IJEASED

INTERNATIONAL JOURNAL OF EASTERN ANATOLIA SCIENCE ENGINEERING AND DESIGN

Uluslararası Doğu Anadolu Fen Mühendislik ve Tasarım Dergisi
ISSN: 2667-8764 , 5(1), 90-125, 2023
https://dergipark.org.tr/tr/pub/ijeased

Araştırma Makalesi / *Resesrch Article*
Doi: 10.47898/ijeased.1246631

Difficulties Experienced by Vocational Teachers and High School Students in Applied Lessons in Distance Education

Mehlika KOCABAŞ AKAY [1*], Murat YÜCEL [2] , Meral ŞAHİN GÜNKUT [3]

[1]Kocaeli University, Faculty of Engineering, Department of Industrial Engineering, Izmit,41100, Kocaeli-Turkey.

[2] MEB, Hacı Rahime Ulusoy Vocational and Technical Anatolian High School, 34100, Istanbul-Turkey.

[3] Körfez Milangaz Hacer Demiröen Vocational and Technical Anatolian High School Körfez , 41900, Kocaeli-Turkey.

Yazar Kimliği / *Author ID (ORCID Number)*	**Makale Süreci / *Article Process***	
* *Corresponding author* : mehlika.kocabas@kocaeli.edu.tr	**Geliş Tarihi / *Received Date* :**	02.02.2023
https://orcid.org/0000-0003-0564-4625 , M. Kocabaş Akay	**Revizyon Tarihi / *Revision Date* :**	24.05.2023
https://orcid.org/0000-0001-7563-1219 , M. Yucel	**Kabul Tarihi / *Accepted Date* :**	30.05.2023
https://orcid.org/0000-0001-7023-0803 , M. Şahin	**Yayım Tarihi / *Published Date* :**	15.07.2023

Cite: Kocabaş Akay, M., Yücel, M., Günkut Şahin M. (2023). Difficulties Experienced by Vocational Teachers and High School Students in Applied Lessons in Distance Education, International Journal of Eastern Anatolia Science Engineering and Design, 5(1), 90-125.

Abstract

The aim of this study, in distance education, is to identify the difficulties experienced by vocational high school teachers and students in the applied courses. This research using a phenomenological approach is important in that it reveals the challenges of distance education that teachers and students face in the processing of applied courses. Eight teachers, including four ship machinery teachers and four deck management teachers, who experienced distance education for the first time and our machine lesson students, four deck lesson students, in totally eight students are the study group of this research. An interview form consisting of semi-structured open-ended questions was preferred as a data collection tool in the study. in order to ensure the credibility, the questions were checked by an expert. the data obtained at the end of the study were analyzed by content analysis and the results were shared under the title of findings. When looked at the results of this study, teachers and students generally find Distance Education useful. However, it 's expressed that distance education is not particularly suitable for the structure of applied courses of vocational high schools and they are not efficient due to the lack of adequate student participation in the courses.

Keywords: AHP, Covid-19, Teacher-Student Satisfaction, Applied Courses, Distance Education.

ISSN: 2667-8764
https://dergipark.org.tr/tr/pub/ijeased

Uzaktan Eğitimde Uygulamalı Derslerde Meslek Öğretmenlerinin ve Lise Öğrencilerinin Yaşadıkları Zorluklar

Özet
Türkiye'de Covid-19 Pandemi Salgınıyla15 Mart 2020 tarihinde yüz yüze eğitim durdurulmuş ve uzaktan eğitim yöntemiyle eğitim öğretim yapılmıştır. Bu araştırmadaki amaç meslek lisesi öğretmenlerinin ve öğrencilerinin uzaktan eğitim sürecinde uygulamalı derslerde yaşadıkları zorlukları ortaya çıkarmaktır. Uzaktan eğitim sürecinde, Fenomenolojik yaklaşım kullanılarak yapılan bu araştırma, öğretmen ve öğrencilerin uygulamalı derslerde karşılaştıkları zorluklarını ortaya çıkarması açısından önemlidir. Araştırmada çalışma grubu olarak ilk defa canlı ders deneyimi yaşayan Gemi Makineleri branşından rastgele seçilmiş dört meslek öğretmeniyle Güverte İşletme Bölümü branşından rastgele seçilmiş dört güverte işletme öğretmeni olan üzere sekiz öğretmen ve rastgele seçilmiş dört makine dersi gören öğrenciyle dört güverte dersi gören öğrenci olan sekiz öğrenci oluşturmaktadır. Araştırmada veri toplama aracı olarak yarı yapılandırılmış açık uçlu sorulardan oluşan görüşme formu kullanılmıştır. Açık uçlu soruların hazırlanmasında uzman desteğine başvurulmuştur. Çalışma sonunda elde edilen veriler içerik analizi yapılarak çözümlenmiştir. Ayrıca çalışmanın sonunda AHP yöntemi kullanılarak hangi eğitim sisteminin daha verimli olduğu ortaya konmaya çalışılmıştır. Sonuçlara bakıldığında öğretmen ve öğrenciler genel anlamıyla uzaktan eğitimi faydalı bulmakta ancak uzaktan eğitimin özellikle meslek liselerinin uygulamalı derslerinin yapısına uygun olmadığı, derslere yeterli öğrenci katılımının olmaması nedeniyle verimli geçmediği ifade edilmektedir. AHP uygulaması sonuçlarına göre de yüz yüze eğitimin lise öğrencilerine uzaktan eğitime göre daha faydalı olacağı sonucuna ulaşılmıştır.

Anahtar Kelimeler: *AHP, Covid-19, Öğretmen-Öğrenci Memnuniyeti, Uygulamalı Dersler, Uzaktan Eğitim*.

1. Introduction

The Corona Virus infection, which started in China-based and Wuhan city in December 2019 , was officially reported to the World Health Organization (WHO). The Pandemic process, called the Covid-19 Outbreak, showed its effect in more than 160 countries in January 2020, and although the countries took Covid-19 measures, the number of cases continued to increase, especially in the USA and European countries. The first case in Turkey was reported on March 11, 2020, and since then, measures have been taken by various institutions and organizations and are still being taken. Whether the educational activities of educational institutions, which have the potential of students from all levels, will continue or not has been the first agenda item. Subsequently, as of March 16, education was suspended for a limited period in pre-school, secondary and higher education institutions. In addition, with a circular published by YÖK, it was announced that internship, internship and practice courses would be suspended.

With the increase in the number of cases, YÖK has decided to carry out associate, undergraduate and graduate programs with distance education as of March 18. In the 2020-2021 academic year, universities continued to carry out their education activities using various distance education platforms (Güler, Anadolu Ajansı, 2021) Ministry of National Education (MEB) Weekly course programs were structured, through the internet with EBA, via TRT and television. Provided educational support to students. In addition, all kinds of scenarios have been prepared so that students will not be victimized in any way, including their exams, by providing free 3 GB internet access from

all operators in the use of the Education Information Network. The database was expanded by adding materials to the EBA Academic Support platform, which was in effect until that date, by adding materials that can be trained in other grade levels, except for grades 11 and 12. It has been decided that teachers will not be present in schools for professional development activities during the break. The fact that the first case was seen late in Turkey compared to other countries allowed education institutions time to prepare for distance education (Millî Eğitim Bakanlığı, 2021).

Distance Learning; In cases where it is not possible to carry out in-class activities due to the limitations of traditional learning-teaching methods, it is a teaching method from a specific center through specially prepared teaching units and various environments of communication and interaction between the planners of educational activities and students (Kaya, 2002). Distance education is an education system model in which students and teachers in different environments carry out their learning-teaching activities with communication technologies and postal services (İşman, 2005). Distance education, on the other hand, describes the course development process of a remote institution that prepares learning materials for learners. Distance education is a planned and systematic activity with great flexibility, especially in terms of "learning time". There is no limitation in terms of "learning place". However, it provides great flexibility in terms of "learning speed" (Uşun, 2006). The main assumptions on which distance education is based are; Individuals are in need of different educational opportunities, existing applications cannot meet this, new opportunities are added to existing applications and individual-independent learning and mass education are provided. These new options, which have been created, eliminate the inadequacy of traditional education and training practices and ensure that all individuals benefit from education and training equally. In many countries in the world, distance education method is used to solve different kinds of education problems (Dündar, Candemir, Demiray, Genç Kumtepe, Öztürk, Sağlık Terlemez, & Ulutak, 2017). Distance education has some benefits and limitations. According to (Kaya, 2002) the benefits of distance education are; Providing different education options to people, minimizing the inequality of opportunity, reducing the cost and increasing the quality of education, providing freedom to the student and providing a rich educational environment, providing individual and independent learning, giving the individual responsibility for learning, and the necessity of being in a certain indoor space at a certain time. can be summarized as elimination (Kaya, 2002). Its limitations are; Failed to establish face-to-face education relations easily, prevent students from socializing, not being able to provide enough help to students who are unaided and who do not have the habit of self-learning, taking rest time for working students, not being able to benefit from practical lessons sufficiently, not being effective in the realization of behaviors related to skills and attitudes, being dependent on

transportation facilities and communication technologies. can be summarized as (İşman, 2005) states that despite the limitations of distance education, it should be further expanded in the Turkish education system (İşman, 2005). When the literature is scanned, the attitudes of teachers, students, teacher candidates and university staff towards distance education are few (Ağır, 2007; Ateş & Altun, 2008; Birişçi, 2013; Barış, 2015; Yıldız, 2016; Dündar et al., 2017; Yenilmez, Balbağ et al . Turgut, 2017) has been seen to be studied. Teachers' attitudes towards educational technologies, internet usage situations, administrators' views on distance education technologies, teachers' views on the applicability of distance education, students' perception of distance education (Demirli, 2002; Soft and Kıyıcı, 2004; Çelik & Bindak, 2005; Deniz, 2005; Sabancı , 2005; Turhan, 2005; Ağır and Okçu, 2006; Pala, 2006; Tırnovalı, 2012; Yalman and Kutluca, 2013; Gündüz, 2013; Özer and Kır, 2018). In addition, it is understood from the literature review that the studies in distance education are generally not based on the opinions of the teachers, but according to the opinions of the students (Kocayiğit, Ali and Uşun, Salih, 2020).

