratio between chi-square χ^2=712.509 and degree of freedom df=252 (χ^2/df=2.827) is under 4, which indicates an acceptable fit (Seçer, 2013; Şimşek, 2007). Table 5 shows the CFA results of The Life Skills Supporting Learning Scale. It shows the t-test values for the model. Item values ranged between .50 and .58. CFA results show that all of the item values in the scale are statistically significant. Based on these findings, it can be concluded that the scale is an instrument that produces valid measures.

Findings on the Item Analysis

In terms of contributing to the reliability level of the scale, item discrimination values were also calculated. With the purpose of determining the items' discriminatory power in The Life Skills Supporting Learning Scale, as well as their power for predicting the total score, the adjusted item total correlation was examined, and 27% upper-lower group comparisons were made. Table 6 shows the findings obtained through the item analysis. It shows that values of the item total correlation range between .50 and .66. When the 27% upper group's arithmetic mean, standard deviation and significance level were compared to those of the 27% lower group (n=102) it was found that the participants in the upper group had higher scores in all of the comparisons p=.000 (p<.001). Therefore, it was concluded that The Life Skills Supporting Learning Scale (Appendix 1) produces valid measures.

Table 3. EFA results of the life skills supporting learning scale.

Item no	Factor value
1	.67
2	.56
3	.57
4	.54
5	.52
6	.56
7	.53
8	.57
9	.63
10	.57
11	.63
12	.51
13	.59
14	.59
15	.53
16	.57
17	.60
18	.61
19	.60
20	.51
21	.51
22	.57
23	.55
Variance explained: 43.94%	

Findings on the Reliability of the Scale

The reliability of the measures obtained from the scale was calculated using Cronbach's alpha and the test–retest method.

Table 4. Fit indexes examined, fit indexes obtained, criteria for perfect fit, criteria for acceptable fit.

Fit indexes examined	Fit indexes obtained	Criteria for perfect fit	Criteria for acceptable fit
χ^2	712.509 (Acceptable fit)	$0 \le \chi^2 \le 2df$	$2sd < \chi^2 \le 3$df
χ^2/sd	2.827 (Acceptable fit)	$0 \le \chi^2/df \le 2$	$2 < \chi^2/df \le 3$
RMSEA	.07(Acceptable fit)	0≤RMSEA≤.05	.05<RMSEA≤.08
SRMR	.043 (Perfect fit)	0≤SRMR≤.05	.05<SRMR≤.10
CFI	.96 (Acceptable fit)	.97≤CFI≤1.00	.95≤CFI<.97
GFI	.93 (Acceptable fit)	.95≤GFI≤1.00	.90≤GFI<.95
AGFI	.92 (Perfect fit)	.90≤AGFI≤1.00	.85≤AGFI<.90

The Cronbach's alpha coefficient was calculated as $r_{1/2}$=.87 for measures obtained from the scale. Besides, internal consistency coefficient, arithmetic mean, standard deviation, median, mode, minimum and maximum values were calculated and are shown in Table 7.

For a total number of 23 items, internal consistency coefficient (.94), arithmetic mean (90.62), standard deviation (10.17), median (92.00), mode (83.00), minimum (54.00) and maximum (115.00) scores were calculated. As the Cronbach's alpha coefficient was found to be higher than .80, it was concluded that the measurement tool is reliable. Split half coefficient (.87) is another method used to test the reliability of the scale. A Cronbach's alpha value higher than .80 shows that the measurement tool is highly reliable (Özdamar, 1999; Tavşancıl, 2006). Consequently, The Life Skills Supporting Learning scale is a valid and reliable measurement tool without any reverse scored item. Table 8 shows the general features and values of the scale.

According to Özdamar (2015), data may classified depending on "Range=χ_{max}–χ_{min}". By using the ranges of the data, a number of levels are determined. And these ranges and levels can be specified within level range. For the determined levels of Life Skills Supporting Learning Scale (very low, low, middle, high, very high), (χ_{max}–χ_{min})/5 formula was used *(such as, 115-23=92; 92/5=18.40)*. And for each level, 18.40 points were used as range. The Life Skills Supporting Learning Scale allows calculating a total score. The increase in the total score indicates having higher life skills supporting learning. For example, the score of 63.00 can be explained as a middle level and the score of 101.00 can be explained as a very-high level of life skills supporting learning.

Table 5. CFA results of the life skills supporting learning scale.

