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# Evaluation of Distance Learning from Student Perspective in Covid-19 Pandemic

*Cem GÜRLER* (*)
*Tuğçe USLU* (**)
*İkram DAŞTAN* (***)

***Abstract:*** *The Coronavirus emerged in Wuhan/China turned into a pandemic in a short time by affecting the whole world. The education system at universities is quickly interrupted along with the appearance of the first case in Turkey on 11 March 2020. Then, universities have switched to distance learning with the provision of necessary infrastructure services. This study aims to evaluate the distance learning system from the perspective of students. In this context, a survey study is applied to 2371 students studying at different faculties and vocational school of higher education at a state university. It is analyzed in detail whether there is a relationship between the variables of gender, grade point averages, department and semester, and students' satisfaction level from the distance education system. Chi-square test, t test and ANOVA test are used for the analysis of data. When the results are examined, it is seen that vocational school of higher education students find the distance education system more successful than the faculty students. However, it can be said that faculty students and students with high grade point averages follow online courses more regularly.*

***Keywords:*** *Coronavirus (Covid-19), pandemic, distance education, student satisfaction*

# Covid-19 Pandemisi Sürecinde Uzaktan Eğitim Sürecinin Öğrenci Perspektifinden Değerlendirilmesi

***Öz:*** *Çin'in Vuhan kentinde baş gösteren koronavirüs kısa bir süre içerisinde tüm dünyayı etkisi altına alarak bir pandemiye dönüşmüştür. 11 Mart 2020 tarihinde Türkiye'de ilk vakanın görülmesiyle hızlı bir şekilde üniversitelerde eğitime ara verilmiştir. Ardından, gerekli altyapının sağlanması ile birçok üniversite uzaktan eğitim sürecine geçiş yapmıştır. Bu çalışma, koronavirüs pandemisi sürecinde öğrencilerin uzaktan eğitim sisteminden memnuniyet düzeyleri değerlendirilerek uzaktan eğitim sürecini öğrenci bakış açısı ile gözler önüne sermeyi ve uzaktan eğitim sürecinde ileride yaşanabilecek problemlere ışık tutmatı amaçlanmıştır. Bu doğrultuda, bir devlet üniversitesinde farklı fakültelerde ve meslek yüksek okullarında (MYO) eğitim gören 2371 öğrenciye bir anket çalışması uygulanmıştır. Cinsiyet, not ortalaması, eğitim görülen birim ve dönem değişkenleri ile öğrencilerin uzaktan eğitim sisteminden memnuniyet düzeyleri arasında bir ilişki olup olmadığı detaylı bir şekilde analiz edilmiştir. Verilerin analizinde ki-kare testi, t testi ve ANOVA testine başvurulmuştur. Sonuçlar incelendiğinde MYO öğrencilerinin fakülte öğrencilerine kıyasla uzaktan eğitim*

*) Arş. Gör. Dr. Yalova Üniversitesi İktisadi ve İdari Bilimler Fakültesi İşletme Bölümü (e-posta: cem.gurler@yalova.edu.tr) ORCID ID. http://orcid.org/0000-0001-5127-6726
**) Arş. Gör. Yalova Üniversitesi İktisadi ve İdari Bilimler Fakültesi İşletme Bölümü (eposta: tugce.uslu@yalova.edu.tr) ORCID ID. https://orcid.org/0000-0001-7494-7529
***) Doç. Dr. Yalova Üniversitesi İktisadi ve İdari Bilimler Fakültesi İşletme Bölümü (eposta: ikram.dastan@yalova.edu.tr) ORCID ID. https://orcid.org/0000-0002-4366-8698

*Bu makale araştırma ve yayın etiğine uygun hazırlanmıştır iThenticate intihal incelemesinden geçirilmiştir.*

*sistemini daha başarılı bulduğu görülmektedir. Ancak, fakülte öğrencileri ve not ortalaması yüksek olan öğrencilerin canlı dersleri daha düzenli takip ettikleri söylenebilir.*

***Anahtar Kelimeler:*** *Koronavirüs (Covid-19), pandemi, uzaktan eğitim, öğrenci memnuniyeti*

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## I. Introduction

In the last months of 2019, cases of pneumonia of unknown etiology have been reported in Wuhan city, Hubei province, China. On January 7, 2020, it was determined that the cause of pneumonia cases was a new coronavirus that had not previously been detected in humans (Turkish Ministry of Health, 2020). After all, The World Health Organization (WHO) named it COVID-19 (coronavirus disease 2019) on February 12, 2020. COVID-19 is a viral respiratory disease that causes an epidemic in more than a hundred countries around the world (Akpınar and Üstün, 2020). On March 10, 118319 cases and 4292 deaths from COVID-19 were detected in 113 countries in total. The coronavirus outbreak has been labelled a pandemic by WHO on 11 March. According to WHO, a pandemic is the worldwide spread of a new disease (WHO, 2010). Although the disease has spread worldwide, Hahn et al. (2020) pointed out that the genomes of viruses vary according to geography. They also found that the genomes of viruses detected in Europe and the United States were more diverse than in Asia.

