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Scale of Time Traps Teachers Fall into: A Validity and Reliability Study

Öğretmenlerin Düştüğü Zaman Tuzakları Ölçeği: Geçerlik ve Güvenirlik Çalışması



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ABSTRACT: The aim of this study is to develop a valid and reliable scale to measure the time traps teachers fall into during the teaching-learning process. The sample consists of 234 final-year students continuing their education at the Faculty of Education in the first implementation and 233 pedagogical formation students in the second implementation. Expert opinion was sought for content and face validity of the scale, and exploratory factor analysis (EFA) and confirmatory factor analysis (CFA) were applied for construct validity. For reliability analysis, Cronbach's Alpha internal consistency, Spearman-Brown, and Guttmann split-half coefficients were calculated, and corrected item-total correlations were used for item analysis. In the first implementation, six items with low factor loadings were removed from the 50-item scale as a result of EFA. It was determined that the remaining items had sufficient factor loadings, were unidimensional, and explained 39.3% of the variance. After EFA, the Cronbach's Alpha internal consistency coefficient was found to be .96, Spearman-Brown and Guttmann split-half coefficients were calculated as .91, and the corrected item-total correlations ranged from .34 to .75. Following CFA, 21 items remained in the scale, and the fit indices for the unidimensional structure were within the recommended limits. After CFA, the Cronbach's Alpha internal consistency coefficient was found to be .91, Spearman-Brown and Guttmann split-half coefficients were calculated as .85, and the corrected item-total correlations ranged from .37 to .73.

Keywords: Teacher, time trap, scale development, validity, reliability.

ÖZ: Bu araştırmanın amacı, öğrenme-öğretme sürecinde öğretmenlerin düştüğü zaman tuzaklarını ölçmeye yönelik geçerli ve güvenilir bir ölçek geliştirmektir. Örneklem, birinci uygulamada eğitim fakültesinde öğrenimine devam eden 234 son sınıf öğrencisi ve ikinci uygulamada 233 pedagojik formasyon öğrencisinden oluşmaktadır. Ölçeğin kapsam ve görünüş geçerliği için uzman görüşüne başvurulmuş, yapı geçerliği için açımlayıcı faktör analizi (AFA) ve doğrulayıcı faktör analizi (DFA) uygulanmıştır. Güvenirlik analizi için Cronbach Alfa iç tutarlık, Spearman Brown, Gutmann split-half katsayısı hesaplanmış ve madde analizi için düzeltilmiş madde toplam korelasyonlarından yararlanılmıştır. İlk uygulamada 50 maddeden oluşan ölçekten, AFA sonucunda faktör yükü düşük olan altı madde çıkarılmıştır. Kalan maddelerin yeterli faktör yüküne sahip, tek boyutlu bir yapıda olduğu ve açıklanan varyansın %39.3 olduğu belirlenmiştir. AFA sonrası Cronbach Alfa iç tutarlık katsayısı .96, Spearman-Brown ve Guttman splithalf katsayıları .91 olarak hesaplanmış, düzeltilmiş madde toplam korelasyonlarının .34 ile .75 arasında değiştiği ortaya çıkmıştır. DFA sonucunda, ölçekte 21 madde kalmış ve tek boyutlu yapıya ilişkin uyum indekslerinin önerilen sınırlar içerisinde kaldığı belirlenmiştir. DFA sonrası Cronbach Alfa iç tutarlık katsayısı .91, Spearman-Brown ve Guttman split-half katsayıları .85 olarak hesaplanmış, düzeltilmiş madde toplam korelasyonlarının .37 ile .73 arasında değiştiği ortaya çıkmıştır.

Anahtar kelimeler: Öğretmen, zaman tuzağı, ölçek geliştirme, geçerlik, güvenirlik.

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Citation Information

In today's world, while our needs are rapidly increasing, our resources are rapidly decreasing. Among these diminishing resources, time stands out. Time is an ever-progressing and unstoppable resource which everyone has equally (Eğilmez & Uçar, 2023). It is the duration within which an activity occurs, will occur, or is occurring (Turkish Language Institution Dictionaries). Time is a limited and continuously depleting resource. It is up to individuals to use time effectively or waste it. The first step to using time efficiently is for humans, who can control many areas in nature and social life, to be able to control themselves (İğdeler, 2001). Although it varies according to the tasks each individual undertakes, with the rapidly increasing need for professional and educational knowledge and skills, individuals today are expected to use time effectively and efficiently to be successful. Each person uses their time according to their own goals (Alay & Koçak, 2003). Individuals who manage their time well can allocate more time to their personal activities and can achieve their goals effectively and efficiently in both their personal lives and professional careers (Kocabaş & Erdem, 2003).