Item no	CFA	*t*
1	.58	13.62
2	.54	13.56
3	.55	13.34
4	.56	13.35
5	.51	13.68
6	.52	13.35
7	.50	13.49
8	.56	13.28
9	.58	13.23
10	.54	13.67
11	.56	13.23
12	.53	13.21
13	.57	13.35
14	.54	13.37
15	.52	13.41
16	.51	13.43
17	.52	13.45
18	.54	13.40
19	.58	13.29
20	.50	13.23
21	.53	13.35
22	.55	13.34
23	.55	13.37

Discussion and Conclusion

Recently, Turkish educational system changed its approach on learning programs and veered from just providing information for students to developing a more student-centered, constructivist approach that fosters students to create their own learning experiences. This study started with the question "Do these individuals have life skills to support their learning?" A valid and reliable scale that measures these skills of individuals will provide objective results. For this purpose, The Life Skills Supporting Learning Scale developed in this study is a valid and reliable measurement tool. Although the scale is built on research skill, thinking skill, emotional competencies, communication skill, learning competencies, planning skill, and social skills that support learning, it has a different structure among the other scales developed previously. This scale measures the life skills supporting learning levels of university students. After the reliability and validity analyses, a scale with 23 items in total was developed. There is no reverse scored item in the scale. The increase in total score indicates having higher life skills supporting learning.

EFA results show that item values are between .50 and .67 and the scale explains 43.94% of the total variance. 30% or more of the variance explained in single factor patterns is sufficient (Tavşancıl, 2010). When the 27% upper group 27% (n=102) and lower group (n=102) were compared, it was found that there is a significant difference between the groups. Cronbach's alpha internal reliability coefficient was calculated as .94. A Cronbach's alpha value higher than .80 shows that the measurement tool is highly reliable (Özdamar, 1999; Tavşancıl, 2006). CFA results show that item values range between .50 and .58. Descriptive statistics of the scale are as follows: arithmetic mean= 90.62, median=92.00, mode=83.00, standard deviation= 10.17, variance=103.35,

Table 6. Item analysis results.

Item no	Item total correlation	High group (*n*=102)		Low group (*n*=102)		*p*
		$\bar{X}$	*S*	$\bar{X}$	*S*	
1	.65	4.61	.54	3.44	.71	.00
2	.53	4.42	.64	3.49	.66	.00
3	.58	4.53	.61	3.53	.69	.00
4	.53	4.58	.56	3.76	.68	.00
5	.56	4.42	.68	3.49	.74	.00
6	.53	4.41	.68	3.25	.68	.00
7	.60	4.36	.68	3.13	.78	.00
8	.55	4.49	.57	3.66	.77	.00
9	.56	4.55	.63	3.51	.69	.00
10	.66	4.36	.73	3.51	.73	.00
11	.59	4.21	.77	3.24	.94	.00
12	.63	4.54	.57	3.25	.66	.00
13	.55	4.49	.60	3.43	.72	.00
14	.58	4.54	.54	3.36	.67	.00
15	.59	4.56	.57	3.50	.77	.00
16	.55	4.38	.67	3.28	.74	.00
17	.55	4.33	.67	3.32	.83	.00
18	.64	4.29	.72	3.12	.69	.00
19	.63	4.54	.61	3.48	.81	.00
20	.59	4.43	.58	3.59	.69	.00
21	.51	4.36	.61	3.49	.80	.00
22	.56	4.45	.62	3.34	.68	.00
23	.51	4.35	.60	3.44	.69	.00

Table 7. Cronbach's alpha internal consistency and other statistics.

Number of total items	Cronbach's alpha internal consistency coefficient	*n*	$\bar{X}$	*S*	Median	Mode	Minimum	Maximum	Range
23	.94	378	90.62	10.17	92.00	83.00	54.00	115.00	61.00

Table 8. Features and values of the life skills supporting learning scale.

Number of total items	Cronbach's alpha internal consistency coefficient	Minimum score	Maximum score	Levels				
				Very low level	Low level	Middle level	High level	Very high level
23	.94	23.00	115.00	23.00–41.39	41.40–59.79	59.80–78.19	78.20–96.59	96.60–115.00

standard error of mean= .52, the lowest score= 54.00, the highest score= 115.0, and range=61.00.

EFA was confirmed with CFA using AMOS program to test whether this structure was consistent with the data. Fit indexes of the obtained model for The Life Skills Supporting Learning Scale were examined in the CFA, and the fit index values were found to be as follows: AGFI=.92 (perfect fit); GFI=.93 (acceptable fit); CFI=.96 (acceptable fit); RMSEA=.07 (acceptable fit); SRMR=.043 (perfect fit). Schermelleh-Engel and others (2003) argue that these fit indexes are sufficient and convenient. Chi-square result (χ^2=712.509; *df*=252; *p*<.001) is significant. Besides, CFA results show that all of the item values in the scale are statistically significant. The item-factor loading values in the CFA ranged from .40 to .58. It is seen that the *t* values of the items vary between 13.22 and 13.55. *t*-values greater than 1.96 indicate .05 level of significance and greater than 2.58 indicate .01 level of significance (Jöreskog & Sörbom, 1993; Kline, 2011; as cited in İlhan & Çetin, 2014). This shows that t-values obtained from CFA were significant at the level of .01.

