

The Scale of Online Learning Perception: The Covid-19 Effect on Shifting Higher Education to Distance Learning in Turkey¹

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Abstract

This study aimed to develop and validate a multidimensional scale for undergraduate students' perceptions toward online instruction. Unlike the previous scale development researches, the current study is remarkably situated under the exceptional condition of emergency online teaching and learning when distance learning was mandatorily put into practice in all Turkish universities. With this aim, an item pool was generated through literature review and students' composition about online learning in the midst of Covid-19 pandemic. The draft form with 44 items was sent to experts to get views. Based on experts' feedback, necessary adjustments were made, and construct and content validity were provided. Formed with 36 items, the first draft of the scale was administered to 213 volunteered undergraduate students in the pilot test stage, and the data were analyzed. Through exploratory factor analysis (EFA), a three-dimensional construct with 22 items was achieved. Chi-square fit test, CFI, NFI, GFI and RMSEA fit indices were investigated by confirmatory factor analysis. The values obtained from the fit indices were calculated as 5.026 for the chi-square fit test, 0.882 for the CFI, 0.857 for the NFI, 0.844 for the GFI, and 0.890 for the RMSEA. It can be said that the model obtained as a result of the fit indices has a good fit. The actual study was administered to randomly sampled 513 undergraduate students in various departments in a Turkish university at the end of the 2019-2020 academic year when they experienced mandatory online learning. At the end of the actual study, the scale was validated in three dimensions: perception toward online learning lesson content, perception on instructor in online learning, and perceptions on online learning practices. The relationship among subscales was inspected and a significant positive relationship was found. For ensuring reliability, the Cronbach's alpha value for the scale was inspected and found to be 0.915. By the analyses, it was seen that subscales were the dimensions of a construct named the Scale to Explore Student Perceptions towards Online Learning (SESPOL). Thus, the authors managed to develop a scale for conducting a survey to explore students' perceptions for digital learning in higher education institutions

Keywords: Online learning, Scale Development, Distance education, Covid-19



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INTRODUCTION

The COVID-19, which is a highly contagious sickness caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) has already reached at pandemic extent, creating a great disturbance all around the globe (Remuzzi & Remuzzi, 2020). The humankind has been experiencing this health crisis since it started to spread globally (Al Jazeera News, 2020). To lower the possibility of getting infected and the transmission of the virus, World Health Organization (WHO) advised world people to main at least 1-meter distance-even greater when indoors-between themselves and the others (2020). In accordance with this precaution, which is called physical distancing, governments have ordered citizens to stay away crowded public places and restricted movements. Moreover, many countries across the world have tightened restrictions on their populations due to rapid increase in spread. From curfews to lockdowns, they tried to tackle surge in cases (Anadolu Agency, 2020).

This kind of struggle could not only be assigned to health authorities, so an altogether endeavor in which wide variety of organizations assumed responsibility was engaged. Thereby, the hard work to hold or slow down the spread of the virus has affected almost all areas of society worldwide, together with universities switching to emergency distance education. As a consequence, higher education organizations in almost all countries have moved to deliver courses remotely via online teaching means soon after measures were taken in spring 2020 (Ali, 2020; Murphy, 2020). Regarding necessary precautions like social distancing, curfew, restrictions on travel and transportation, reducing mass mobility, and staying home orders have made both students and teachers stay at home, use digital technology tools for teaching and learning activities, thereby minimize the risk of viral spread with no or little social contact (Weeden & Cornwell, 2020).

On March 16, 2020, all universities in Turkey, likewise, suspended classes for one week and then shifted to online instruction in response to measures taken against COVID-19 spread. Therefore, higher education institutions could reduce the speed of the viral spread and protect students, personnel and faculty members in risk group by ensuring a safe and healthy educational environment (CDC, 2020; Council of Higher Education, 2020). Following this decision, university students stopped going to classes in-person, and lecturers started to lecture learners through online learning tools. However, most of the lecturers and students had no or little experience of online learning when this rapid transformation occurred.

Even before COVID-19 pandemic, there was already high interest and adoption in education technology at tertiary level, but the orientation to online learning with respect to distance education has been substantially fostered since April in 2020. Along with the closing of university campuses globally and substitution of all learning, teaching, and assessment practices into online means, many lecturers across the world had difficulties in mandatorily shifting their practices from in-person to distance (remote) learning where lessons were taught on online platforms (Crawford, et al., 2020). Furthermore, they started to question their online teaching capabilities, digital learning attitudes and perceptions of students and digital teaching attitudes and perceptions of teachers, the competencies of their digital course contents, and the efficacy of learning management systems they use in online learning at the heart of COVID-19 outbreak (Toprakçı ve Ersoy, 2008; Yavuz & Toprakçı, 2021; Toprakçı, Hepsogutlu & Toprakçı, 2021; Osman, 2020; Akour, et al., 2020; Hussein, Daoud, Alrabaiah, & Badawi, 2020; Mishra, Gupta, & Shree, 2020; Elsalem, et al., 2020; Aguilera-Hermida, 2020; Crawford, et al., 2020; Trust & Whalen, 2020; Watermeyer, Crick, Knight, & Goodall, 2020).