The effective and efficient use of time is related to time management. Time management is defined by Mackenzie and Nickerson (2009) not as an external imposition, but as self-discipline on the way to achieving goals. Similarly, according to Güçlü (2001), time management is essentially self-management; it is about controlling the events we experience and managing events by guiding oneself. According to Kocabas and Erdem (2003), it is the process of applying management functions such as planning, organizing, and controlling to one's activities in order to achieve goals effectively and efficiently in both personal and professional life. According to Taş (2004), two things are important in time management. The first is to prioritize what is urgent. This expresses expectations and directs people to pursue priorities. The second is to prioritize what is important. This expresses goals and ensures that life is conducted in accordance with these goals. According to Dunke, Heckmann, Nickel, and Saldanhada-Gama (2018), the main components of the future are time and uncertainty. Time refers to the amount of the future to be considered, while uncertainty explains the degree and type of information available about future developments. Failing to address these two aspects appropriately leads to what we call a time trap. A time trap refers to situations where the importance of time is recognized but not adequately processed.

Time traps are factors which prevent individuals from using their time effectively and efficiently, rendering much of their time unproductive and wasted. According to İğdeler (2001), many time traps originate from within ourselves, but there are also numerous time traps that come from external sources. The most significant threat posed by time traps is failure. Time traps slowly deplete those who fall into them; they turn habits and exceptions into rules. According to Mackenzie, some of the time traps which hinder goal achievement include inadequate planning, excessive involvement, personal disorganization, lack of self-discipline, inability to say no, procrastination, leaving tasks unfinished, socializing, and poor communication (Mackenzie & Nickerson, 2009). Falling into a time trap is a significant barrier, especially in achieving goals. In such cases, individuals need to avoid time traps and develop skills for managing time more effectively to reach their objectives. Like other professions, teachers need to develop their time management skills to avoid time traps and manage their time effectively. This is crucial because maximizing students' learning

potential in the learning-teaching process is a complex and dynamic process. There are a number of time traps which teachers can fall into during this process. These traps can hinder teachers from using their time efficiently and affect student success. To avoid these traps, it is important for teachers to set priorities and prevent unnecessary time losses.

A review of the relevant literature reveals that studies on developing scales related to time traps are limited. For example, in a study conducted by Tortumlu and Uzun (2023), the validity and reliability of the Modern Era Time Traps Scale were examined to determine the extent to which university students are affected by 21stcentury time traps. In a research conducted by Enterieva and Sezgin (2020), two separate scales were developed to validly and reliably measure teaching time traps in middle schools and the effectiveness of teaching time. Buldum (2023) developed a survey to determine classroom teachers' views on time usage and time traps. Yenilmez (2010) developed a survey to identify primary school teachers' views on time usage, time traps, and effective time management. As it can be seen, there are existing studies on developing scales/surveys to identify time traps for teachers and university students. However, there are no scale development studies aimed at identifying the time traps teachers fall into during the learning-teaching process from the perspective of teacher candidates taking the teaching practice course. The teaching practice course is an important component of the preparation process for teaching profession. These courses help teacher candidates gain classroom experience and transform their theoretical knowledge into practical application. Developing a scale to identify time traps which teachers fall into, whether knowingly or unknowingly, during the practice phase is crucial for raising awareness about time traps among future teachers. Therefore, this study aims to develop a valid and reliable scale to measure the time traps teachers fall into during the learning-teaching process.

Method

Research Model

According to Güler, Teker, and İlhan (2019), studies aimed at developing, adapting, or revising measurement tools are considered quantitative descriptive research. Since this research aims to develop a valid and reliable scale to measure the time traps teachers fall into during the learning-teaching process, it can be characterized as a quantitative descriptive study.

Participants

This research was conducted during the spring semester of the 2023-2024 academic year at the Faculty of Education of a state university. Criterion sampling, a type of purposive sampling, was used to determine the participants. In accordance with the aim of the study, the sample was selected from final-year students of the faculty of education and pedagogical formation students. Additionally, since the goal was to identify the time traps teachers fall into during the teaching-learning process from the perspective of teacher candidates, the criterion for participation was being enrolled in the Teaching Practice I course.