Among the OECD countries, Japan was the first country where coronavirus was detected while Turkey was the latest. Japan was also the first country where the first death occurred while Slovakia was the latest. (Figure 1 1). Coronavirus' spread rate differs from country to country like its death rate. Turkey confirmed first case of COVID-19 on March 11, and the first death due to COVID-19 occurred on March 17 (Turkish Ministry of Health, 2020).

Two days after the first case, the Ministry of National Education closed primary, secondary and high schools and the Council of Higher Education (YÖK) closed universities in Turkey. Then, on March 23, the Ministry of National Education and YÖK started online education (Anadolu Agency, 2020; YÖK, t.y.). Finally, YÖK announced on May 11 that final exams cannot be hold face-to-face in the 2019/2020 academic year (YÖK, 2020). For the 2020-2021 academic year, many universities abroad have already announced that education will be given by distance learning. In this direction, YÖK increased the rate of lectures in distance education up to 40%. In addition, YÖK guided all state and foundation universities to establish a distance education center.

## II. Literature review

After the transition to distance learning during the Covid-19 pandemic, a new and unaccustomed period has begun for students and lecturers. In the literature, the transition to distance learning in the pandemic has been discussed by several researchers.

Yamamota and Altun (2020) discuss the impact of Covid-19 on the transition to distance learning of countries such as the USA, Italy, including Turkey. They emphasise the sustainability of the transition to distance learning and suggest that distance learning could soon turn into a main function rather than an alternative path. The research of Karadağ and Yücel (2020), which is parallel with our study, evaluates the satisfaction of undergraduate students on the distance education system in Turkey and draws attention to the problems encountered in distance learning due to the Covid-19 pandemic. It can be said that the research of Karadağ and Yücel (2020) is a guide in eliminating future problems related to distance learning.

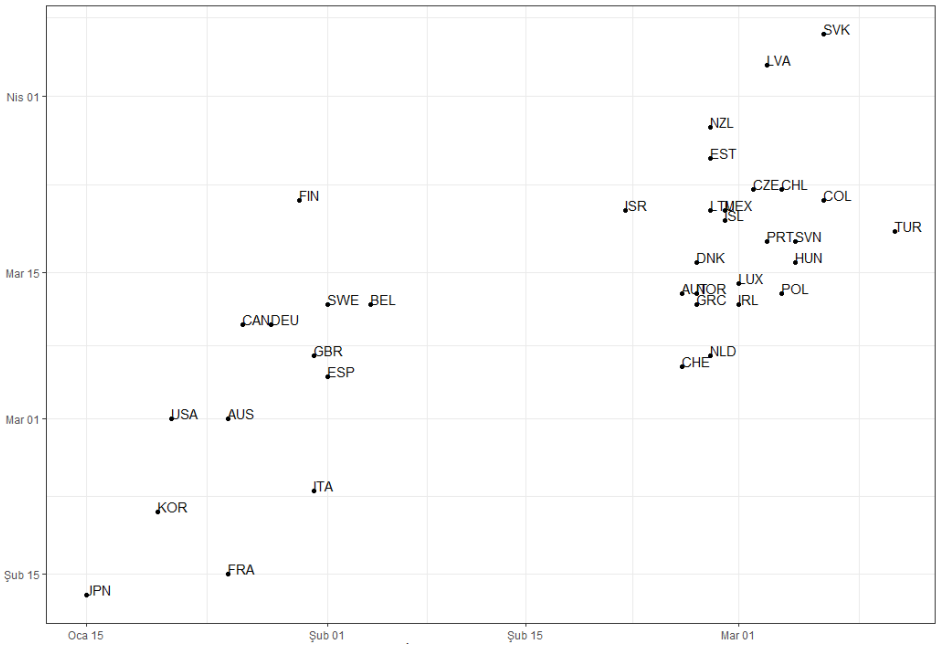


**Figure 1.** First case and first death cases of OECD countries

A study conducted in Georgia (Basilaia and Kvavadze, 2020) analysed the productivity and convenience of the Google Meet application used in the Covid-19 pandemic in terms of students and teachers. The method of questionnaire was applied to understand which tools students use to connect to the distance education system, which methods the instructors prefer more frequently during the lessons, the operation of the system, and examination of the system from a technical aspect. However, the study's findings should be interpreted carefully as making analysis after applying Google Meet application for only one week may not produce sufficient results to predict the future