Online Learning in Higher Education

Distance education is known as a way of teaching and learning where the learner and teacher are physically parted (Kentnor, 2015; Bircan, Eleroğlu, Arslan & Ersoy, 2018). Advances and changes in information technology have affected distance education environment. A blend of technology, including mailing, audio, video, computer, and the network like the Internet has been utilized (Major,

2015, Ersoy & İzci, 2017;). Online learning, also called as electronic learning (e-learning), stating to learning via the Internet, has become a key phenomenon lately. In fact, it is no longer a tendency; rather, it is mainstream. For a decade, schools have been spending considerable amounts of time, money, and efforts in developing online alternatives to traditional forms of education and training systems. However, it is obvious that online learning cannot be the equivalent of in-person or face-to-face learning, which is defined as any practice of educational interaction that happens “in person” and in real time between instructors and learners (Great Schools Partnership, 2020), and either one has its own advantages and disadvantages (Adams, 2020; Arias, Swinton & Anderson, 2018; Ersoy, 2016; Stern, 2004).

Despite the inadequate capabilities and accessible resources to them, educational programmers of higher education need to upgrade the levels of efficiency, effectiveness, and quality of online teaching in higher education institutions, which is not limited to traditional way of teaching in classrooms. Similarly, students must raise their self-efficacy towards digital learning environments. To shed a light on this phenomenon, in-depth and continuous analyses have been urgently required to understand or to determine the essential features, dimensions and challenges of online learning in higher education. Student performance in learning have been proved to be improved with positive perceptions of learners; also, it has been confirmed that negative perceptions reduce learners’ motivation and therefore hinder successful learning. Thus, online learning developers and deliverers need to be aware of their students’ perceptions towards the learning via digital means. If the students do not have positive perceptions, they need to look for useful methods and techniques along with necessary improvements to create a desirable e-learning environment and to help them gain optimistic perceptions.

Students’ perception is important because online learning has relocated the point of control for instruction from the instructor to the learner (Dziuban, Moskal, Kramer, & Thompson, 2013). Therefore, it is important to learn about student perceptions to reach a better performance in online learning. Before implementing any online learning environment, identifying and investigating students’ perceptions and their dimensions can provide better planning, so students will easily adopt online learning activities in a way that best suits them.

The Need of Scale Development in Online Learning

The aim of scale construction is to design a questionnaire which offers a quantitative measurement of an abstract theoretic variable, and it is a process in which a reliable and valid tool is developed in order to explore or assess a quality of interest (Tay & Jebb, 2017). Different researches requires different measurement approaches to avoid the risk of yielding inaccurate data. Developing their own scale is the only remaining alternative (DeVellis, 2017, p. 19). Researches on social sciences mostly require the measurement of psychological constructs, and they present unique challenges since they do not have observable features (e.g. attitudes, perceptions, views). Unlike observable features (e.g. weight, height, temperature), it is impossible to directly measure unobservable traits, so they are assessed through indirect means. At this point, a specifically designed measurement tool can help the researchers figure out the underlying factors of a certain situation. To have a firm grasp of how to reach practical and fruitful online learning, identifying which dimensions of online learning perceptions college students have is essential. Along with developing technology, new generation is expected to have more different attitudes, readiness, perceptions, and proficiency toward online learning than the earlier students who took their classes via digital means; thus, researchers need to use up-to-date scales to measure those features in the best way. From this perspective, scale development process should be an on-going process for the studies dealing with online learning.

The Aim of the Study

Because online learning has been progressing and become highly widespread in higher education institutions, throughout this practice, there has been a necessity for faculties and students to inspect current circumstances and to re-develop a more effective content, methods, software, and tools regarding educational needs, and this requirement will most probably continue to exist. By using a well-validated and well-developed scale, online learning managers and practitioners will be able to better analyze their activities, and faculties can plan improved online classes and lead their students to be more successful and productive online learning involvement. Finding out which dimensions of online learning perceptions learners have leads researchers to understand better how to improve online learning practices.

It is true that the COVID-19 pandemic has altered educational activities forever. Even though much greater and rapid steps have been taken in online learning in a short time, it still remains at an initial phase of its progress. Subsequently, designers and instructors of online learning need more grasp of how students perceive and act in response to the components of online learning because learner perception has a pivotal role in motivation and learning, along with how to apply it most efficiently to add to learning. This study focused on developing a practical Likert type scale to explore the higher education students' perceptions toward online learning under the circumstances of COVID-19 pandemic. For this purpose, this study will search for the answers for the following overarching research questions:

1. Is The Scale to Explore Student Perceptions toward Online Learning (SESPOL), which is developed, valid and reliable?
2. What are the dimensions of students' perceptions to online learning?

As indicators of student perceptions on online learning, this study specifically focused on the accessibility of technological tools, efficiency of the course content, lecturing practices, and socio-emotional perceptions with respect to social distancing measure. Earlier studies (before pandemic) in the context of online learning mostly analyzed these variables under normal circumstances, and in those studies, digital learning environment is generally offered as an optional alternative to traditional teaching (Ersoy, 2020; Pillay, Irving, & Tones, 2007; Cigdem & Yildirim, 2014; Hung, Chou, Chen, & Own, 2010). However, in this study a scale to explore students' perceptions toward online learning was tried to be developed under extra-ordinary circumstances since the COVID-19 pandemic was a highly arduous incident which interrupted the usual learning experience in midst of spring term 2020. Additionally, online learning, rather than being an alternative, was mandatorily put into practice (Bozkurt & Sharma, 2020). Therefore, the current research is remarkably situated under the extraordinary condition of emergency remote learning through online classes. That is, from a general viewpoint, both students and lecturers were neither decided nor ready for a distance learning via online means. This allows the exploration of students' perceptions in a manner as straightly as possible and free from bias. This rapid shift to distance learning also provides wide variety of respondents from different branches so that a more comprehensive and valid scale could be developed.