Data for the scale development process were collected in two stages. For EFA, data were collected from 234 final-year students studying in the Turkish, English, Secondary Education Mathematics, Primary Education Mathematics, Science, Geography, and Social Studies departments at the Faculty of Education. For CFA, data were collected from 233 pedagogical formation students studying in the Mathematics, Accounting, Child Development, Physical Education, Philosophy, Sociology, Religious Culture and Ethics, and Engineering departments.

Scale Development Process

In the scale development process, a literature review on the topic was first conducted, and a pool of items consisting of 60 items in a five-point Likert scale (always = 5, often = 4, sometimes = 3, rarely = 2, never = 1) was created. The item pool was reviewed for face and content validity by four experts (two in education sciences, one in field education, and one in measurement and evaluation) and two teachers. Based on their feedback and suggestions, similar items which the experts agreed on were combined, items not considered time traps were removed, and the content of some items was revised. For example, the items "Talking constantly about personal/health issues in class," "Frequently telling life stories in class," and "Talking for a long time about a topic that is suddenly opened/current events in the lesson" were combined into "Talking about non-lesson topics (personal issues, life stories, current events, etc.) during the lesson". The item "Evaluating exam papers in class" was changed to "Grading exam papers in class." The item "Allowing distractions to be present in the classroom environment" was not considered a time trap by experts and was removed from the scale. After similar revisions based on the experts' feedback, the application of the 50item pilot form was carried out. Using the data obtained from the initial application, EFA was performed to assess the scale's construct validity, followed by reliability and item analysis. Based on the data from the second application of the remaining items after EFA, CFA was conducted, followed by further reliability and item analyses.

Data Analysis

Before proceeding with the data analysis, the data sets for EFA and CFA were first examined for sample size adequacy, univariate and multivariate outliers, and univariate and multivariate normality.

Kline (2011) suggests that a typical sample size in factor analysis studies should be approximately 200 individuals. Tabachnick and Fidell (2001) also stated that a sample size of 150 is adequate. Accordingly, it was concluded that the sample sizes for both datasets are appropriate for conducting validity and reliability studies. Univariate outliers were determined by examining Z-scores, and observations outside the ±4 range, as recommended by Stevens (2009), were considered outliers. Based on this, no univariate outliers were found in the EFA (between -2.40036 and +3.00852) and CFA (between -2.40036 and +3.54733) datasets. For multivariate outliers, Aybek's (2021) web tool, which operates with R software and was developed to prepare data for factor analysis, was used. In the dataset for EFA, 15 observations and in the dataset for CFA, 33 observations were identified as multivariate outliers. After removing these participants, 219 and 200 observations remained in the EFA and CFA datasets, respectively. The assumptions of univariate and multivariate normality for both datasets were assessed using the cleaned datasets provided by Aybek's (2021) web tool. For

univariate normality, the skewness and kurtosis coefficients of the total scores were calculated. The multivariate normality test was assessed using Henze-Zirkler's multivariate normality test results from Aybek's (2021) web tool. The results of the univariate and multivariate normality tests are presented in Table 1.

Table 1

The Results of the Univariate and Multivariate Normality Tests

	Ske	Skewness		rtosis	Henze-Zirkler
	Statistic	Std. Error	Statistic	Std. Error	nelize-Zirkier
AFA dataset	.547	.164	.057	.327	HZ=1.568407, p=.000
DFA dataset	.765	.172	.012 .342		HZ=1.560953, p=.000

According to Table 1, the fact that the skewness and kurtosis coefficients of both datasets fall within the range of ± 1 is considered as an indication that the univariate normality assumption is met (Çokluk, Şekercioğlu, & Büyüköztürk, 2012). However, the significance of the Henze-Zirkler test results indicates that the data do not meet the multivariate normality assumption. To determine the factor structures of the test, EFA was conducted using the "JASP 0.18.3" software. Since the data did not meet the multivariate normality assumption, Principal Axis Factoring (Costello & Osborne, 2005) was used in the EFA.

To determine whether the factor structure obtained from the EFA was confirmed as a model, CFA was performed using the "JASP 0.18.3" program. Since the dataset for CFA did not meet the multivariate normality assumption, the Robust Maximum Likelihood estimation method (Şimşek, 2007) was employed. To test the reliability of the scale after both EFA and CFA, Cronbach's Alpha internal consistency, Spearman Brown and Guttmann split-half coefficents were calculated. Additionally, corrected item-total correlations were examined to assess item discriminability and to identify whether any item did not serve the purpose of the scale.

Ethical Procedures

This study was deemed ethically appropriate by the Ethics Committee of Social and Human Sciences at Dicle University in accordance with the Higher Education Institutions Directive on Scientific Research and Publication Ethics (Date: 01.05.2024, Reference No: E-14679147-663.05-698178).