In the study, eight teachers and eight students working at Hacı Rahime Ulusoy Vocational and Technical Anatolian High School (Maritime School) in Üsküdar District of Istanbul were asked to give detailed answers to five questions asked with a semi-structured interview form. The answers are commented. According to these answer comments, it was tried to understand the difficulties experienced by teachers and students in applied courses in vocational high schools and it was desired to investigate whether distance education is suitable for the structure of applied courses. In addition, as a result of the answers given by making use of expert opinion, AHP application, which is a multi-criteria decision-making technique, was applied to secondary school students and which education system was better was revealed with numerical data. At the end of the study, it was concluded that face-to-face training would be more efficient.

1.1. Problem Status

In this study, the difficulties experienced by teachers and students in practical lessons in distance education during the pandemic period were determined as the subject of research. When the literature on the subject is examined, it is stated that there are many studies related to distance education, but there is no existing research topic in terms of the difficulties experienced by teachers and students in applied courses in vocational high schools during the Pandemic period, and that the study carried out in this context will be a pioneer in the field and that teachers and teachers in the applied distance education courses that are put into practice for the first time in high schools. The

difficulties experienced by the students are an original study and it is thought that it will contribute to the literature.

1.2. Purpose of the research

The aim of the present study is to reveal the difficulties experienced by the teachers and students in the applied courses in distance education carried out by the Vocational High School teachers working in the Üsküdar district of Istanbul. In addition, it is to determine whether the distance education system is efficient at secondary education and below, although it is important for the development of distance education with the developing technology by looking at both the phenomangological approach and the AHP application result.

1.3. Research Problem

In line with the purpose of the research, answers were sought for the following sub-problems according to the opinions of teachers and students:

1. What are the teachers' thoughts on EBA practices in the distance education system?
2. What are the teachers' thoughts on the learning process in emergency distance education?
3. What kind of problems did teachers encounter in emergency distance education?
4. What are the problems faced by teachers in emergency distance education in applied workshop lessons?
5. What are the teachers' recommendations for improving the activities of distance education ?
6. What are the students' thoughts on EBA applications in the distance education system?
7. What are the students' thoughts on the learning process in emergency distance education?
8. What kind of problems did students encounter in emergency distance education?
9. What are the problems faced by students in applied workshop courses in emergency distance education?
10. What are the students' recommendations for improving distance education activities ?

2. METHOD

2.1.Phenomenological Method

The research was shaped by the phenomenological method, one of the qualitative research methods. The phenomenological research method reveals a concept and the experience of a few people, or the meaning of this experience in individuals. In the research, semi-structured interview forms with five open-ended questions for teachers and five questions for students were used as data collection tool. Content analysis was carried out in the light of the collected data. Content analysis,

books, articles, theses, historical documents, etc. within the rules. It is a systematic and renewable method in which a text is summarized as smaller contents (Canpolat, U. & Yıldırım, Y ., 2012).

Table 1. Method Information

Research pattern	Identification of participants	Data collection	Analysis of data and credibility
Qualitative research Phenomenology	Sample 8 teachers and 8 students studying at Maritime High School in Üsküdar District of Istanbul Province and engaged in distance education activities	Semi-structured Interview form Content analysis	Expert review Researcher function

2.2. Study Group/Cosmos and Sample

In the study, the study group consists of four randomly selected vocational teachers from the Marine Engineering branch, who experience live lessons for the first time, and eight teachers, four of which are randomly selected from the Department of Deck Operations, and eight students, four of whom are taking machine lessons and four students who are taking deck lessons .

Participants of this research are eight vocational teachers working in Vocational High Schools in Istanbul, Üsküdar District, actively participating in distance education activities, and eight students studying in the same school, who took courses in distance education activities. Participants in the research were selected using the criterion sampling method (Canpolat, U. & Yıldırım, Y., 2012).

In the research, criteria were determined for teachers to be working in Üsküdar District vocational high school and to conduct distance education activities and to give both practical and theoretical lessons.

Table 2. Characteristics of the Participants

Participating teacher	Gender	Code	Branch	Seniority	Educational Status
1.Teacher	Male	BC1	Marine/Ship Machinery	5	Bachelor's degree
2.Teacher	Male	BC2	Marine/Ship Machinery	10	Bachelor's degree
3.Teacher	Male	BC3	Marine/Ship Machinery	26	Bachelor's degree/ (Expert Teacher)
4.Teacher	Male	BC4	Marine/Ship Machinery	35	Bachelor's degree
5.Teacher	Male	GO1	Marine/Deck Management	7	Graduate graduate
6.Teacher	Male	GO2	Marine/Deck Management	8	Graduate graduate
7.Teacher	Male	GO3	Marine/Deck Management	11th	Bachelor's degree
8.Teacher	Male	GO4	Marine/Deck Management	19	Graduate graduate

For the students, the criterion sample was determined as being a vocational high school student, taking courses through distance education, and being in the applied courses in the courses they have taken.

Table 3. Characteristics of the Participants

Participating teacher	Gender	Age	Department	Code	Grade level
1.Student	Girl	15	Basic Den.Guv .	KÖ1	9th grade
2. Student	Girl	16	Basic Den.Guv .	KÖ2	10th grade
3. Student	Girl	17	Deck Management	KÖ3	11th grade
4. Student	Girl	17	Ship Machinery	KÖ4	12th Grade
5. Student	Male	15	Basic Den.Mak .	IE1	9th grade
6. Student	Male	15	Basic Den.Mak .	IE2	10th grade
7. Student	Male	16	Ship Machinery	EÖ3	11th grade
8. Student	Male	19	Deck Management	IE4	12th Grade

A semi-structured interview form was created in accordance with the purpose of the research. Semi-structured interview forms were sent to teachers and students. Before sending the interview forms to the teachers and students, they were called one by one and detailed information about the study was given, and the purpose of this research was mentioned. Teachers and students were told that they could answer the questions with their free will as they wished, and they acted in accordance with research ethics. In addition, they are assured that their personal information and answers to the research questions will only be used for the research and will not be used for any other purpose that will not be mentioned in the research. The research was conducted between March 2021 and May 2021 with eight teachers and eight students who had volunteered participation.

2.3. Findings

Ask following questions to Students and Teachers,

*What are their thoughts on EBA applications in the distance education system?

* What was the approach of students and teachers to the distance education process during the epidemic?

The problem question was examined in the light of the data collected in line with the technology acceptance theory. At the end of the research, it was determined that students had positive and negative thoughts about distance education processes.

Table 4. Teachers' views on the EBA distance education system and tools

Opinions	f
A. Positive opinions of teachers	
Providing uninterrupted education	6
Reaching all students	5
Content is free	5
Technologically, teachers and students have the opportunity to develop themselves.	4
Having a TV support that can be watched	one
Offering an alternative to education	one
Providing open access to students regardless of time and place	2
Easy to use technological interface	one
Easy and convenient to use lesson tools	one
B. Negative opinions of teachers	
Deprivation of students who do not have access to the system	4
Lack of content for every branch	2
Not enough support units	2
Insufficient infrastructure	4

BC4: “I think that having an education platform like EBA during the Covid-19 epidemic is a chance in terms of not interrupting education completely.” He stated that education is not interrupted with his opinion. Similarly, GÖ4: “EBA is an application that allows education to be done remotely during the pandemic process.

Although it is not as efficient as face-to-face education, it has benefited the students especially in terms of allowing them to see the theoretical courses.” He used his expressions.

GÖ1: “Providing the opportunity to continue education without interruption, providing the content free of charge, improving the technology usage competence of teachers and students, providing open access to students regardless of time and place.” He talks about many positive aspects with his expressions.