The measurement tool, whose validity and reliability studies were carried out in the current study, emerged as a result of approaching life skills from a different perspective. In the study, life skills were discussed in relation to supporting learning. This measurement tool is especially important in terms of determining the levels of life skills that support higher education students' learning. Based on the findings, it can be concluded that the construct validity of the scale was established. The Life Skills Supporting Learning Scale was developed in this study. The scale can be used to determine university students' levels of life skills supporting learning. Reliability and validity of the scale can be re-tested for different sample groups. The scale is hoped to be beneficial for further research.

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Appendix 1. Original scale (Turkish).

Sevgili Öğrenciler,

Bu ölçek öğrenmeyi destekleyen yaşam beceri düzeyinizi belirlemeyi amaçlamaktadır. Ölçeğe vereceğiniz içten ve gerçekçi yanıtlar araştırmamızın bilimsel geçerliliğini doğrudan etkileyecektir.

Katılımınız ve zaman ayırdığınız için çok teşekkür ederiz.

Cinsiyet: ☐ Kadın ☐ Erkek

Üniversite: ……

Bölüm: ……

Sınıf: 1 ☐ 2 ☐ 3 ☐ 4 ☐

Öğrenmeyi Destekleyen Yaşam Becerileri Ölçeği (ÖDYBÖ)

Sıra	Ölçek Maddeleri (Üniversite Öğrencileri İçin)	Bana hiç uygun değil	Bana uygun değil	Bana kısmen uygun	Bana uygun	Bana tamamen uygun
1.	Öğrenmek istediğim şeylerle ilgili ayrıntılara ulaşmaya çalışırım.	(1)	(2)	(3)	(4)	(5)
2.	Öğrenmeye ihtiyaç duyduğum bilgilere ulaşmada farklı yollar denerim.	(1)	(2)	(3)	(4)	(5)
3.	Karşılaştığım problemlere yönelik farklı çözüm yolları üretirim.	(1)	(2)	(3)	(4)	(5)
4.	Karşılaştığım problemlere ilişkin ürettiğim çözüm yolları arasından en uygun olanını seçip uygularım.	(1)	(2)	(3)	(4)	(5)
5.	Sahip olduğum bilgileri farklı alanlarda kullanırım.	(1)	(2)	(3)	(4)	(5)
6.	Öğrendiğim şeylerin farklı özelliklerini bilmeyi hedeflerim.	(1)	(2)	(3)	(4)	(5)
7.	Bir şey öğrenirken ölçütler belirleyerek öğrendiklerimle ilgili çıkarımlarda bulunurum.	(1)	(2)	(3)	(4)	(5)
8.	Daha önce öğrendiklerimi, yeni öğreneceğim şeyler için temel olarak kullanırım.	(1)	(2)	(3)	(4)	(5)
9.	Öğrendiklerimle ilgili çıkarımlar yaparak yeni şeyler öğrenmeye yönelirim.	(1)	(2)	(3)	(4)	(5)
10.	Karşılaştığım problemleri, öğrendiklerim arasında mantıksal ilişkiler kurarak çözerim.	(1)	(2)	(3)	(4)	(5)
11.	Sahip olduğum bilgi birikimini geliştirmek için elimden gelen çabayı gösteririm.	(1)	(2)	(3)	(4)	(5)
12.	Bir şey öğrenirken öğrenmemi kolaylaştıracak gereklilikleri yerine getiririm.	(1)	(2)	(3)	(4)	(5)
13.	Kendimi iyi ifade edebilmem yeni bir şey öğrenmemi kolaylaştırır.	(1)	(2)	(3)	(4)	(5)
14.	Kendimi geliştirmek amacıyla daha fazla şey öğrenmek için çaba sarf ederim.	(1)	(2)	(3)	(4)	(5)
15.	Öğrenmek istediğim şeyleri öğrenip öğrenmediğimi kontrol ederim.	(1)	(2)	(3)	(4)	(5)
16.	Öğrendiğim şeylerle ilgili kendi kendimi değerlendiririm.	(1)	(2)	(3)	(4)	(5)
17.	Her öğrendiğim şeyi kendim için yeni bir fırsata dönüştürürüm.	(1)	(2)	(3)	(4)	(5)
18.	Değişen dünyaya uyum sağlamak için yeni bilgiler edinmeye çaba gösteririm.	(1)	(2)	(3)	(4)	(5)
19.	Bir şey öğrenirken sahip olduğum becerileri kullanarak hareket ederim.	(1)	(2)	(3)	(4)	(5)
20.	Yeni bir şey öğrenmek için gerçekçi hedefler belirlerim.	(1)	(2)	(3)	(4)	(5)
21.	Öğrenmek istediğim şeyler için kendime uygun koşullar oluştururum.	(1)	(2)	(3)	(4)	(5)
22.	Öğrenmek istediğim bir şeyi öğrenemediğimde farklı yollar denerim.	(1)	(2)	(3)	(4)	(5)
23.	Toplumun yararı için sahip olduğum bilgi birikimini geliştiririm.	(1)	(2)	(3)	(4)	(5)