Results

Exploratory Factor Analysis (EFA)

EFA was conducted to determine the factor structures of the scale. To assess whether the data set was suitable for factor analysis, the Kaiser-Meyer-Olkin (KMO) coefficient and Bartlett's Test of Sphericity were examined. The KMO value was found to be .93, and the chi-square value from Bartlett's test was significant [$\chi^2(1225)=6367.654$, p=.000]. According to Büyüköztürk (2011), a KMO value higher than .60 and a significant Bartlett's Test indicate that the data are suitable for factor

analysis. Based on these findings, it was concluded that the data were suitable for factor analysis.

In EFA, factors with an eigenvalue of 1 or greater are considered significant factors (Büyüköztürk, 2011). The EFA conducted using Principal Axis Factoring revealed that there were 10 factors with eigenvalues above 1. When determining the number of significant factors in EFA, Lord (1980) stated that unidimensionality can be identified if the first factor has a high eigenvalue and explains a large portion of the variance, while the second factor shows a noticeable drop in these values, and the eigenvalues of the second and subsequent factors are similar to each other (Çokluk et al., 2012). When examining the analysis results obtained without any rotation, it was observed that the first factor contributed 35.2% to the total variance, and the second factor contributed 5.0%, with a ratio of approximately 7 between them. The contributions of the third and other factors to the total variance were 3.0%, 2.7%, 2.0%, 1.8%, 1.5%, 1.4%, 1.3%, and 1.1%, respectively. It was observed that the first component significantly contributed to the variance, while this contribution decreased from the second component onwards, and the contributions of the remaining factors were low and similar to each other. Based on this, it was concluded that the scale is unidimensional.

When limited to a single factor and evaluated for whether the factor loadings meet the acceptance criteria, it was ensured that the factor loadings were at least .30 (Büyüköztürk, 2011; Çokluk et al., 2012; Seçer, 2013). It was observed that the factor loadings for items 3, 4, 5, 6, 7, and 11 were below .30. Therefore, these six items were removed from the scale as they were below value. The factor loadings of the scale in its final state are provided in Table 2.

Table 2

The Factor Loadings of the Scale in its Final State

Item no	Factor loading	Item no	Factor loading	Item no	Factor loading	Item no	Factor loading
1.	.45	18.	.34	29.	.60	40.	.75
2.	.48	19.	.69	30.	.71	41.	.68
8.	.63	20.	.64	31.	.64	42.	.73
9.	.48	21.	.53	32.	.45	43.	.67
10.	.57	22.	.64	33.	.61	44.	.73
12.	.43	23.	.71	34.	.64	45.	.55
13.	.57	24.	.62	35.	.57	46.	.75
14.	.57	25.	.63	36.	.63	47.	.76
15.	.67	26.	.71	37.	.63	48.	.71
16.	.68	27.	.67	38.	.74	49.	.60
17.	.68	28.	.51	39.	.63	50.	.64

Total variance explained: 39.3%

Table 2 shows that the factor loadings of the scale in its final state range between .34 and .76. Additionally, it was noted that the explained variance was 39.3%. According to Büyüköztürk (2011), for single-factor scales, an explained variance of 30% or more is considered sufficient.

Reliability and Item Analysis

The Cronbach's Alpha internal consistency, Spearman Brown and Guttmann split-half coefficients calculated for reliability, along with the results of the item analysis, are presented in Table 3.

Table 3
Reliability and Item Analysis Results

Item no	Corrected item- total correlation	Item no	Corrected item- total correlation	Item no	Corrected item- total correlation	Item no	Corrected item- total correlation
1.	.44	18.	.34	29.	.59	40.	.73
2.	.47	19.	.68	30.	.70	41.	.67
8.	.62	20.	.63	31.	.63	42.	.71
9.	.47	21.	.53	32.	.44	43.	.65
10.	.57	22.	.63	33.	.60	44.	.71
12.	.43	23.	.69	34.	.63	45.	.53
13.	.57	24.	.60	35.	.55	46.	.73
14.	.56	25.	.62	36.	.62	47.	.75
15.	.66	26.	.69	37.	.62	48.	.69
16.	.67	27.	.65	38.	.72	49.	.58
17.	.67	28.	.51	39.	.62	50.	.63

Cronbach's Alpha internal consistency coefficient: .96

Spearman Brown ve Guttmann split-half coefficent: .91

After EFA, the Cronbach's Alpha internal consistency coefficient was found to be .96, and the Spearman-Brown and Guttman split-half coefficients were calculated as .91. On the other hand, the corrected item-total correlations ranged between .34 and .75. In general, scales with reliability coefficients of .70 and above are considered reliable (Büyüköztürk, 2011; Urbina, 2004). Furthermore, items with item-total correlations of .30 or higher are considered to have good discriminative power (Büyüköztürk, 2011). Accordingly, it can be stated that the scale has high reliability and discriminative power after EFA.