On the other hand, the fact that the live lesson tools are easy to use is GÖ3: "The advantage of the system is that the live lesson applications are easy to use, camera support, and the possibility of using a blackboard". He used expressions as

GÖ2's views on the contents of the courses are as follows: "There are positive aspects such as being rich in terms of content related to the courses, suitable course durations for education, and improving students' research skills." He commented that the course times are good and that distance education directs students to research.

When Table 4 is examined, it is seen that teachers' negative opinions are: Students who do not have access to benefit from distance education, insufficient content, insufficient support services, and insufficient infrastructure.

Students who do not have access to benefit from distance education BC3: "Since there must be separate equipment according to the number of siblings in a house, in some houses, students were able to access their courses in order.

Since the school environment could not be formed, the students could not give the necessary attention to the lessons. "By expressing it with his expressions, he mentioned that the students could not focus their attention on distance education.

Similarly, GO1: "The inability of the students without access to benefit from distance education and the inadequacy of infrastructure are the negative aspects of the system. "In addition to his statements, he also drew attention to the lack of infrastructure.

Table 5. Students' thoughts on the EBA distance education system and EBA applications

Opinions	f
A. Positive comments	
Providing uninterrupted education	6
Reaching all students	5
Content is free	5
Technologically, teachers and students have the opportunity to develop themselves.	one
Offering an alternative to education	one
Easy to use technological interface	one
B. Negative comments	
Lack of helpful support service	4
Insufficient infrastructure	3

When Table 5 is examined, it can be said that students look at the emergency distance education system both positively and negatively. The students expressed their opinions in cases where the education continues without a break, reaches every student, provides free content, provides the opportunity for technological self-development, is an alternative to formal education, and is easy to use the interface. EÖ4, who expressed his thoughts about the free content presentation, said: "There are enough course materials to teach the courses. There are many resources such as subject screening tests, summary information, videos, pictures, subject repetitions. Thanks to EBA, they can easily access the resources that most places sell for a certain fee, free of charge. They are satisfied with this situation." He stated that free content is available and easy to access. "He had the opportunity to reach

every student." EÖ1: "I am pleased that EBA provides us with more accurate and more accessible information." expressed as. KÖ2: "EBA has been very useful in distance education, it is a nice platform." expressed in his words.

When Table 5 is examined, it is seen that students complain about the EBA system about support services and infrastructure problems . KÖ3 on infrastructure problems: "We often have problems in the EBA application and therefore we cannot attend the course. It's also a very slow app." Similarly, KÖ4: "Due to the insufficient EBA applications, there is a tendency to turn to other applications (zoom, microsoft teams)." expressed their problems in the system. In addition, EBA has made both positive and negative views on the distance education system and EBA applications: "I find the EBA application generally sufficient and useful, the courses are taught from there and fall into my program as soon as I am appointed. Homework is also a problem. The same convenience is provided for the online exam. But sometimes it doesn't open, crashes and I can't log in. There are people who miss the classes, or the instructors can't teach the lessons, and in general, we can't work very quickly because it is a slow application." And EÖ3: "In this process, the system completely turned to distance education. The homework given by the EBA is quite sufficient for students to repeat the study subject, but since the lessons are lively, it is very difficult for the student to adapt to the lesson during the lesson. For this reason, many students start the lesson and focus on other things and do not listen to the lesson." have made statements. If the opinions of teachers and students are evaluated together, it is seen that they have negative thoughts about the fact that the education continues uninterrupted, the content is free, the positive support services such as the ease of use of the interface are insufficient and there are infrastructure problems.

2.4.Teachers' thoughts on learning processes in emergency distance education

With this title, an examination has been made in line with the principles of teachers' and students' satisfaction theory and innovation theory. The advantages and disadvantages of the system have been examined to what extent the needs in student-centered education can be met.

Table 6. Opinions of teachers on learning processes in emergency distance education

Opinion Titles	f
A. Positive opinions of teachers	
Giving students the opportunity to progress on their own	2
Opportunity to repeat the content on my site as much as desired	3
Rich in content	2
B. Negative opinions of teachers	
Little attendance at classes	7
Low motivation of students	4
Insufficient EBA TV for metacognitive learning	one
Low achievement in applied courses	5
Failure to implement an individualized education plan for mainstreaming students	one
Insufficient content in the system	2
Attendance and absence from the course	6
Failure to complete given work assignments and performance assignments	5

When Table 6 is examined, it is seen that it is rich in content for culture lessons, it has the opportunity to repeat as much as it wants and it has positive features such as learning at its own pace. The main features that teachers see as negative can be listed as low student participation, low student motivation, inadequacy of the content presented, especially the profession, and not doing the homework given. While GÖ3 stated that the content of culture courses is sufficient and there are also resources on EBA TV to help 12th grade students preparing for the exam, he also stated that there is not enough content for vocational courses, students are mostly not successful in applied courses, and the participation in the courses is decreasing day by day due to absenteeism has done.

"Contents for culture lessons in learning processes are quite rich. Students can watch the content they want as much as they want and can do the activities. In addition, the EBA Academy service provided for senior high school students has become a different alternative for students preparing for university. It is a successful result that the system creates study plans according to the student's wishes and gives appropriate guidance according to the success situation.

However, the lack of rich content, especially for vocational courses, creates a disadvantage for vocational high school students. Although this deficit is tried to be eliminated by shooting EBA course videos, the deficit is too much in this regard. In addition, since vocational courses are generally applied practically, they cannot be carried out very well with the distance education process. In some areas, this is almost impossible. In addition, not counting absenteeism in the distance education

process causes students not to attend the course over time. Especially, most of the senior students do not attend the classes on the pretext that we are preparing for the university exams."

While PT2 stated that the system is rich in content and that he can repeat it as much as he wishes, he said that the participation in the course was low and the inclusion students could not get efficiency in the process. But the lack of student participation and the inability to implement an individualized education plan for mainstreaming students." expressed in his words.

Student participation and student motivation for BC4 EBA live lessons and EBA TV "We also had difficulties in motivating students. Some of the students did not attend the live classes regularly due to computer and internet problems, some of them had to work to support their families, and some of them did not have to attend the live classes. Since our students did not want to open their cameras while the live lesson was being held, we could not regularly monitor whether they were watching the lesson or not. Most of the time, we lectured without being sure whether there was a student listening to us or not. We did not get immediate answers to our questions." He also stated that he could not get answers to the questions he posed to the students.

GÖ4 stated with the following statements that the measurement can be made through EBA in the lessons, but the homework given does not return.

"Learning level of the courses can be measured with study questions and assignments sent over Eba, but the return level of these questions by the students at the class-group level is low."

BC1 from a different point of view said that the students could not adapt to the process and that as a technical teacher, the students could not be successful in the applied lessons because of the demonstration method in the applied lessons and the instant corrections could not be made. I think that concepts such as demonstration and correction of behavior by providing feedback when mistakes are made and improving the hand eye coordination and psychomotor skills of the student, which are used in applied lessons, are not fully provided by distance education ." expressed in their own words.

Table 7. Students' views on learning processes in emergency distance education

Opinion Titles	f
A. Positive opinions of students	
Giving students the opportunity to progress on their own	one
Opportunity to repeat the content on my site as much as desired	
Reinforcing the content by repeating it as much as it wants	
Achieving the objectives of the lesson	
Rich in content	
Considering students with different learning styles	

Statistical control of learning	
Access to content appropriate to the level	
B. Negative opinions of students	
Little attendance at classes	6
Low motivation of students	6
Insufficient EBA TV for metacognitive learning	one
Anxiety about falling behind in education in students who cannot access	one
EBA TV broadcasts do not offer content that will appeal to the metacognitive learning level	
Insufficient duration of EBA live lessons and lessons offered on EBA TV	
Intense course content offered on EBA TV	
Failure to implement an individualized education plan for mainstreaming students	
Low digital literacy of students	
Insufficient vocational course content offered	2
Less intelligibility in vocational courses	4
The repulsiveness of the compulsory realization of distance education	one
Attendance-absence does not affect grade retention	one

When the students' opinions are examined in general terms, it is seen that the negative features of emergency distance education for the students studying in vocational high schools come to the fore. When Table 7. is examined, it is seen that six students stated that their participation was low and their motivation was low. Likewise, the low level of intelligibility in vocational courses was marked by four students. Looking at Table 5, it is understood that the students did not characterize this situation negatively, by marking a student that it was not used for absenteeism or passing, which is a negative situation. Some student comments are given below.