METHOD

Based on the aim of this research, a scale was developed and validated to be used so as to explore undergraduate students' perceptions toward online learning. In the process of developing SESPOL, a number of steps, which are identified as essentials of scale development, were taken.

Step 1. Generating the Item Pool

DeVellis (2017, p. 106) warns that the features of a scale were determined by the items that make it up, and as long as they were the strong reflection of the concept, then the scale would precisely capture the essence of the construct. With this context, the features of the construct were tried to be revealed in the first step. The literature about the issue was reviewed, along with goal-setting and problem diagnosis. To reach the intended sense and scope of the theoretic concepts, researchers need to conduct a kind of qualitative research to generate dimensions and items of the construct before creating an item pool (Carpenter, 2018). Therefore, 30 students studying in various fields were also asked to express their feelings, opinions, and attitudes on online learning by writing a composition. After reviewing the literature and students' compositions on online learning, 44 perception items were written in the first draft of the scale.

Step 2. Refinement of the Items

When factor analysis is carried before the refinement, there can be a likelihood of yielding considerably more dimensions than can be theoretically identified to some extent caused by "the garbage items," and they do not have the common core but generate extra dimensions in the factor analysis (Churchill, 1979). In the second step, experts, therefore, examined the language of the items written about the perceptions of online learning. Concerning the content and validity appearance of the items, 5 university lecturers who work in the department of Turkish Language Teaching and 2 in the Educational Technologies were consulted. Necessary changes and adjustments were made in accordance with the feedback of the experts, which plays a great deal in generating the items and identifying the dimensions. Additionally, Carpenter (2018) urges that participants would commonly reveal further dimensions that attach decisive importance to the meaning of the construct, so the developers of this scale probed 15 undergraduate students studying in various departments for potential scale items together with the wording of them reflecting each of the dimensions too. Accordingly, the first trial version of the Scale to Explore Student Perception on Online Learning was refined to 36 items. At the same time, 5 different dimensions of perceptions to online learning are expected to be in the final draft of the scale. Determining the names of the construct and each dimension has an effect on later interpretations of the concept (Carpenter, 2018). Table 1 shows the expected dimensions of the SESPOL before factor analysis.

Table 1: Expected Dimensions of the first draft of the SESPOL

Expected Dimensions of SESPOL
Perception to Online Learning Practices
Perception to Instructor in Online Learning
Perception to Learning Management System in Online Learning
Perception to Online Lesson Content
Perception to Assessment and Evaluation in Online Learning

Step 3. Pilot Test

Thirdly, a pilot test was conducted to ensure that the instrument can be used properly and the responses are consistent. In this step, which is the preliminary assessment of the metrological quality of the SESPOL, the reliability of the 36 items, which consist the trial version of the instrument, were tested. An online survey was conducted to test the instrument SESPOL. All 36 items of questionnaire are measured on Likert's five-point scale ranging from "strongly agree," "agree," "undecided," "disagree," "strongly disagree," and each of the five responses are given a numerical value from 5 to 1, which would be used to measure the perception under investigation. With the expectation of more participants result in more stable scales, the magnitude of sampling size was determined according to the recommendations by the methodologists who claim that 200 participants is a fair number for a pilot test (Comrey & Lee, 1992; Barret & Kline, 1981). Therefore, 213 volunteer students, who would

not participate in the actual study, were asked to respond the questionnaire. After that, an exploratory factor analysis with varimax was used to purify the instrument by using SPSS V.21 software on a sample 213 undergraduate students who mandatorily experienced online learning during Covid-19 measures.

One of the goals of a pilot test, which is a dummy run of the actual survey in authentic field circumstances, is to detect unanticipated problems, such as vague fitness of criteria or confusions of questionnaire items. As it is indispensable to make sure that findings are accurate and can replicate, researchers checked the missing data and cleaned them.

After ensuring that the dataset is free from missing data, researchers aimed to verify the factorability of the dataset, so they respectively inspected the correlation matrix, used Bartlett's test of sphericity and KMO (Kaiser-Meyer-Olkin) since these provide evidence as to whether the data is appropriate to carry out factor analysis or not (Büyüköztürk, 2002).

Inspecting the correlation matrix makes it possible to gain an initial overview of the correlations of the variables. According to Cohen (1988), the effect of a correlation as of 0.500 can be considered as high.

Bartlett's test of sphericity is used to check whether a matrix of correlations is significantly different from an identity matrix. This test offers likelihood that the correlation matrix has significant correlations among at least some of the variables in a dataset, a criterion for factor analysis to work. Specifically, before starting with factor analysis, researchers need to make sure that the Bartlett's test of sphericity is significant. The significance value should be lower than 0.05.

KMO is used to measure whether the sampling size is adequate or not. For a satisfactory factor analysis, the result of KMO value should be greater than 0.6, and when it gets closer to 1, the appropriateness increases. According to the results from KMO, variances with the value lower than 0.5 should be eliminated from the instrument.