Confirmatory Factor Analysis (CFA)

Following EFA, the one-factor structure of the scale consisting of 44 items was tested using CFA to determine if it could be validated as a model. According to Seçer (2015), the factor loadings in CFA should be at least .30, and according to Kline (2011), error variances should be less than .90. As a result of the CFA, items 1, 2, 3, 5, 8, 9, 10,

and 12 were removed from the scale because their factor loadings were below .30 and the error variances of items 6, 22, 23, 25, and 26 were above .90. The remaining items had factor loadings ranging from .30 to .74 and error variances ranging from .24 to .80.

Several fit indices are used to assess the adequacy of the model tested in CFA. There are differing opinions among researchers regarding the criteria for evaluating fit indices (Weston & Gore, 2006). The fit indices examined in this study and their corresponding threshold values are presented in Table 4.

Table 4

Fit Indices Examined in the Study and Their Threshold Values

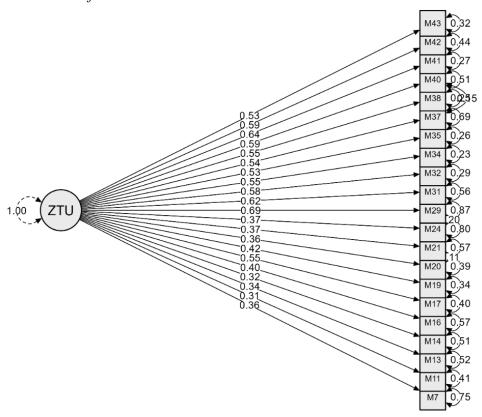
Fit indices	χ^2/ sd^a	RMSEA ^b	SRMR ^c	CFI ^c	NNFI°
Fit criteria	<3	<.10	<.10	>.90	>.90

⁽a)Marsh & Hocevar, 1985; b)Meyers vd., 2006; c)Pituch & Stevens, 2016; cited in Gezen & İlhan, 2023)

The fit indices of the tested model in CFA were outside the acceptable range based on the threshold values shown in Table 4. According to Kline (2011), if the CFA results show poor fit indices, modification suggestions in the output files may need to be considered. Therefore, modification suggestions among items within the same dimension after the analysis were reviewed. Items recommended for linking with multiple theoretically similar items (4, 15, 18, 27, 28, 30, 33, 36, 39, 44) were removed from the test. Additionally, modifications were made among items that were also theoretically similar (37 with 40, 24 with 29, 20 with 21).

Figure 1

Measurement Model of the Scale



After removing items and making the modifications, the measurement model shown in Figure 1 was obtained. It is observed that the factor loadings for the remaining 21 items range between .31 and .69, and the error variances range between .23 and .87. Therefore, it can be stated that there are no problems related to factor loadings and error variances. The fit indices for the model presented in Figure 1 are provided in Table 5.

Table 5
Fit Indices for the Model

Fit indices	χ^2	sd	χ^2 / sd	RMSEA	SRMR	CFI	NNFI
Fit criteria	328.496	186	1.77	.062	.054	.91	.90

As shown in Table 5, the fit indices for the model remain within the threshold values provided in Table 1.

Reliability and Item Analysis

The Cronbach's Alpha internal consistency, Spearman Brown and Guttmann split-half coefficients calculated for reliability, along with the results of the item analysis, are presented in Table 6.

Table 6
Reliability and Item Analysis Results

Item no	Corrected item-total correlation	Item no	Corrected item-total correlation	Item no	Corrected item-total correlation
7.	.37	20.	.49	35.	.65
11.	.43	21.	.46	37.	.52
13.	.43	24.	.39	38.	.70
14.	.41	29.	.59	40.	.62
16.	.47	31.	.61	41.	.73
17.	.63	32.	.69	42.	.64
19.	.58	34.	.69	43.	.64

Cronbach's Alpha internal consistency coefficient: .91

Spearman Brown ve Guttmann split-half coefficent: .85

After CFA, the Cronbach's Alpha internal consistency coefficient was found to be .91, and the Spearman-Brown and Guttman split-half coefficients were calculated as .85. On the other hand, the corrected item-total correlations ranged from .37 to .73. Based on these results, it can be concluded that the scale is reliable and has high discriminative power.