problems correctly. By conducting a survey during Covid-19, Owusu-Fordjour et al. (2020) show that students in Ghana encounter various difficulties in terms of internet access and use of the distance education system. In another study on Ghanaian students in China, Demuyakor (2020) states that students perceive distance learning as a good idea, but some dormitories experience difficulties in accessing the internet. Similarly, there are studies in the literature evaluating the distance education system in India in the Covid-19 pandemic. Lall and Singh (2020) detect that the main reason that university students enjoy distance learning is the flexibility of their study time and the opportunity to study at the desired time. Muthuprasad et al. (2020) conclude that a great majority of students follow lessons through smartphones and recorded classes with quizzes at the end of the class increase the effectiveness of these lessons. Nevertheless, the implementation of this research only for agricultural faculty students in India restricts on generalizing the results. Dwivedi et al. (2020) found that distance learning reduced the perceived stress level of medical students during the Covid-19 pandemic in respect of the survey applied to medical students**.** According to the study of Nenko et al. (2020), the distance education system due to the Covid-19 pandemic has positive effects on Ukrainian students generally.

Kürtüncü and Kurt (2020) highlight the difficulties experienced in distance learning during the Covid-19 pandemic and the solutions offered for these difficulties through a questionnaire applied to nursing students. Mahdy (2020) states that veterinary students encounter challenges in learning practical lessons through distance learning**.** Nguyen and Huynh (2020) mention that the negative effects of distance learning in the Covid-19 pandemic are mostly caused by human-related factors.

## III. Materials and Methods

This research aims to evaluate distance learning from the perspective of students and to determine the satisfaction of students about distance learning in the Covid-19 pandemic. Additionally, the effect of distance learning on the success of students is investigated. In line with this target, we conduct a questionnaire for students at a state university. The questionnaire was carried out online on 16-26 May 2020 via the University Information Management System. 2371 students studying at different faculties and vocational schools of higher education participate in the research (given in Table 1).

The first section of the questionnaire consists of questions to determine the demographic variables of the students. We obtain detailed information about the variables of the study by asking students about gender, grade point average, department,

and semester. Afterward, we asked the question of 'which device/devices used for attending the courses?' to the students to determine the preference of the students in the Covid-19 pandemic. The second section consists of the questions of 'what is the success level of the courses?' and 'what is the success level of the system?'. The students were asked to evaluate these questions on a scale of 1 to 10. The questions in the third section are as follows: 'Did you follow the live courses regularly?' and 'Did you follow the contents uploaded to the system regularly?'. The options of the answer for the questions are given as 'Yes', 'Partially', and 'No'. We investigate the effect of distance learning on students' success in this section. In the final section, we asked the question 'do you find the distance education system of the school successful?' to detect the level of satisfaction of students in aspects of the distance education system. The options of the answers offered to the students are 'Always', 'Often', 'Sometimes', 'Rarely', and 'Never'.

The chi-square test, which analyzes the relationship between qualitative variables, is applied to determine whether there is a relationship between the variables of gender, grade point average, department, semester and the success of the distance education system. The t-test is used for evaluations based on gender and department. Besides, The ANOVA test is implemented for evaluations based on grade point average and semester. The findings of the analyzes are obtained through the Jamovi statistics program and the confidence level of 90% is used in the analyzes (The jamovi project, 2019).

## IV. Findings

Table 1 shows the descriptive statistics of the students participated in the survey.

Table 1. Descriptive statistics of the students

| | | | | | | | **Total** |
|---|---|---|---|---|---|---|---|
| | | **Female** | **Male** | | | | |
| **Gender** | n | 1003 | 831 | | | | **1834** |
| | % | 54,7 | 45,3 | | | | |
| | | **Faculty** | **Vocational School** | | | | |
| **Department** | n | 1173 | 691 | | | | **1864** |
| | % | 62,9 | 37,1 | | | | |
| | | **2nd** | **4th** | **6th** | **8th** | **10th** | |
| **Semester** | n | 772 | 452 | 246 | 282 | 88 | **1840** |
| | % | 42,0 | 24,6 | 13,4 | 15,3 | 4,8 | |
| | | **<2.00** | **2.01-2.50** | **2.51-3.00** | **3.01-3.50** | **3.51-4.00** | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **GPA** | n | 362 | 519 | 497 | 296 | 124 | **1798** |
| | % | 20,1 | 28,9 | 27,6 | 16,5 | 6,9 | |

The most used device to study online was computer (39,5%) followed by computer and smartphone (30,1%) and smartphone (%26,6). Table 2 indicates that the device used by the students varies according to their departments and semesters. On the contrary, gender and GPA has no effect on the device used. Approximately 56% of vocational school students used smartphone to study online while 72,85% of faculty students used computers. In addition, unlike the 2nd and 4th semester students, most of the 6th, 8th and 10th semester students used computers.