EÖ4: "Because we faced such a situation, first of all, there was a process of getting used to it, both on the teacher's side and on the student's side. Students were inclined to learn something from a distance due to watching lesson videos on the internet, but they had difficulty in adapting to this subject completely because they could not interact with a teacher face-to-face by staying away from the school environment in the classroom environment. It is not possible to get as much efficiency as the face-to-face lessons at school. Because in the school environment, students have the opportunity to socialize with each other. By doing activities during recess, they can clear their heads and adapt to the lessons more. They can find the opportunity to have private face-to-face meetings with the teachers and solve their problems more easily, but in distance education, it is not possible to get enough efficiency by always staying in front of the screen until the end of the day. Unfortunately, there is not much to do in between classes, unfortunately, in the home environment. After a while,

the student gets bored with this situation and never attends the classes." He stated that he could not get as much efficiency from the lessons as at school, that the contents were not adequately examined by the students, and that there was nothing more to do than the lack of movement opportunities at home.

EÖ4: "Distance education is insufficient for me, the department I studied mainly includes application activities and I understand only the theoretical part of the course I want to do in distance education and I cannot put it into practice. These and similar problems make it difficult for me to learn this profession." He stated that he could not learn his profession because of the fact that there was no practice in the courses for the department based mainly on practice in distance education.

KÖ3: "There is no problem for me in general, we teach in an understandable way with our teachers who are trying very hard. Prolonging the process is not suitable for me because I do not understand how the course will be taught when the topics are over." He stated that he attended the classes with his words and did not have many complaints, and that the teachers tried to be useful to the students in this process. He then said that he had no idea what the lessons would be like if the process continued to prolong.

EÖ2: "I can't say that I think very positively about their education. I never understand the efficiency of the lessons taught in the classroom. I think being able to move freely is an advantage." While expressing that he did not understand the lessons at the class level he was in, they were in front of the screen for hours and could not understand the lessons, he stated that being at home in emergency distance education allowed them to attend classes without wasting time on the road.

When the opinions of teachers and students are considered together, the difficulties in applied lessons appear more and more because of the reasons such as the teachers complaining about the emergency distance education in general, not being efficient enough in the lessons, the students' lack of motivation and absenteeism, etc. What kind of problems did teachers and students face in emergency distance education In this section, the difficulties experienced by teachers and students in emergency distance education are discussed.

The problems experienced by teachers and students were examined. Obtained results are grouped under five headings.

Table 8. Problems faced by teachers in the emergency distance education process

Problem Titles	f
A. Problems caused by the teacher	
Lack of necessary knowledge and skills of teachers in distance education lectures	one
Using lecture method in live lessons	3
Teachers' lack of professional satisfaction	2
B. Problems caused by the student	
Less participation in class	8
Student reluctance to lessons	6
Students being passive in lessons	4
Psychological problems experienced by students	one
C. Problems with access and infrastructure	
internet shortage	6
Lack of necessary tools for the lesson (tablet, computer, phone)	7
Dropping out of class for various reasons	5
Not being able to benefit from EBA TV	one
D. Problems arising from EBA, EBA TV and EBA live course environments	
Limited student-teacher interaction	3
Unable to watch after live lessons	5
Conflict of live classes held in EBA TV and EBA	2
E. Management related problems	
No effect of distance education on course grades	3
No obligation to attend class	3

When Table 8 is examined, it is clearly seen that teachers experience many difficulties in distance education. Teachers have used many methods in order to carry out the emergency distance education process in a healthy way and to motivate their students. In Table 5.a, the problems experienced by teachers are discussed under five headings. When the table is examined, it is seen that all teachers agree on the lack of student participation in the lessons. 87.5% of the teachers marked the item not having the necessary equipment for participation in the lesson. Internet access problem and student reluctance item was marked by 75% of the teachers. Not being able to watch again after the live lessons and being disconnected from the lesson due to internet connection were marked by 62.5% of the teachers. By looking at the table, the opinions that can represent the general teacher's views are given below. According to BC4, “Many of our students did not have computers and tablets, and many of the teachers had computer and internet problems. Especially the teachers who had to do live lessons with their own child(s) at the same time had computer problems. Many teachers had to buy computers.

Many teachers had to do their lessons from mobile phones. Internet spending of teachers has increased. We had difficulties in getting our students to attend live classes. We could not get enough support from the parents to ensure that our students participate in live lessons." While GO3 expressed his views, "When the system was first used, there were some difficulties due to using the system. But these problems were quickly resolved. However, the lack of interaction in the classroom in distance education has led the teacher to the lecture method. The excuses from the students that most of the time they did not get an answer even though they were promised, my camera is broken or my microphone is broken, has led the teacher to the straight lecture method over time. This causes the teacher to perform an action such as presenting a news rather than giving a lecture. The system also has disadvantages. First of all, the infrastructure problem has not yet been fully resolved. Problems such as frequent breaks in EBA and inability to process due to density can still be experienced. In addition, EBA's transfer of students and teachers to a different platform other than the EBA system when the live lessons will be held is a separate problem. Not being able to attend classes due to data consumption due to intensive internet use is another problem. In addition, the fact that not every student has the necessary device to enter the classes has caused the students to break away from education in this process. "Denotes with expressions.

Table 9. Problems faced by students in the emergency distance education process

Problems	f
A. Problems caused by the teacher	
Lack of necessary knowledge and skills of teachers in distance education lectures	
Using lecture method in live lessons	one
Teachers' lack of professional satisfaction	
B. Problems caused by the student	
Less participation in class	one
Student reluctance to lessons	4
Students being passive in lessons	4
Psychological problems experienced by students	2
C. Problems with access and infrastructure	
Internet shortage	8
Lack of necessary tools for the lesson (tablet, computer, phone)	2
Dropping out of class for various reasons	5
Not being able to benefit from EBA TV	
D. Problems arising from EBA, EBA TV and EBA live course environments	
Limited student-teacher interaction	5
Unable to watch after live lessons	

Conflict of live classes held in EBA TV and EBA	
E. Management related problems	
No effect of distance education on course grades	
No obligation to attend class	

When Table 9 is examined, it is seen that the situation that all students complain about is internet access problem. 62.5% of the students stated that they complained about being disconnected from the course due to limited interaction and power cuts or internet problems. Table 6.b. When examined, 50% of the students stated that they had to be passive in the lessons and this situation caused them to be reluctant to attend the lesson over time. Some of the problems faced by the students in the emergency distance education written by their own words are given.

EÖ4: "Even though most of the students have internet, computer and phone, some of them do not have them at all. Those who do are not able to attend the classes. Because there are families with more than one child. In this case, one computer or one tablet was not enough. There were those who did not enter knowingly, because the majority of distance education was not understood. Reasons such as connection problems caused by the teacher or student, inadequate teaching opportunities, or loss of time until the visual or sound problems that occur during the lesson are resolved can be written as pioneers.

The male student, with his explanation of four, states that the computers at home are not enough because some families have many children, and that as a result of this, the attendance to the lessons is low, and he also states that the most common problem he encounters is the connection problems of emergency distance education.

EÖ3: "Since this process is newer, corrections are made in the system, but despite this, we sometimes encounter various problems in the lessons. The most common of these problems is the sound problem. In some cases, the sound is very low and we cannot listen to the lesson because we cannot hear the teacher clearly.

We drop out of the course due to the internet and we are having difficulty connecting to the course again. Such problems can be eliminated, but I do not think that it will be a useful and useful course like face-to-face training.

Three male students stated that they encountered a lot of problems in distance education, most often they had sound problems during the lesson, could not hear what the teacher said, and as a result, he did not understand the distance education lessons, and mentioned that the process was inefficient for him.

He also emphasized that it is difficult to connect when they experience falling out during the lesson. In his statements, he stated that he thought that distance education, which is his personal opinion, would never support face-to-face education and would not be beneficial.

KÖ1: "The number of courses and the fact that all these courses are at the head of the technological device are the things that tire me the most. In addition, the fact that all vocational courses are taught in one day makes it difficult for me to concentrate and throws us in the waiting room when we enter the course, and sometimes we stay in the waiting room for a long time because our teachers do not see it.

A female student has to wait in the waiting room for long periods of time because the program used by the teachers is defined in the waiting room when she has a technical problem in entering the class or when she is late. means staying.

When the opinions of the teachers and students are evaluated together, the other items of the students that they gave similar answers to the items such as Internet access problem, Student reluctance, Low student participation, Being disconnected from the course due to electricity or internet connection, Limited interaction and lack of tools such as computers, tablets, smartphones necessary for participation in the course. It is understood that they only look at the process as a student, not in general.

What are the problems you encounter in applied workshop lessons? With this title, an examination has been made in line with the principles of teachers' and students' satisfaction theory and innovation theory. To what extent the needs in student-centered education can be met, what kind of problems are encountered in the 80% practice-oriented department courses, their perspectives on the courses and the advantages and disadvantages of the system are examined.