Discussion and Conclusion

An effective education process depends on the ability of teachers and students to manage their time efficiently. Time management is a critical skill that directly affects both teachers' professional performance and students' learning experiences. In this context, the time traps that teachers may encounter during the teaching and learning process can hinder both their own and their students' efficient use of time. Considering that education is a process and that the effectiveness of this process largely depends on effective time management, identifying and avoiding the time traps that teachers fall into is crucial for improving the quality of education and enabling both teachers and students to use their time more effectively. This study aims to develop a valid and reliable scale to identify the time traps that teachers fall into during the teachinglearning process from the perspective of teacher candidates who have taken the Teaching Practice I course. The Teaching Practice course is a key component of the preparation process for the teaching profession. These courses help teacher candidates gain classroom experience and transform their theoretical knowledge into practical applications. Developing a scale to identify the time traps that teachers knowingly or unknowingly fall into during practice is essential for raising awareness among teacher candidates, who will become the teachers of the future, about time traps.

In the study, data obtained from the first implementation were used, and EFA was applied to examine the construct validity of the scale. Subsequently, reliability and item analyses were conducted. As a result of the EFA, six items with low factor loadings were removed from the scale. It was determined that the remaining items had sufficient factor loadings, formed a unidimensional structure, and explained sufficient variance for a unidimensional scale. After the EFA, reliability and item analysis revealed that the scale was reliable and had high discriminative power. Using the data obtained from the second implementation based on the remaining items after the EFA, CFA was conducted, followed by reliability and item analyses. The CFA results indicated that the fit indices for the 21 items and the unidimensional structure were within the recommended limits. Post-CFA reliability and item analyses also demonstrated that the scale was reliable and had high discriminative power.

Based on the findings from the analyses conducted to examine the psychometric properties of the Time Traps in Teaching-Learning Process Scale, it was concluded that the scale provides valid and reliable measurements. In future studies, the validity and reliability of the scale can be tested on different groups. In this study, EFA and CFA were applied to the data to test the validity of the scale. To provide additional evidence for the validity of the scale, future research can include studies on criterion validity, cross-validation, convergent validity, and discriminant validity.

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Statement of Responsibility

All authors contributed to the study. The first author was involved in conceptualization, literature review, design, data collection, writing, review, editing and supervision. The second author contributed to literature review, design, data collection, methodology, analysis, writing, review, editing, and supervision.

Conflicts of Interest

The authors have no relevant financial or non-financial interests to disclose.

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References

- Alay, S., & Koçak, S. (2003). Üniversite öğrencilerinin zaman yönetimleri ile akademik başarıları arasındaki ilişki [The relationship between university students' time management and academic achievement]. *Kuram ve Uygulamada Eğitim Yönetimi* [Theory and Practice in Educational Administration], 35, 326-335.
- Aybek, E. C. (2024, June, 07). *Data preparation for factor analysis*. https://shiny.eptlab.com/dp2fa/
- Buldum, A. O. (2023). Kahramanmaraş İli Türkoğlu ilçesinde ilkokullarda görev yapan sınıf öğretmenlerinin zaman kullanımı ve zaman tuzakları [In Kahramanmaraş province Türkoglu district classroom teachers working in primary schools time usage and time traps]. *Türk Eğitim Araştırmaları Dergisi [Journal of Turkish Educational Research]*, 4(1), 01-11.
- Büyüköztürk, Ş. (2011). Sosyal bilimler için veri analizi el kitabı [Data analysis handbook for social science]. Pegem Academy Publishing.
- Costello, A. B., & Osborne, J. W. (2005). Best practices in exploratory factor analysis: Four recommendations for getting the most from your analysis. *Practical Assessment, Research & Evaluation, 10*(7), 1-9. https://doi.org/10.7275/jyj1-4868
- Çelik, Y. (2021). Öğretmenlerin zaman tuzaklarına düşmelerine ilişkin öğretmen adaylarının izlenimleri [Impressions of prospective teachers related to possible time traps for teachers]. *Trakya Eğitim Dergisi/Trakya Journal of Education*, 11(1), 464-481. https://doi.org/10.24315/tred.778701
- Çokluk, Ö., Şekercioğlu, G., & Büyüköztürk, Ş. (2012). Sosyal bilimler için çok değişkenli istatistik SPSS ve LISREL uygulamaları [Multivariate statistics for social sciences SPSS and LISREL applied]. Pegem Academy Publishing.
- Dunke, F., Heckmann, I., Nickel, S., & Saldanha-da-Gama, F. (2018). Time traps in supply chains: Is optimal still good enough?. *European Journal of Operational Research*, 264(3), 813-829. https://doi.org/10.1016/j.ejor.2016.07.016
- Eğilmez, B., & Uçar, K. (2023). Zaman yönetimi ve eğitim sistemi içerisinde önemi [Time management and its importance in the education system]. *International Journal of Social and Humanities Sciences Research*, 10(101), 2994-3003. https://doi.org/10.5281/zenodo.10253477