As a result of the analysis of the pilot test carried out with the trial version of the scale, the following results were obtained:

- Bartlett's test was measured to be $\chi^2=4934,019$; $p=0.000$
- Anti-image r values were founded to be 0.70-0.89.
- KMO value was found to be 0,76
- Its Cronbach Alpha internal coherence coefficient was founded as 0,910.

These results proved that the trial form of the scale was applicable for factor analysis. Through exploratory factor analysis, 8 items which have 0,50 and lower anti-image value and 6 items which fit into more than one factors and create confusion were eliminated from the instrument. We further carried out the Principal Component Analysis using SPSS version after deleting all those 14 items, and then its results revealed that all items loaded impeccably well in the same factors.

The final solution of the pilot test determined a construct of three factors comprising 22 items with own values greater than 1 and that explain 65,852% of the total variance. This ratio is acceptable as it is above the thresholds suggested by Büyüköztürk (2009).

Step 4. Actual Study

At the end of the pilot test, which ensured the validity and reliability of the scale, researchers proceeded to the actual study carried out with the final draft of the scale.

Participants: The Scale to Explore Students' Online Learning Perception, arranged as an online questionnaire, was responded voluntarily by a total of 610 students. The students were requested to participate in online survey because they were not present in campus at the time of study due to the restrictions against COVID-19 pandemic. However, it was decided to remove the responses from 97

students, who had partly or incorrectly responded the questionnaire and were determined by the various statistical analyses, from the dataset. Therefore, the remaining 513 students made up the actual study group.

The 513 participants of this research are undergraduate students studying in various departments of one state university in Turkey at the end of 2020-2021 academic year when the measures against Covid-19 pandemic forced universities to use online learning. In this study, random sampling method is used. Random sampling method, in which each sample has an equal probability of being chosen, can be used if a study intends to generalize its findings numerically to the entire population (Neuman, 2014, p. 254-255). Table 2 shows the faculties and the numbers of the respondents.

Table 2: Categorization of the Participants according to Their Faculties

Faculties	Number of Respondents for the study
Faculty of Educational Sciences	125
Faculty of Letters	92
Faculty of Science	61
Faculty of Health Sciences	53
Faculty of Sport Sciences	18
Faculty of Economics and Administrative Sciences	82
Engineering Faculty	66
Faculty of Architecture, Design and Fine Arts	16
Total Number	513

Data Analysis and the Results of the Actual Study: The reliability of the data was checked by calculating Cronbach- α value which was found 0.905 as shown in Table 3. The calculated value was in the satisfactory range (> 0.7) (Nunnally, 1978).

Table 3: Reliability Test Results

Reliability Statistics	
Cronbach's Alpha	N of Items
0,915	22

In addition to this, Kaiser Mayer Olkin statistics was calculated for testing the sampling adequacy; the calculated values were 0.919 (>0.5). Besides, the result of Barlett's test of sphericity was found as significant ($p<0.05$). Table 4 demonstrates the KMO and Bartlett's Test results, which were found appropriate to carry out exploratory factor analysis.

Table 4: KMO and Bartlett's Test Results

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0,919
	Approx. Chi-Square	7061,225
Bartlett's Test of Sphericity	df	231
	Sig.	0,000

Later, exploratory factor analysis was carried out. Explanatory Factor Analysis (EFA) with varimax rotation—as this is an orthogonal rotation technique which maximizes the variances of loadings on the new axes—was carried out for the construct validity of the scale (Wipulanusat, Panuwatwanich, & Stewart, 2017). EFA is apt to produce a new scale by discarding items that are not related with other ones or do not load on any factor (Büyüköztürk, 2009). In EFA, researchers are concerned only with the variance that each of variables has in common with the others, not with the unique variance. This procedure reveals patterns among variables and then clusters vastly interconnected items into factors (Hooper, 2012). As a result of the factor analysis, it was seen that the factor loadings of all items were higher than 0.5, which was described as being a fair number to include an item in the instrument (Büyüköztürk, 2009). EFA showed that the scale has three-

dimensional structure and consists of 22 items that could be used to explore students' perceptions based on the factor loadings and the scree plot. The factor loadings and the total variance described by the scale are demonstrated below in Table 5.

Table 5: EFA Results

Rotated Component Matrix		Component		
		1	2	3
1. Perception toward online learning lesson content				
Item 4. It is easy to reach online lesson content.		0,849		
Item 5. Online lesson content can form a basis for assessment and evaluation.		0,822		
Item 2. Online lesson content is adequately interactive.		0,797		
Item 3. Online lesson content is satisfactory to help me learn.		0,763		
Item 6. Online lesson content is adequately enriched (graphics, tables, animations, videos, etc.		0,705		
Item 8. Online lesson content attracts the attention of the learners.		0,676		
Item 1. Online lesson content is presented as scheduled.		0,578		
2. Perception on instructor in online learning				
Item 13. Instructors effectively make use of the technical hardware in online learning.			0,835	
Item 14. Instructors are proficient in terms of providing feedback via online means.			0,834	
Item 12. Instructors can solve the problems they come up in online learning.			0,830	
Item 11. Instructors have adequate technical hardware for online learning activities.			0,770	
Item 32. Instructors do not care online courses.			0,749	
Item 16. Instructors teach their students interactively via online means.			0,726	
Item 15. It is easy to contact with instructors via online means.			0,690	
Item 9. Instructors just read out the lesson content in online learning.			0,495	
3. Perceptions on online learning practices				
Item 38. Online learning is more effective than in-person learning.				0,800
Item 41. Courses in online learning are more boring than the ones in in-person learning.				0,747
Item 40. Courses in online learning attract me more.				0,742
Item 39. Online learning should be included more in the future.				0,626
Item 37. Online learning is an appropriate alternative for my educational needs.				0,625
Item 42. I do not think it is important to attend the courses running in online learning.				0,616
Item 43. Taking exams in digital environments causes anxiety for me.				0,566