Table 10. Problems faced by teachers in applied workshop lessons

thoughts	f
A. Teachers' positive thoughts about applied courses in emergency distance education	
It was ensured that the education continued with the distance education that we had to go through.	8
In the hybrid system, the theoretical knowledge can be given remotely and the application can be realized face-to-face.	4
B. Negative thoughts of teachers about applied courses in emergency distance education	
Skill acquisitions of applied workshop lessons could not be achieved in remote live lessons.	8
The part planned to be processed in the face-to-face workshop was not sufficient.	4
It is not possible to hold hands-on workshop lessons remotely.	8
The equipment and mechanisms in the workshop should be used by the students.	5
Since the show-and-make method cannot be applied, only distance education is insufficient.	5

Practical workshop lessons should be held face to face and in a workshop environment, except for mandatory cases.	8
Videos and animations in emergency distance education did not make the lesson understandable	7
The subjects of working according to the order of operation, clean working habits, complying with occupational safety could not be achieved.	7
It cannot be said that the EBA system is suitable for applied courses.	6
If it was possible to give theoretical courses remotely, it cannot be said for applied courses.	8

When we look at Table 10, it is seen that the teachers agree that it is almost impossible to provide permanent learning unless the student is involved in the implementation process, and that it is not possible to conduct the workshop lessons, which are obligatory in general terms . As a red-skinned proverb says: "If you tell me, I can forget, if you show me I can remember, if you involve me, I will never forget."

Although all teachers are of the opinion that education continues without interruption during the Covid-19 Pandemic process, skill acquisition of applied workshop lessons in remote live lessons could not be achieved 100% with the opinion of teachers, It is not possible to conduct practical workshop lessons remotely, Except for mandatory cases, practical workshop lessons are face-to-face and workshop It is seen that the teachers agree with the topics that should be done in the environment. 87.5% of them stated that videos and animations in emergency distance education could not be understood and the subjects of working according to the order of operation, clean working habits, complying with work safety were not provided. 75% said that the EBA system was not suitable for applied courses, while 67.5% said that they state that since the show-and-make method cannot be applied, only distance education is insufficient, and that the lesson will not reach the target behaviors unless the equipment and mechanisms in the workshop are used one-on-one by the students. During the pandemic, during the period when the practice of face-to-face education in vocational courses in vocational high schools was introduced from time to time, 50% of the teachers who filled out the interview form stated that the part reserved for face-to-face in the planning of vocational lessons was not sufficient. In addition, 50% of the teachers are of the opinion that they can benefit from the hybrid education system in applied courses. Some of the teacher's views on the Covid-19 Pandemic process are as follows.

MÖ4 stated that the gains in distance education could not be achieved in the applied workshop courses, and that the time allocated for applied courses in vocational high schools was not sufficient at the time of the transition to face-to-face education: Skill acquisitions remained incomplete due to insufficient time, low student participation, interruption of face-to-face education, and insufficient

training materials in our workshops in the processes where the workshop lessons were taught face-to-face." expressed as.

MÖ2, who said that it is not possible to conduct applied courses remotely, and that if necessary, the remote application part of the toric part can be done face-to-face by using the hybrid education model, BC2 "It is not possible to conduct applied workshop lessons remotely. However, in the hybrid system, the theoretical knowledge must be given remotely and the application must be done face to face. The equipment and mechanisms in the workshop should be used by the students one-on-one. Distance education alone is insufficient, as it is an indispensable teaching method in the workshop environment. Practical workshop lessons should be conducted face-to-face and in a workshop environment, except for obligatory cases. expressed his thoughts.

MÖ3 stated that occupational safety rules and practices, which are indispensable for individuals working in technical business lines, cannot be assimilated: "Workshop practices should be done one-on-one with students. While the student is doing the work, the teacher should observe the mistake and immediately correct it. In the distance education, the education continued with videos and animations. In the distance trainings, it was not possible to develop the habit of improving dexterity, acquiring the habit of working according to the order of operations, acquiring the habit of working cleanly, and complying with the occupational safety. The availability of materials and the absence of special teams at home weakened the practical training."

MÖ1 stated that many modules written to explain the lessons can be accessed through SVET, but there are no videos and visuals that we can use to show them for practical lessons : The learning environment was affected due to the lack of availability and low suitability for the student. He expressed his thoughts.

GÖ3: "Applied workshop lessons are the lessons that should be done face-to-face in a workshop environment, basically. It is not suitable for the distance education system. Because many applications in many areas are impossible to do in the home environment.
Many applications that can be done cannot be done due to occupational health and safety. For this reason, most of the applications are tried to be closed by explaining the application or by making the videos about the application to be watched. However, this affects the learning processes negatively." He expressed it in detail with his statements.

Expressing that students have learning difficulties when we teach practical courses via distance education, GÖ4: "It is even more difficult to give applied courses in distance education compared to theoretical courses. Especially giving vocational courses remotely creates learning difficulties for students." It is clearly understood that the teachers could not achieve the target

behaviors in the applied courses in distance education and that they did not receive professional satisfaction from the process in general terms.

In general, it is seen that distance education is beneficial and even suitable for some course structures in order to prevent students from being completely disconnected from education life in the Covid-19 Pandemic epidemic. However, it is seen that distance education is not useful in vocational and workshop courses that require technical explanation, demonstration and immediate feedback and correction. Only the theoretical part of the lectures was given, and the application parts were tried to be assimilated with videos and visuals.

In the week after any applied lesson, no answers were received to the questions about the target behaviors of the students.

These and similar results show us that distance education is not suitable for the general structure of applied courses. What are the problems students encounter in applied workshop lessons? Under this topic, it has been examined whether vocational high school students can understand the lesson and the subjects in the applied courses.

Table 11. Problems faced by students in applied workshop lessons

thoughts	f
A. Positive thoughts of students about applied courses in emergency distance education	
It was ensured that the education continued with the distance education that we had to go through.	3
In the hybrid system, the theoretical knowledge can be given remotely and the application can be realized face-to-face.	5
B. Negative thoughts of students about applied courses in emergency distance education	
Skill acquisitions of applied workshop lessons could not be achieved in remote live lessons.	5
The part planned to be processed in the face-to-face workshop was not sufficient.	3
It is not possible to hold hands-on workshop lessons remotely.	7
The equipment and mechanisms in the workshop should be used by the students.	3
Since the show-and-make method cannot be applied, only distance education is insufficient.	5
Practical workshop lessons should be held face to face and in a workshop environment, except for mandatory cases.	6
Videos and animations in emergency distance education did not make the lesson understandable	6
The subjects of working according to the order of operation, clean working habits, complying with occupational safety could not be achieved.	4
It cannot be said that the EBA system is suitable for applied courses.	one
If it was possible to give theoretical courses remotely, it cannot be said for applied courses.	6

When Table 11. is examined, it is understood from the student interview form answers that 87.5% of the students are not satisfied with the applied courses and do not attend the face-to-face education, although the students do not give as detailed answers as the teachers. While it is 87.5% that it is not possible to conduct applied workshop lessons remotely, it is the first with 87.5%, although it is possible to give theoretical lessons remotely, it cannot be said for applied lessons.

Videos and animations in emergency distance education do not make the lesson understandable, Applied workshop lessons should be done face-to-face and in the workshop environment, except for mandatory cases 75%, Only distance education is insufficient because the show-and-show method cannot be applied, It is seen that the subjects of working in order of 5, clean working habits, complying with occupational safety were not achieved 50%, The equipment and mechanisms in the workshop should be used by the students one-to-one, The part planned to be processed in the face-to-face workshop was not enough.

EÖ4, who mentioned that it would be beneficial by touching and using the tools and making the work and operations live, said: "Since there is an interaction with some tools and equipment by touching and seeing in the workshop lessons, the topics covered are more memorable than the lessons taught in a normal classroom. However, since there is no such opportunity in distance education, informative videos about the topics covered are watched and pictures are shown on the internet, but of course these are insufficient. It would be better if the workshop lessons were taught face to face." expressed his thoughts.

KÖ1, on the other hand, said that in some lessons in distance education, the teacher tried to practice in front of the camera, but the sound and image disappeared from the screen freezes, and the teacher could show one-to-one in the face-to-face workshop lessons. "In the lessons where the camera must be turned on, the camera being blurry, the internet connection being disconnected or the teacher's camera not being seen clearly makes it difficult for me to understand the lesson better. When we learn face-to-face, the teacher explains and applies it one by one, while in distance education, when a student cannot understand something, the teacher cannot explain it to that student in detail because the time is not enough, so that student can fall behind in the lesson." explained as.

EÖ3 tried to emphasize the extent of the application in the department he studied by giving examples about the field he studied in distance education. EÖ3: "Even though the maritime profession sounds good, it is a very dangerous profession that requires great responsibility and never forgives mistakes. For this reason, the first lesson taught to students in maritime schools is "Marine safety and security". In this course, students learn how to intervene in case of possible problems on the ship and learn how to use the emergency equipment on the ship. This issue is so important that a seafarer who

embarks on the ship re-enacts these unusual problems while the ship is cruising, and the worst-case scenario that can safely occur on the ship is reenacted. The crew on board intervenes in this worst-case scenario and the saddle is ready if such a situation is encountered in the future. We call this worst case scenario "ROLE DRESSING". Role drills are held at periodic intervals on the ship to prepare the sailor's muscle memory for the disaster response phase. We could not see any of these trainings in distance education and we could not implement them. In the same way, since we cannot disassemble and install machine parts in practice courses such as ship machinery course, we have always seen such topics in theory as the protection of the part after disassembly, how the welding is done, the electrode angle while welding, and how we should tighten it and how it should be disassembled. No matter how much a person says that he has read and studied and understood, his dexterity will never develop without practical training." expressed with examples.