- Enterieva, M., & Sezgin, F. (2020). Öğretim zamanı tuzakları ölçeği ve öğretim zamanının etkililiği ölçeğinin geliştirilmesi: Geçerlik ve güvenirlik çalışması [The Development of the teaching time traps scale and the effectiveness of teaching time scale: A study of validity and reliability]. *TÜBAV Bilim Dergisi [TÜBAV Science Journal]*, 13(1), 95-110.
- Gezer, M., & İlhan, M. (2023). Revize edilmiş çevresel kimlik ölçeğinin Türkçeye uyarlanması: Öğretmen adayları üzerinde geçerlik ve güvenirlik çalışması [Adaptation of the revised environmental identity scale into Turkish: A validity and reliability study on teacher candidates]. *International Journal of Geography and Geography Education*, (49), 97-114. https://doi.org/10.32003/igge.1243408
- Güçlü, N. (2001). Zaman yönetimi [Time management]. Kuram ve Uygulamada Eğitim Yönetimi [Theory and Practice in Educational Administration], 25, 87-106.
- Güler, N., Teker, G. T., & İlhan, M. (2019). The Turkish adaptation of the statistics anxiety scale for graduate students. *Journal of Measurement and Evaluation in Education and Psychology*, 10(4), 435-450. https://doi.org/10.21031/epod.550765
- İğdeler, S. (2001). Yöneticiler ve zaman tuzakları/Managers and time traps. *Türk İdare Dergisi/Turkish Journal of Administration*, 432.
- Kline, R. B. (2011). *Principles and practice of structural equation modeling*. The Guilford Press.
- Kocabaş, İ., & Erdem, R. (2003). Yönetici adayı öğretmenlerin kişisel zaman yönetimi davranışları [Individual time management behaviors of the teachers who are candidate for school principal administration]. *Fırat Üniversitesi Sosyal Bilimler Dergisi/Fırat University Journal of Social Science*, *13*(2), 190-203.
- Mackenzie, A., & Nickerson, P. (2009). The time trap: The classic book on time management. Amacom.
- Seçer, İ. (2013). SPSS ve LISREL ile pratik veri analizi, analiz ve raporlaştırma [Practical data analysis, analysis, and reporting with SPSS and LISREL]. Anı Publishing.
- Seçer, İ. (2015). Psikolojik test geliştirme ve uyarlama süreci: SPSS ve LISREL uygulamaları/The process of developing and adapting psychological tests: SPSS and LISREL applications. Anı Publishing.
- Stevens, J. P. (2009). *Applied Multivariate statistics for the social sciences* (5th ed.). Routledge.
- Şimşek, Ö. F. (2007). Yapısal eşitlik modellemesine giriş (Temel ilkeler ve LİSREL uygulamaları) [Introduction to structural equation modeling (Basic principles and LISREL applications]. Ekinoks Publishing.
- Tabachnick, B. G., & Fidell, L. S. (2001). *Using multivariate statistics*. Boston: Allyn & Bacon.
- Taş, S. (2010). İlköğretim okullarında sınıfta zaman kaybettiren etkinlikler/Time consuming activities in primary schools. Süleyman Demirel Üniversitesi Sosyal Bilimler Enstitüsü Dergisi [Journal of Süleyman Demirel University Institute of Social Sciences], 2(12), 73-93.
- Tortumlu, M., & Uzun, K. (2023). 21. Yüzyılın zaman tuzaklarına yönelik bir ölçek geliştirme çalışması: Modern çağın zaman tuzakları ölçeği [A scale development