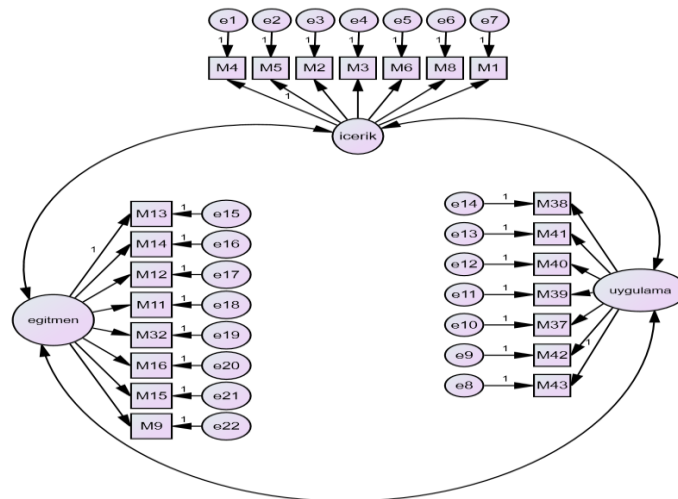


Figure 1: Condition of Confirmatory Factor Analysis Model Before Modifications

The confirmatory factor analysis model of the research is given in the figure above.

As Yılmaz (2019) quotes from Schermelleh-Engel (2003:33), the Chi-Square/df value increases as the number of samples increases. In the study, the χ^2/df value is very close to the expected value of 5 and is within acceptable limits. In addition, other fit indices developed were also examined. According to the results of the analyzes before the modifications, the fit indices are given in the table below.

Table 6: Adaptation Indices Before Modifications

p	χ^2/df	CFI	NFI	GFI	RMSEA
0,000	5,244	0,874	0,849	0,825	0,091

In the literature, it is desirable that the CFI, NFI and GFI are around 0.90 and the RMSEA value is around 0.08. Again, when looking at the table, it was seen that the compliance indices before the modifications were close to the desired values. Despite this, "can further improvements be made?" or among the questions "is there an expression that should be decoupled from covariance because of a similar expression?" looking at the 9. Article 32. It dec thought that there may be a similarity in context between the items. For this reason, a covariance bond was decoupled between the two substances and modification was performed. The Confirmatory Factor Analysis Model with post-covariance bond modification is as follows.

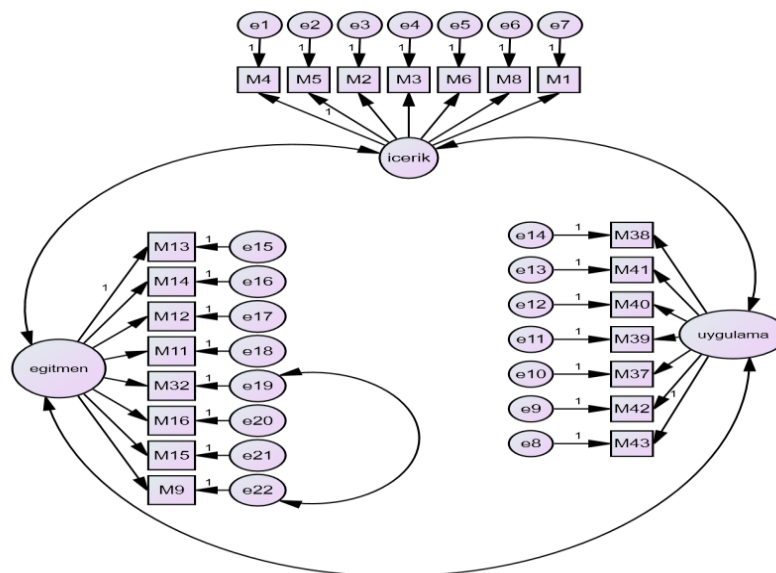


Figure 2: The State of the Confirmatory Factor Analysis Model After the First Modification

The analyses were repeated after modification. The χ^2/df value improved from 5,244 to 5,180. The CFI value improved from 0.874 to 0.877. The NFI value improved from 0.849 to 0.852. The GFI value improved from 0.825 to 0.831. The RMSEA value improved from 0.91 to 0.90. The corresponding table is as follows;

Table 7: Compliance Indices After the First Modification

p	χ^2/df	CFI	NFI	GFI	RMSEA
0,000	5,180	0,877	0,852	0,831	0,090

Since there was an improvement in the values, the items were looked at again, and the analysis was continued with the idea that there might be a similarity between Article 42 and Article 43 from the students' point of view as a context. dec.

In October, the covariance bond was decoupled between the two substances in question in addition to the above modifications. The Model of Confirmatory Factor Analysis after modification is as follows.