When we look at the views of both teachers and students, there is a general idea that distance education cannot be successful in applied courses. Teachers, who are one-to-one practitioners of the subject, express that they cannot get efficiency in the applied lessons and that the lessons are understood to a certain extent on the subjects with theoretical weight, while the general thoughts of the students are in line with the teachers and they cannot understand the lessons and therefore they cannot learn. While teachers state that distance education and its tools may be suitable for positive sciences, social sciences and language teaching, students state that the subject is not fully settled since they do not do the procedures themselves when the applied lesson is taught through video and pictures in applied lessons.

The teachers' recommendations for improving the activities of distance education ? In this section, the solutions of teachers for education-teaching activities in emergency distance education are examined. The collected data were written in four sub-headings.

Table 12. Recommendations of teachers to improve distance education activities

Suggestions	f
A. Recommendations for the professional development of teachers	
Teachers should be given in-service training on how to do distance education.	3
Teachers should be given in-service training on using distance education technologies.	7
Teachers should receive in-service training for effective communication	one
Volunteer teachers can be given in-service training to produce e-content.	2
B. Recommendations to increase class participation	
Support service should be provided to all stakeholders	4
Before the lesson, videos on the use of distance education tools should be shared.	one

Students should be given individual feedback	one
Learners who actively participate should be rewarded	3
Teacher should be able to communicate well with students	2
C. Suggestions to increase engagement in the lesson	
Students should be asked to comment on the subject.	one
A discussion environment should be created in live lessons.	one
D. Management recommendations	
Free and unlimited internet support should be provided to teachers and learners.	6
Social justice and equality of opportunity and opportunity should be ensured in distance education.	6
Content should be updated and improved	4
Tablets etc. for students to use the internet. tools should be given free of charge	4
A technical support unit should be established for technical problems experienced.	2
Live lesson hours should be made flexible and the opportunity to watch again should be given.	one
Service points should be given to distance education teachers.	3
Additional tuition fees should be given to distance education teachers.	2
EBA contents should be collected on separate servers as primary, secondary and high school	one
Local and national live lesson tools should be used for security problems.	one

Free internet should be provided to both teachers and students in live lessons, which are lesson applications. 50% of them think that 87.5% of them should be given training on the use of distance education technologies in order not to experience system-related problems in emergency distance education. In general, when we look at the opinions of the teachers, they state that the idea that it is possible to be successful in distance education in theoretical courses is dominant, but for applied courses, distance education is not suitable for applied courses in distance education, both in terms of distance education content and because it is very difficult to understand the subjects without doing one-on-one. Some teacher opinions;

Simulations to ensure at least some of the skill acquisition in applied courses, to make it compulsory to attend classes, to make it difficult to pass the class, to create an infrastructure where exams can be conducted remotely." Providing computers and internet to four students and teachers without exception, allocating sufficient budget for distance education to schools, having simulation applications at school to increase the quality of teaching in applied courses, establishing the infrastructure of exam applications to measure students, and making it difficult to pass classes and courses to increase the quality of teaching means necessary.

GÖ3: "The financial situation of teachers who prepare content for applied education should be formally regulated. Since this situation is imposed on teachers in schools as an act they are obliged

to do, it is not efficient because teachers try to spare time both for the lessons in the school and to produce these extra contents. Teachers who produce content should only be assigned to this subject in this process and should not lose additional lessons. Otherwise, there will be reluctance from the start. The problem of absenteeism in distance education should be resolved and should not be left to the initiative of the student or parent. For this, internet and device problems must be solved first." Three deck teachers stated that there is an extra increase in the burden of distance education, this situation is imposed as if they have to do it, and distance education content regulations should be formally regulated. He is of the opinion that in order to continue the lessons in distance education, the necessary tools should be provided to the students, and the internet problems should be solved and then the absenteeism problem should be resolved and the students should be able to continue the lessons.

BC3: "It seems inevitable that education should be done in a hybrid way from school and distance. At the end of the training given, students must take the exam and receive a training certificate. These certificates should be requested from them at the time of employment. The order of passing and failing a class should be changed. Students should rate the teacher they have trained and the teacher should earn income at the rate of this score." In his sentences, he states that hybrid education is inevitable in the coming years, the importance of regulating the pass-fail system and that students should be given certificates after the courses they take.

BC2: "First of all, a system that can be accessed by every student without exception should be established and equipment support should be provided to students. Technological investments must be made. Teacher training should be continued and increased. Teachers should be provided with resources for the purchase of distance education equipment or tax exemption should be brought (Computer, microphone, camera, etc.)" thinks that a system where transportation will not be interrupted, teachers should be provided with a separate source for distance education equipment or, if not, tax exemption should be provided to relieve teacher budgets . The deck teacher who had a different point of view; In addition to system improvements such as easy and free transportation, strong infrastructure, easy interface, augmented reality has been proposed.

When we look at the opinions of teachers in general, it is understood from the general thoughts that distance education contains many problems and the reason for this is that it has to be put into practice urgently due to the Covid-19 Pandemic. The practice of distance education in vocational high schools appears to be the general opinion of teachers that they cannot be productive in lessons. Although some success can be achieved in theoretical courses in vocational high schools, they argue that simulation applications, which are difficult to achieve in applied courses, will only increase the

intelligibility a little bit. Another issue is the increase in the workload of the teachers who participated in the interview. The fact that vocational high schools have to do both face-to-face and distance lessons during the pandemic process has worn out the vocational teachers in the process.

Table 13 . Recommendations of students to improve their distance education activities

Suggestions	f
A. Recommendations for the professional development of teachers	
Teachers should be given in-service training on how to do distance education.	
Teachers should be given in-service training on using distance education technologies.	
Teachers should receive in-service training for effective communication	
Volunteer teachers can be given in-service training to produce e-content.	
B. Recommendations to increase class participation	
Support service should be provided to all stakeholders	
Before the lesson, videos on the use of distance education tools should be shared.	
Students should be given individual feedback	one
Learners who actively participate should be rewarded	one
Teacher should be able to communicate well with students	2
C. Suggestions to increase engagement in the lesson	
Students should be asked to comment on the subject.	one
A discussion environment should be created in live lessons.	one
D. Management recommendations	
Free and unlimited internet support should be provided to teachers and learners.	6
Social justice and equality of opportunity and opportunity should be ensured in distance education.	4
Content should be updated and improved	4
Tablets etc. for students and teachers to use the internet. tools should be given free of charge	2
A technical support unit should be established for technical problems experienced.	2
Live lesson hours should be made flexible and the opportunity to watch again should be given.	2
Service points should be given to distance education teachers.	
Additional tuition fees should be given to distance education teachers.	
EBA contents should be collected on separate servers as primary, secondary and high school	
Local and national live lesson tools should be used for security problems.	

Table 13. When we look at the recommendations of the students to improve distance education activities, it is seen that 75% of them say that the internet, which is of great importance in our lives, should be assured to teachers and students free of charge. It is seen that 50% of the participating students have the idea that social justice and equality of opportunity and opportunity should be provided in distance education and the contents should be updated and developed. Students also stated

that they do not have the chance to watch the live lessons again, that free tablets and tools should be given to both the teacher and the student, and that it would be advantageous to establish a support unit for the problems they experienced. Opinions about improving emergency distance education who filled out the semi-structured interview form;

Teachers should be provided with equipment such as pens, touchpads, which are necessary for teachers to explain the lessons more easily and without difficulty, so that teachers can better explain their lessons in a more understandable way and focus the students' attention on the lesson. In addition, students who actively participate should be rewarded in order to encourage students to the lessons." In his words, he thinks that both the teacher and the students have difficulties in obtaining the necessary tools in distance education and that a solution should be found, and he also explains that this is necessary in order to focus the student on the lesson.

EÖ3: "First of all , all students who are involved in distance education should be identified and students who do not have internet at home or who cannot get internet at home should be provided with internet and a mobile device where they can enter the course. Vocational students should be provided with opportunities for practical training. Videos related to practice lessons should be uploaded to the EBA platform." In his explanation, he stated above his views on identifying the students who do not have the opportunity, providing the necessary tools and internet to these students, improving the eba platform and making it more efficient, and creating opportunities for vocational practice courses.

KÖ3: "EBA application needs to be updated and improved, opening schools within the possibilities , providing useful internet for our friends who do not have enough internet, making exams easier." The female student stated that it would be good to open three schools within the possibilities, to solve the problems of students with internet problems, and to improve the system for size problems.