| | | | | | | | **p - value** |
|---|---|---|---|---|---|---|---|
| Which device used for attending the courses? | | **Female** | **Male** | | | | |
| | PC | 376 | 339 | | | | **0,215** |
| | Smartphone | 276 | 215 | | | | |
| | | **Faculty** | **Vocational School** | | | | |
| | PC | 534 | 199 | | | | **<0,001** |
| | Smartphone | 214 | 280 | | | | |
| | | **2nd** | **4th** | **6th** | **8th** | **10th** | |
| | PC | 259 | 160 | 115 | 145 | 45 | **<0,001** |
| | Smartphone | 245 | 150 | 49 | 34 | 8 | |
| | | **<2.00** | **2.01-2.50** | **2.51-3.00** | **3.01-3.50** | **3.51-4.00** | |
| | PC | 148 | 219 | 194 | 96 | 53 | **0,796** |
| | Smartphone | 95 | 139 | 136 | 76 | 35 | |

To evaluate the success of online courses and the system, a 10-point Likert Scale was used ant t-test and ANOVA were performed. For both questions, the mean scores of males (5,19) were higher than females (4,83). Department and semester have no effect on online course success. Vocational school students (5,10) find the system more successful than faculty students (4,96). The $10^{th}$ term students (5,58) are the most satisfied students with the system while $6^{th}$ semester students (4,87) are the least. GPA has no effect on both questions.

| | **Gender** | **Department** | **Semester** | **GPA** |
|---|---|---|---|---|
| Success of online courses? (1 worst – 10 best) | **0,005** | 0,288 | 0,154 | 0,123 |
| Success of the system? (1 worst – 10 best) | **0,000** | **0,000** | **0,000** | 0,845 |

Table 4 shows the chi-square results that there is a difference in attending the live courses regularly according to the student's department and GPA. Besides, there is a difference in following the course content uploaded to the system according to the student's gender, department and semester. Faculty students and students with a GPA higher than 3.00 followed live courses more regularly. Also, the course contents

uploaded to the system were followed more regularly by males, Vocational School students and 4th term students.

**Table 4.** Evaluation of the traceability of the system

| | **Gender** | **Department** | **Semester** | **GPA** |
|---|---|---|---|---|
| Did you follow the live courses regularly? (1- yes, 2- partly, 3- no) | 0,055 | **0,000** | 0,052 | **0,000** |
| Did you follow the contents uploaded to the system regularly? (1- yes, 2- partly, 3- no) | **0,000** | **0,002** | **0,001** | 0,526 |

Chi-square results can be seen from the table, gender, department, semester and GPA have an effect on student's attention during the distance learning. It can be said that the interest of males, Vocational School students, students in their first semester and students with a grade below 2.51 in the lessons increased relatively compared to the others.

**Tablo 5.** Evaluation of the students' interest

| | **Gender** | **Department** | **Semester** | **GPA** |
|---|---|---|---|---|
| Distance education has increased my interest in courses. (1- yes, 2- partly, 3- no) | **0,000** | **0,010** | **0,035** | **0,000** |

It can be seen from the chi square results in Table 6 that only student's department and GPA have an impact on the student's perspective of the distance education system. Additionally, Vocational School students find the distance education system more successful.

**Tablo 6.** Evaluation of students' perspectives on the distance education system

| | **Gender** | **Department** | **Semester** | **GPA** |
|---|---|---|---|---|
| Do you find the distance education system of the school successful? (1- always, 5- never) | 0,241 | **0,001** | 0,494 | **0,046** |

## V. Conclusion

This paper aims to determine to what extent students are satisfied with the methods used and the efficiency of the system in terms of education, in case of educational activities in higher education institutions using distance education systems. Our findings obtained from the study show that students regularly follow the course activities (asynchronous courses, synchronous courses, and course material tracking). The faculty students follow the course activities more regularly than the students of the vocational school of higher education. The number of students connected to the distance education system with computers in faculties is higher than the number of students in vocational school of higher education. Additionally, 3$^{rd}$ and 4$^{th}$ grade students prefer to use computer instead of using mobile phone to log into the system. The vocational school of higher education students find the system more successful than the faculty students. The faculty students and the students with high grade point averages use the distance education

system more intensively. The male students follow the course contents uploaded to the system more frequently than the female students.

We aim to detect the interest levels of students in courses in the distance education system, which is compulsory due to the Covid-19 pandemic. In this context, it is observed that the male students, the students studying vocational school of higher education, and the students with low grade point average are satisfied with the system. It can be said that these students also increased their interest in courses with the distance education system. When the system is evaluated in terms of its convenience for exams, it is seen that the system is generally not suitable for exams. It is seen that the students cannot get technical support when there is a problem in the system. However, they can easily access the lecturers of the courses.

Although the distance education system has disruptions, it can become more efficient with improvements in infrastructure and course contents. Considering that all students of the university intensely use the system in a short time, minor technical problems can be assumed to be normal.

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