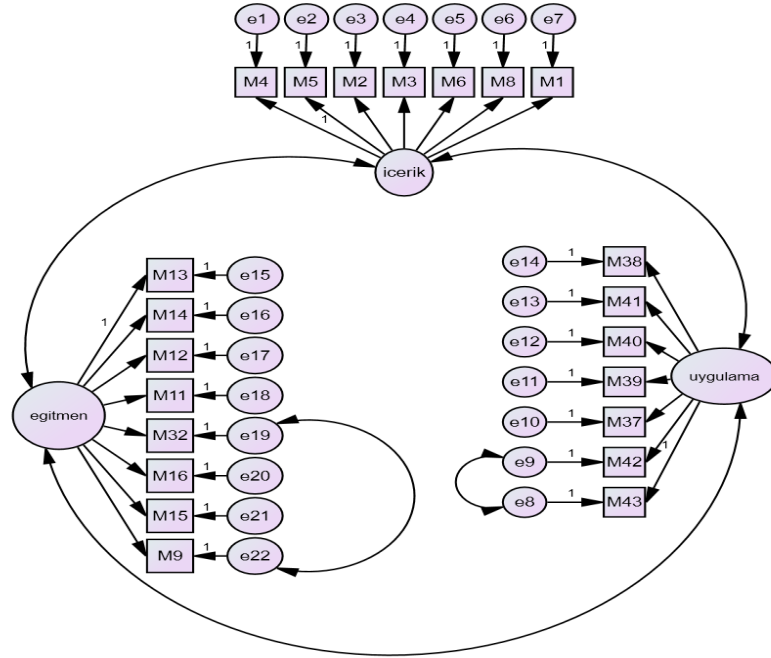


Figure 2: The State of the Confirmatory Factor Analysis Model After the Second Modification

The analyses were repeated after the second modification. The χ^2/df value improved from 5,180 to 5,026. It is even closer to the desired value of 5. The CFI value improved from 0.877 to 0.882. The NFI value improved from 0.852 to 0.857. The GFI value improved from 0.831 to 0.844. The RMSEA value improved from 0.90 to 0.89. The corresponding table is as follows;

Table 8: Rapport the fit indexes values

p	χ^2/df	CFI	NFI	GFI	RMSEA
0,000	5,026	0,882	0,857	0,844	0,890

The analyses were terminated here due to the fact that the values approached the desired level, the substance to be discarded could not be determined, and the values compatible with the Explanatory Factor Analysis results were reached.

CONCLUSION, DISCUSSION, AND SUGGESTIONS

The COVID-19 pandemic has been encouraging many higher education institutions across the world to substitute online learning in place of traditional in-person instruction, with the intention of limiting the viral spread. Since the beginning of the spread, the understanding of online learning has been greatly increasing day by day, and owing to the risk of COVID-19 pandemic higher education institutions across the globe are engaged in online learning under obligation. Enabling to explore students' perceptions toward online learning provides practitioners an insight to understand students' online learning experiences. Therefore, this research study was conducted to develop a multi-dimensional tool to explore students' perception on online learning, and it concluded a valid and

reliable scale, SESPOL, based on three factors from the perception of students towards online learning. From students' point of view, the main factors are perception toward online lesson content, perception on instructor in online learning, and perceptions on online learning practices.

The development of the SESPOL will allow instructors to reassess their educational policy and instructional planning for online students. It is likely that this scale can serve online course instructors in assessing students' perceptions regarding online courses and designing better quality courses to improve students' online learning performances.

The SESPOL provides a framework to determine university students' perception toward online learning. Future studies should establish evidence to whether this instrument is capable of determining students' perception successfully. In addition, they can also test if there is a relation between the success of the delivered online learning and the students' perceptions. More specifically, future studies should be carried out on revealing the relation between academic performance and students' perception toward online learning by regarding different variables: gender, grade, field, access to digital technology, etc. Researchers may also undertake studies on the correlation between SESPOL and other similar scales for a more coexisting validity. In order to provide students with a more feasible online learning environment, future studies can develop different scales, in addition to SESPOL, to explore or assess their readiness, self-efficacy, motivation, digital competencies, and attitudes regarding online learning experiences.

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Çevrimiçi Öğrenme Algı Ölçeği: Türkiye'de Yükseköğretimin Uzaktan Eğitime Geçişinde Covid-19 Etkisi ²