KÖ1: "The fact that the breaks are short distracts me when I go to class and I have to look at the time all the time. I think to solve this problem, if we do a break for 20-25 minutes, at least we will have a break to eat, and if we start the lessons at 08:10 as before, we will finish earlier. I also think that we should remove the waiting room when we enter the class because sometimes there are many times when the teachers can't take the students because they are too busy, and lastly, if we can record the lesson so that you can watch the lesson later, it would be very helpful in studying for the exams." With his thoughts, he expressed that he could not get enough rest between lessons, the lessons ended late, they passed the lesson in the waiting room if the teacher did not notice, and he could not watch

the live lessons later in the EBA system, if the recording was made, the students would be able to understand the lessons better, based on their experiences in the process.

Again, the thoughts of a male student who has a different opinion; Let the course subjects be lighter and they should add our summer vacation to the school and reduce the course hours." is in the form.

Looking at the general student comments above, it is understood that the internet problem is frequently experienced in the EBA platform, the infrastructure services are not good enough, the students do not have enough equipment or internet to attend the classes, and the students have difficulties in the distance education process.

The issues that both teachers and students meet on a common denominator by looking at tables 8 and 9 . It can be said that increasing the incentive to the lesson by taking attendance and absenteeism is the common opinion of the teachers and students.

3.2. Analytical Hierarchy Process

In this study, it has been tried to determine which of the distance education and face-to-face education that we have had the most during the pandemic period is more beneficial and beneficial to the students by using the AHP method. In this, distance education and face-to-face education were compared by using five criteria determined by taking expert opinions. Which education system can be more beneficial to students? answer to the question searched. The implementation phase was carried out step by step as follows.

3.3. Evaluation of Education Systems with Semi-Structured Interview Form

This evaluation, The semi-structured interview form questions, which were prepared by taking expert opinion, were filled out by eight teachers and eight students, and the five criteria that are important in the comparison of education systems were taken into consideration and the education system was determined from the AHP application. Evaluation with Analytical Hierarchy Process Model by Creating Evaluation Criteria : This at the stage, 5 question evaluation criteria to create purpose with classified and five main criteria were determined. The importance of these criteria for the education system to determine for in education and training active duty making 8 A semi-structured interview form study was conducted with the participation of an expert and the participation of eight students who were affected in the education-teaching process, with the contribution of an expert psychologist experienced in the education system. Significance levels according to the results of the semi-structured interview form / criteria weights as indicated in Table 14 determined.

Table 14. Criterion Weights

criteria	Criterion Weights
Learning Level	7
Access to the System	9
Teacher Satisfaction	3
Training Cost	5
Social development and Interaction	7

The scoring of alternative systems in terms of criteria is also the scoring created in the first study, each One criterion taking expert opinion for found and It is given in Table15.

Table 15. Criterion Weights Remote/Face to Face

	Criterion Weights	
Criteria	Afar	Face to face
Learning Level	3.00	5.00
Access to the System	2.70	3.00
Teacher Satisfaction	2.00	4.00
Training Cost	5.00	3.00
Social development and Interaction	2.30	4.50

These obtained data were evaluated with the Analytical Hierarchy Process Model.

My name one: Decision of your problem definition, Hierarchical structure Establishment: Aim, main and sub-criteria and solution alternatives Decision Problem: "What education system Is it more beneficial to students?

Purpose: What training to use system will be more efficient. decision to give

Alternatives: Face-to-face education – Distance education

Table 16. Main Criteria:

Learning Level
Access to the System
Teacher Satisfaction
Training Cost
Social development and Interaction

Step 2: Comparison matrix between criteria is created as in Table 17:

Table 17. Comparison Matrix between Criteria

		A1	A2	A3	A4	A5
		Learning Level	Access to the System	Teacher Satisfaction	Training Cost	Social development and Interaction
A1	Learning Level	1.00	0.78	2.33	1.40	1.00
A2	Access to the System	1.29	1.00	3.00	1.80	1.29
A3	Teacher Satisfaction	0.43	0.33	1.00	0.60	0.43
A4	Training Cost	0.71	0.56	1.67	1.00	0.71
A5	Social development and Interaction	1.00	0.78	2.33	1.40	1.00
	TOTAL	4.43	3.44	10.33	6.20	4.43

Step 3: The importance values of the criteria were determined as percentages, and the normalization of the matrix was provided as in Table 18. Column values are divided by the column total. The average criterion weight is found for each row . And Tablo 19 shows the normalization post lower criterion weights.

Table 18. Average Criterion Weight Matrix

					W
0.23	0.23	0.23	0.23	0.23	0.23
0.29	0.29	0.29	0.29	0.29	0.29
0.10	0.10	0.10	0.10	0.10	0.10
0.16	0.16	0.16	0.16	0.16	0.16
0.23	0.23	0.23	0.23	0.23	0.23

Table 19. Normalization Post Lower Criterion Weight Table

Learning Level						
	Afar	Face to face		Afar	Face to face	W
Afar	1.00	0.60		0.38	0.38	0.38
Face to face	1.67	1.00		0.63	0.63	0.63
	2.67	1.60				
Access						
	Afar	Face to face		Afar	Face to face	W
Afar	1.00	0.90		0.47	0.47	0.47
Face to face	1.11	1.00		0.53	0.53	0.53
	2.11	1.90				

Teacher's Satisfaction						
	Afar	Face to face		Afar	Face to face	W
Afar	1.00	0.50		0.33	0.33	0.33
Face to face	2.00	1.00		0.67	0.67	0.67
	3.00	1.50				
Education cost						
	Afar	Face to face		Afar	Face to face	W
Afar	1.00	1.67		0.63	0.63	0.63
Face to face	0.60	1.00		0.38	0.38	0.38
	1.60	2.67				
Social Development						
	Afar	Face to face		Afar	Face to face	W
Afar	1.00	0.51		0.34	0.34	0.34
Face to face	1.96	1.00		0.66	0.66	0.66
	2.96	1.51				

The final weight ratios that will inform us for the decision by multiplying the weight ratios of the main criteria with the weight ratios of the alternatives are shown in Table 20 was obtained as follows :

Table 20. Final Weight Ratios Table

	W1 0.23	W2 0.29	W3 0.10	W4 0.16	W5 0.23		
	A1	A2	A3	A4	A5		W
						--	
Remote Eg.	0,3750	0,473	0,3333	0,6200	0,3382	>	0.40
						--	
Face to face Eg.	0,6250	0,526	0,6667	0,3800	0,6618	>	0.60

Distance education system yielded 40% and Face-to-face education system yielded 60% results. It is seen that Face-to-face education should be chosen in the selection of the education system.

4. Conclusion, Discussion and Suggestions

Considering both the phenomangological approach and the AHP application result, it is seen that the face-to-face education system is a system that ensures permanent learning and higher efficiency from education. can be said as a result.

As a result of the application studies, it was seen that the students expressed themselves more easily in face-to-face education, and the students remained more silent in distance education. Although distance education is necessary for some courses and for some situations, it is seen once again with the AHP application that face-to-face education is important so that the quality and efficiency of education does not decrease and the motivation of students does not decrease. When comparing the two education systems, it is understood that the students do not have difficulty in expressing themselves as in the distance education system, where it is important to be able to ask questions face-to-face, interact with the teacher and interact with their friends, socialize and gain target behaviors.

Face- to-face education is important in terms of acquiring target behaviors at secondary and lower levels. Distance education is more suitable for in-service training, adult courses, courses suitable for undergraduate education, and postgraduate education. In terms of both studies carried out in applied courses in vocational high schools, it is seen that face-to-face education is especially important in applied courses.

As a result of the studies and based on professional experience, it is seen that the learning is permanent and the motivation of the students towards the lesson is provided more easily with face-to-face education. However, considering the developing technology and the conditions of Turkey, it should not be forgotten that the distance education system is a good alternative for the continuation of education and training when necessary.

4.1. Suggestions

This research was created by conducting a semi-interview form with the participation of eight vocational teachers in applied courses in vocational high schools, two students from each grade level and eight students among the educational institutions that switched to distance education during the Covid-19 Pandemic epidemic period. The research was conducted in a vocational high school in Istanbul. In order to generalize the results, it can be done again by increasing the number of schools and the number of people participating in the research.

In order to ensure that the data obtained by looking at the results of the research are healthier, an in-depth and comprehensive research can be applied to many participants, together with

quantitative research methods and test methods whose reliability is calculated by including them in schools across the province or in schools across the country.