- study for the 21st century time traps: The scale for time traps of the modern age]. *Afyon Kocatepe Üniversitesi Sosyal Bilimler Dergisi/Afyon Kocatepe University Journal of Social Sciences*, 25(2), 552-569. https://doi.org/10.32709/akusosbil.1037465
- Türk Dil Kurumu Sözlükleri/Turkish Language Association Dictionaries (2024, June, 06). https://sozluk.gov.tr/
- Urbina, S. (2004). Essentials of psychological testing. John Wiley & Sons. Inc.
- Weston, R., & Gore, P. A. (2006). A brief guide to structural equation modeling. *The Counseling Psychologist*, 34(5), 719-751. https://doi.org/10.1177/0011000006286345
- Yenilmez, R. (2010). İlköğretim okulu öğretmenlerinin işteki zaman tuzakları ve baş etme yöntemleri [Primary school teachers' time traps at work and the strategies to cope with them] [Master thesis]. Ankara University, Ankara

APPENDIX: Time Traps Teachers Fall into During the Teaching-Learning Process Scale

	Items	Never	Rarely	Sometimes	Often	Always
1.	Talking about non-lesson topics (personal issues, life stories, current events, etc.) during the lesson					
2.	Leaving the classroom during the lesson to attend to personal matters					
3.	Spending too much time on routine tasks (filling out the class book, etc.) during the lesson					
4.	Experiencing discipline problems during the lesson					
5.	Spending too much time assessing students' readiness					
6.	Coming to class unprepared and teaching the lesson haphazardly					
7.	Attempting to relate the topic to previous topics/other lessons, causing the topic to drift					
8.	Coming to class unprepared and struggling to write questions/give examples; searching for ready-made questions/examples					
9.	Solving too many questions/giving too many examples/repeating too much on the same topic					
10.	Failing to obtain/check educational technologies, materials, etc. before the lesson					
11.	Giving inappropriate feedback/corrections that don't align with the lesson's purpose or student level					
12.	Using too much reinforcement during the lesson					
13.	Using concepts that are not appropriate for the student's level during the lesson					
14.	Getting caught up in unnecessary details of the topic/activities					
15.	Spending too much time on activities unrelated to the lesson					
16.	Continuing to explain a topic that students have already understood					
17.	Spending too much time summarizing the topic during the lesson					
18.	Not pre-determining assessment criteria for homework and trying to establish them while evaluating homework during the lesson					
19.	Spending too much time checking students' homework during the lesson					
20.	Having to repeatedly explain to students without giving written instructions for activities during the lesson					
21.	Preparing exam questions/answer keys during the lesson					

	Maddeler	Hiçbir zaman	Nadiren	Bazen	Çoğunlukla	Her zaman
1.	Derste ders dışı konulardan (kişisel sorunlar, hayat hikâyesi, güncel olaylar vb.) bahsetme					
2.	Ders sırasında özel işlerini yapmak için sınıftan ayrılma					
3.	Derste rutin işlere (sınıf defteri doldurma vb.) uzun zaman ayırma					
4.	Derste disiplin sorunu yaşama					
5.	Öğrencilerin hazır bulunuşluklarını tespit etmede gereğinden fazla zaman harcama					
6.	Derse hazırlıksız gelip dersi gelişi güzel anlatma					
7.	Derste işleyeceği konuyu daha önceki konularla/diğer derslerle ilişkilendirmeye çalışırken konunun dağılmasına yol açma					
8.	Derse hazırlıksız gelip soru yazmada/örnek vermede güçlük çekme/ hazır soru, örnek bulma arayışına girme					
9.	Aynı konuda gereğinden fazla soru çözme/örnek verme/tekrar etme					
10.	Derste kullanılması planlanan eğitim teknolojilerinin, araç-gereçlerin vb. dersten önce temin/kontrol edilmemesi					
11.	Dersin amacına, öğrenci seviyesine vb. uygun olmayan dönüt-düzeltme yapma					
12.	Derste gereğinden fazla pekiştireç kullanma					
13.	Derste öğrenci düzeyine uygun olmayan kavramlar kullanma					
14.	Konunun/etkinliklerin gereksiz ayrıntılarına takılma					
15.	Ders ile ilgili olmayan etkinliklere fazla zaman ayırma					
16.	Derste öğrencilerin anladığı konuyu anlatmaya devam etme					
17.	Derste konuyu özetlemek için gereğinden fazla zaman harcama					
18.	Ödevlerin değerlendirme ölçütlerini önceden belirlemeyip derste ödevleri değerlendirirken belirlemeye çalışma					
19.	Derste öğrencilerin ödevlerini kontrol ederken gereğinden fazla zaman harcama					
20.	Derste yapılacak etkinliklerde yazılı yönerge vermeden öğrencilere defalarca açıklama yapmak durumunda kalma					
21.	Derste sınav sorularını/cevap anahtarını hazırlama					



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