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Özet

Bu çalışmanın amacı, lisans öğrencilerinin çevrimiçi eğitime yönelik algıları için çok boyutlu bir araç geliştirmek ve bu aracın geçerliliğini sağlamaktır. Daha önceki ölçek geliştirme çalışmalarının aksine bu araştırma, uzaktan eğitimin tüm Türk üniversitelerinde zorunlu olarak uygulamaya konulduğu olağanüstü acil durum çevrimiçi öğretim ve öğrenim koşulları altında dikkate değer bir şekilde konumlanmıştır. Bu amaçla, literatür taraması ve öğrencilerin Covid-19 salgını ortasında çevrimiçi öğrenmeyle ilgili kompozisyonları aracılığıyla bir madde havuzu oluşturuldu. 44 maddelik taslak form görüşleri alınmak üzere uzmanlara gönderildi. Uzman görüşlerinden gelen dönütler baz alınarak gerekli düzenlemeler yapılarak yapı ve içerik geçerlilikleri sağlandı. 36 madde ile şekillendirilen ölçeğin ilk taslağı pilot test aşamasında 213 gönüllü lisans öğrencisine uygulanmış ve veriler analiz edilmiştir. Açımlayıcı faktör analizi (AFA) yoluyla 22 maddelik üç boyutlu bir yapı elde edildi. Asıl çalışma, zorunlu çevrimiçi öğrenme deneyimini yaşadıkları 2019-2020 akademik yılının sonunda bir Türk üniversitesinde çeşitli bölümlerde okuyan rastgele örneklem yoluyla belirlenen 513 lisans öğrencisine uygulandı. Asıl çalışmanın sonunda ölçek üç boyutta doğrulanmıştır: çevrimiçi öğrenme ders içeriğine yönelik algı, çevrimiçi öğrenmede eğitmen algısı ve çevrimiçi öğrenme uygulamaları hakkındaki algılar. Boyutlar arasındaki ilişki incelenmiş ve anlamlı pozitif bir ilişki bulunmuştur. Güvenilirliği sağlamak için ölçeğin Cronbach alfa değeri incelenmiş ve 0,915 bulunmuştur. Yapılan analizlerde ulaşılan boyutların Öğrencilerin Çevrimiçi Öğrenme Algılarını Keşfetme Ölçeği adı verilen bir yapının boyutları olduğu görülmüştür. Doğrulayıcı faktör analizi de yapılarak ki-kare uyum testi, CFI, NFI, GFI ve RMSEA uyum indeksleri araştırılmıştır. Uyum indekslerinden elde edilen değerler ki-kare uyum testi için 5,026, CFI için 0,882, NFI için 0,857, GFI için 0,844, RMSEA için 0,890 olarak hesaplanmıştır. Uyum indeksleri sonucunda elde edilen modelin iyi bir uyuma sahip olduğu söylenebilir. Böylelikle araştırmacılar, COVID-19 salgını sırasında zorunlu uzaktan öğrenimi deneyimledikten hemen sonra öğrencilerin yükseköğretim kurumlarında dijital öğrenmeye yönelik algılarını keşfetmeye yönelik bir ölçek geliştirmeyi başardılar.

Anahtar Kelimeler: Çevrimiçi öğrenme, ölçek geliştirme, Uzaktan öğretim Covid-19.

Önerilen Atıf

Özutku, R. & Başboğaoğlu, U. (2022). Çevrimiçi Öğrenme Algı Ölçeği: Türkiye'de yükseköğretimin uzaktan eğitime geçişinde Covid-19 etkisi. *E-Uluslararası Pedandragoji Dergisi (e-upad)*, 2(1), 17-32. DOI: <https://trdoi.org/10.27579808/e-ijpa.57>



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Genişletilmiş Özet

Problem: Pandemi oranına ulaştıktan sonra Covid-19 hastalığı tüm dünyada birçok sektörü etkilemeye başladı ve büyük bir çalkantı yarattı. Hemen hemen tüm ülkeler vatandaşlarının hayatlarını kurtarmak için birçok alanda önlem almaya başladı. Bu noktada pandemi, üniversitelerin geleneksel yöntemlerle öğretme ve öğrenme uygulamalarını, Türk üniversiteleri de dâhil olmak üzere dijital platformlara kaydirmalarını beraberinde getirmiştir (Kentnor, 2015; Bircan, Eleroğlu, Arslan & Ersoy, 2018; Major, 2015, Ersoy & İzci, 2017; Adams, 2020; Arias, Swinton & Anderson, 2018; Ersoy, 2016; Stern, 2004).

Pandemiden önce de, yükseköğretim düzeyinde çevrimiçi öğrenmeye önemli bir ilgi ve benimsenme vardı, ancak uzaktan eğitimle ilgili olarak çevrimiçi öğrenmeye yönelim 2020 yılının Nisan ayından itibaren artış göstermiştir. Bu arada birçok öğretim elemanı, çevrimiçi öğretim yeterliliklerini, öğrencilerin dijital öğrenmeye yönelik tutum ve algılarını ve öğreticilerin dijital öğretim tutum ve algılarını, dijital ders içeriklerinin yeterliliklerini ve çevrimiçi ortamda kullandıkları öğrenme yönetim sistemlerinin etkililiğini sorgulamaya başladılar.

Çevrimiçi öğrenme, öğretim için kontrol noktasını öğreticiden öğrenene kaydırıldığından, öğrencilerin algısı önemlidir. Algı bir tür psikolojik yapıdır ve doğrudan ölçülemez. Bu nedenle, belirli durumlara ilişkin algıları ölçmek, özel olarak tasarlanmış bir araç gerektirir. Gelişen teknoloji ile birlikte, yeni neslin, dijital yollarla ders alan eski öğrencilere göre çevrimiçi öğrenmeye karşı daha farklı tutum, hazırbulunuşluk, algı ve yeterliliklere sahip olması beklenmektedir. Bu nedenle araştırmacıların bu özellikleri en iyi şekilde ölçmek için güncel ölçekleri kullanmaları gerekmektedir. Bu açıdan çevrimiçi öğrenme ile ilgili çalışmalarda ölçek geliştirme süreci devam eden bir süreç olmalıdır.