A new original study, named Perspectives of teachers and students, on the teaching of applied and cultural courses in distance education in high schools can be created. General recommendations in the light of literature review and research results;

- Teachers who teach live lessons may also be given additional lesson fees.
- Teachers who are doing emergency distance education can also be given a service point.
- Flexibility can be provided by leaving the live lesson program to the teacher.
- In order to increase student participation in the live lesson, the number of students who attend the lessons can be increased by taking attendance and absenteeism.
- Domestic national internet tools and programs can be used to prevent security vulnerabilities.
- Instead of the EBA platform being a whole, its servers can be gathered on separate servers, such as primary school, secondary school, and high school.
- Efforts can be made to ensure social justice, equality of opportunity and opportunity so that everyone can benefit from distance education equally.
- Trainings that introduce the comprehensive system can be given to those who will meet with distance education for the first time. By expanding the EBA platform, the scope of educational content and educational social activities can be increased.
- Vocational course contents and training videos prepared according to the order of attainment can be made in which the EBA platform can be used effectively in applied courses.
- Augmented reality can be used to increase the quality and understanding of the applied lessons by the student.
- Simulators that can be used in situations where it is dangerous to practice or face to face .
- The live lessons can be recorded for students to watch again.
- Free internet can be provided to teachers and students, which are indispensable parts of the education system, in order to continue their education without interruption.
- Students and even teachers can be provided with tools for live distance education free of charge.
- When the Pandemic Period is over, the hybrid education system, which includes both face-to-face and distance education, can be used.
- Course contents and gains can be rearranged and made suitable for distance education.
- It can be an alternative for courses that can be done with distance education by making course analysis.

- By making the necessary legal arrangements, distance education systems can be established for high school students who cannot continue formal education for any reason.
- Receiving the ideas of teachers, who are the managers of the process, for new technologies related to the implementation of distance education systems
- On days when face-to-face education is held, teachers should not be given distance education courses separately.
- Implementation of the same applications in the whole country, not at the discretion of the people in emergency distance education applications.
- In the periods or days when distance education is applied, teachers should not fill in the class book.
- In live lessons taught over the EBA system, the system should be able to take attendance by itself.

Statement of Research and Publication Ethics

The authors have prepared the study in accordance with publication ethics and all responsibility belongs to them.

Authors' Contribution Rates

The authors contributed equally to the study.

Thanks

To the valuable teachers and dear students of Hacı Rahime Ulusoy Vocational and Technical Anatolian High School, who voluntarily participated in the study, and provided the data to be formed, our valuable teacher, Uzm. We would like to thank the psychologist Esen YILDIRIM USTA.

Statement of Interest

Researchers, while preparing the research; They confirm that there is no conflict of interest during the data collection, interpretation of the results and writing of the article.

References

Ağır, F. & Okçu, A., (2006). İlköğretimde Çalışan Öğretmenlerin İnternet Kullanımına Karşı Tutumlarının Belirlenmesi,. *7. Fen Bilimleri ve Matematik Eğitimi Kongresi Özetler Kitabı*,288, Gazi Üniversitesi, Ankara

Ağır, F., (2007). "*Özel Okullarda ve Devlet Okullarında Çalışan İlköğretim Öğretmenlerinin Uzaktan Eğitime Karşı Tutumlarının Belirlenmesi*", Balıkesir Üniversitesi Fen Bilimleri Enstitüsü Yayınlanmamış Yüksek Lisans Tezi, Balıkesir

Ateş, A. & Altun, E., (2008), Bilgisayar Öğretmeni Adaylarının Uzaktan Eğitime Yönelik Tutumlarının Çeşitli Değişkenler Açısından İncelenmesi, *Gazi Üniversitesi Gazi Eğitim Fakültesi Dergisi,* 3, 125-145.

Birişçi, S., (2013), Video Konferans Tabanlı Uzaktan Eğitime İlişkin Öğrenci Tutumları ve Görüşleri, *Journal of Instructional Technologies & Teacher Education,* 2, 24-40.

Barış, M. F., (2015), Üniversite Öğrencilerinin Uzaktan Öğretime Yönelik Tutumlarının İncelenmesi: Namık Kemal Üniversitesi Örneği. *Sakarya University Journal of Education*, 2, 36-46.

Canpolat, U., & Yıldırım, Y. (2012).Ortaokul öğretmenlerinin COVID-19 salgın sürecinde uzaktan eğitim deneyimlerinin incelenmesi. *Açıköğretim Uygulamaları ve Araştırmaları Dergisi*, 7,74-109.

Çelik, H.C. & Bindak, R. (2005), İlköğretim Okullarında Görev Yapan Öğretmenlerin Bilgisayara Yönelik Tutumlarının Çeşitli Değişkenlere Göre İncelenmesi, *İnönü Üniversitesi Eğitim Fakültesi Dergisi,* 10, 27–38.

Demirli, C., (2002), Web Tabanlı Öğretim Uygulamalarına İlişkin Öğrenci Görüşleri, *Açık Ve Uzaktan Eğitim Sempozyumu,* Eskişehir.

Dündar, S. & Candemir, Ö. & Demiray, E., Genç Kumtepe, E. & Öztürk, S., Sağlık Terlemez, M. & Ulutak, İ., (2017), Anadolu Üniversitesi Çalışanlarının Açık Ve Uzaktan Öğretime İlişkin Tutumları, *Açıköğretim Uygulamaları Ve Araştırma Dergisi*, 4, 187-227.

Güler, A.Y., Anadolu Ajansı, Ankara, https://www.aa.com.tr/tr/koronavirus/turkiye-koronavirus-icin-etkinetkinıcın onlemler-aldi/1765471 adresinden 18.05.2021 tarihinde ulaşılmıştır.

Gündüz, A.Y. (2013), "*Öğretmen Adaylarının Uzaktan Eğitim Algısı*", Sakarya Üniversitesi Eğitim Bilimleri Enstitüsü Yayınlanmamış Yüksek Lisans Tezi, Sakarya.

İşman, A.(2005), *Uzaktan Eğitim* (Genişletilmiş 2. Baskı), Ankara: Öğreti Pegem A Yayınları.

Kaya, Z., (2002), *Uzaktan Eğitim* (1. Baskı), Ankara. Pegem A Yayıncılık.

Kocayiğit, A. & Uşun, S.,(2020), Milli Eğitim Bakanlığına Bağlı Okullarda Görev Yapan Öğretmenlerin Uzaktan Eğitime Yönelik Tutumları1 (Burdur İli Örneği), *Avrasya Uluslararası Araştırmalar Dergisi*,23,285-299

Millî Eğitim Bakanlığı, Ankara, https://www.meb.gov.tr/Bakan-Selcuk-Koronaviruse-Karsi-Egitim-Alaninda-Alinan-Tedbirleri-Acikladi/Haber/20497/Tr 2 18.05.2021 tarihinde ulaşılmıştır.

Özer, N. & Kır, Ş., (2018), Halk Eğitim Merkezinde Görev Yapan Öğretmenlerin Yetişkin Eğitiminde Uzaktan Eğitimin Uygulanabilirliğine İlişkin Görüşleri, *Açıköğretim Uygulamaları Ve Araştırmaları Dergisi*, 4, 69-86.

Pala, A., (2006), İlköğretim Birinci Kademe Öğretmenlerinin Eğitim Teknolojilerine Yönelik Tutumları, *Sosyal Bilimler Dergisi*, 16, 177-188.

Sabancı, B., (2005), *İlköğretimde Görev Yapan Branş Öğretmenlerinin İnternet Kullanma Durumları*, Anadolu Üniversitesi Eğitim Bilimleri Enstitüsü Yayınlanmamış Yüksek Lisans Tezi, Eskişehir.

Tırnovalı, A., (2012), *Uzaktan Eğitimde İnternet Tabanlı Eğitim Programlarının Temel Boyutlarına Yönelik Öğrenci Ve Öğretim Elemanlarının Görüşleri Ve Öneriler*, Mersin Üniversitesi Eğitim Bilimleri Enstitüsü Yayımlanmamış Doktora Tezi, Mersin.

Turhan, E., (2005), *Okul Yöneticilerinin Geliştirilmeye İhtiyaç Duydukları Yönetsel Süreçlere ve Uzaktan Eğitim Teknolojilerine İlişkin Görüşleri. Eskişehir Örneği*, Anadolu Üniversitesi Eğitim Bilimleri Enstitüsü Yayınlanmamış Doktora Tezi, Eskişehir.

Uşun, S., (2006), *Uzaktan Eğitim* (1. Basım), Ankara: Nobel Yayın Dağıtım

Yalman, M. & Kutluca, T., (2013), Matematik Öğretmeni Adaylarının Bölüm Dersleri İçin Kullanılan Uzaktan Eğitim Sistemi Hakkındaki Yaklaşımları, *Dicle Üniversitesi Ziya Gökalp Eğitim Fakültesi Dergisi,* 21, 197-208.

Yenilmez, K. & Balbağ, M. Z. & Turgut, M. (2017), Öğretmen Adaylarının Uzaktan Eğitime Yönelik Tutumlarının Bazı Değişkenler Açısından İncelenmesi, *Erzincan Üniversitesi Eğitim Fakültesi Dergisi,* 2, 91-107.

Yıldız, S., (2016), Pedogojik Formasyon Eğitimi Alan Öğrencilerin Uzaktan Eğitime Yönelik Tutumları, *AİBÜ Sosyal Bilimler Enstitüsü Dergisi*, 1, 301-329.