Yükseköğretim düzeyinde çevrimiçi öğrenmenin ilerlemesi ve yaygınlaşmasıyla birlikte, fakültelerin mevcut koşulları denetlemesi ve çevrimiçi öğrenmenin unsurlarını iyileştirmesi ihtiyacı doğmuştur. Geçerliliği iyi sağlanmış ve geliştirilmiş bir ölçek, çevrimiçi öğrenme yöneticilerine ve uygulayıcılarına yardımcı olur, böylece etkinliklerini daha iyi analiz edebilir ve çevrimiçi dersleri iyileştirebilirler. Bu amaç doğrultusunda, bu çalışmada tüm Türk üniversitelerinde uzaktan eğitimin zorunlu olarak uygulamaya konulduğu olağanüstü çevrimiçi öğretim ve öğrenme koşullarında lisans öğrencilerinin çevrimiçi öğrenmeye yönelik algıları için çok boyutlu bir ölçek geliştirmek ve ölçeğin geçerliliğini sağlamak amaçlanmıştır.

Yöntem: Araştırmada, lisans öğrencilerinin çevrimiçi öğrenmeye yönelik algılarını keşfetmek amacıyla kullanılmak üzere bir ölçek geliştirilmiş ve geçerliliği sağlanmıştır. Bu ölçeğin geliştirilme sürecinde ölçek geliştirmenin olmazsa olmazları olarak tanımlanan bir takım adımlar atılmıştır (DeVellis, 2017; Churchill, 1979; Carpenter, 2018). İlk adımda, literatür taraması ve öğrencilerin Covid-19 pandemisi esnasındaki çevrimiçi öğrenme durumları hakkında kompozisyon yazmaları yoluyla bir madde havuzu oluşturulmuştur. İkinci olarak 44 maddelik taslak form görüşleri alınmak üzere uzmanlara gönderilmiştir. Uzman görüşleri doğrultusunda farklı şekilde ifade edilmesine rağmen aynı anlama gelen maddeler birleştirilmiş veya birisi ölçekten çıkartılarak yapı ve içerik geçerliliğine katkı sağlanmıştır. Üçüncü aşamada 36 maddeden oluşan ölçeğin ilk taslağı pilot uygulama aşamasında gönüllü 213 lisans öğrencisine uygulanmış ve veriler analiz edilmiştir. Açıklayıcı faktör analizi (AFA) ile 22 maddelik üç boyutlu bir yapı elde edilmiştir. Son olarak, asıl çalışma, zorunlu çevrimiçi öğrenmeyi deneyimledikleri 2019-2020 akademik yılının sonunda bir Türk üniversitesinin çeşitli bölümlerinde öğrenim gören rastgele örneklemli 513 lisans öğrencisine uygulanmıştır. Alt boyutlar arasındaki ilişki incelenmiş ve boyutlar arasında anlamlı bir pozitif ilişki bulunmuştur. Güvenirliği sağlamak için ölçeğin Cronbach alfa değeri incelenmiş ve 0,915 olarak bulunmuştur. Analizler

neticesinde, alt boyutların Çevrimiçi Öğrenmeye Yönelik Öğrenci Algılarını Keşfetme Ölçeği adlı bir yapının boyutları olduğu görülmüştür. Doğrulayıcı faktör analizi de yapılarak ki-kare uyum testi, CFI, NFI, GFI ve RMSEA uyum indeksleri araştırılmıştır. Uyum indekslerinden elde edilen değerler ki-kare uyum testi için 5,026, CFI için 0.882, NFI için 0,857, GFI için 0.844, RMSEA için 0.890 olarak hesaplanmıştır. Uyum indeksleri sonucunda elde edilen modelin iyi bir uyuma sahip olduğu söylenebilir.

Sonuçlar: Bu araştırma, öğrencilerin çevrimiçi öğrenmeye ilişkin algılarını keşfetmek için çok boyutlu bir araç geliştirmek amacıyla yürütülmüştür ve öğrencilerin çevrimiçi öğrenmeye yönelik algılarını esas alan üç faktöre dayalı 22 maddelik geçerli ve güvenilir bir ölçek olduğu sonucuna varılmıştır. Bu ölçekten en az 22 puan, en çok 110 puan alınabilir. Öğrencilerin bakış açısına göre ana faktörler; çevrimiçi ders içeriğine yönelik algı, çevrimiçi öğrenmede eğitmen algısı ve çevrimiçi öğrenme uygulamalarına ilişkin algılardır. Bu sonuç, öğreticilerin çevrimiçi araçlar yoluyla öğrenenler için eğitim politikalarını ve öğretim planlamalarını yeniden değerlendirmelerine olanak tanıyacaktır. Bu ölçek aynı zamanda öğrencilerin çevrimiçi öğrenmeye ilişkin algılarını değerlendirmede ve dijital öğrenme ortamında öğrenci performansını artırmak için daha kaliteli dersler tasarlamada çevrimiçi ders öğreticilerine hizmet edebilir.

Öneriler: Çevrimiçi Öğrenmeye Yönelik Öğrenci Algılarını Keşfetme Ölçeği, üniversite öğrencilerinin çevrimiçi öğrenmeye yönelik algılarını belirlemek için bir çerçeve olarak düşünülebilir. Bu nedenle gelecekteki çalışmalar, bu ölçeği kullanarak ölçeğin öğrencilerin algısını başarılı bir şekilde belirleme yeteneğine sahip olup olmadığına dair kanıt oluşturabilirler.