

## Comparison of Face-to-Face and Distance Education: An Example of a Vocational High School

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### Abstract

The primary objective of the research is to determine the opinions of vocational high school teachers related to the effectiveness of face-to-face and distance education. The case study method was used in the research. Typical case sampling was preferred from purposive sampling methods in selecting the study group. Besides, 43 teachers who work in different branch types and have various seniority levels in a vocational high school constituted the research study group. The semi-structured interview form developed by the researchers was used as a data collection tool. The data were analyzed descriptively through NVIVO 12 Plus program. As a result of the research, teachers working in a vocational high school stated that positive aspects of face-to-face education include communication, classroom control, efficiency, learning by doing and living, the transmission of emotion, motivation, attracting, socialization, classroom climate, application of methods-techniques, equal opportunity for each student, the use of the whiteboard, participation, and empathy. The positive aspects of distance education were specified as providing discipline, material diversity, accessibility, voluntary participation in class, the applicability of the curriculum, self-expression (or the ability express on self), technological opportunities, saving time, and a healthy environment. There are, however, both positive and negative student attitudes toward distance education. While most teachers prefer face-to-face education in the future, hybrid education was also included among the preferences.

**Keywords:** Face-to-face Education, Distance Education, COVID-19, Vocational High School

**DOI:** 10.29329/ijpe.2023.517.9

**Submitted:** 08/10/2022

**Accepted:** 10/01/2023

**Published:** 01/02/2023

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## INTRODUCTION

Via rapid development and dissemination of Internet technologies, distance education environments have become an indispensable part of education (Karakuş & Yanpar Yelken, 2020). In other words, distance education has been becoming widespread through the development of technology and the various opportunities and facilities it offers (Kutlu & Titrek, 2021). Distance education has become an important topic of interest in educational communication and technology (Simonson & Seepersaud, 2019).

Distance education can be regarded as an interdisciplinary field whose roots date back to three centuries ago. (Bozkurt, 2017). Historically, it is apparent that this education was applied in the 19th century (Kutlu & Titrek, 2021). The term "distance education," initially mentioned in the University of Wisconsin 1892 Catalog, was first used in an article by William Lighty, the administrator of the same university, in 1906. Then, this term (Fernunterricht) was introduced by the German educator named Otto Peters in Germany in the 1960s and 1970s and given as a name (Teleenseignement) to distance education institutions in France (Verduin & Clark, 1994). Distance education, having a long history, is one of the types of education that has emerged in accordance with the needs of society (Süğümlü, 2021). As a matter of fact, from the point of view of social sciences, there are various reasons to benefit from distance education. These reasons are necessity-related, such as natural disasters, epidemics, and wars, or technology-related, such as developments in communication and internet technologies. Humanitarian reasons such as freedom, economic inadequacies, and physical disabilities can also be added to these (Tekdal, 2020). Although all of these reasons seem valid, the COVID 19 pandemic, which has made its impact felt since 2019 and is still dominant today, has made the need for distance education more visible. COVID-19 is the disease caused by a coronavirus called SARS-CoV-2. WHO first obtained information about this new coronavirus on December 31, 2019, in Wuhan in the People's Republic of China, following a report of a group of cases of "viral pneumonia" (WHO, 2021a). COVID-19 maintains its position as a threat to all humanity and affects ordinary life due to the multiplication of variants despite the vaccines and measures found so far. Globally, as of July 29, 2022, there have been 572.239.451 confirmed cases of COVID-19, including 6.390.401 deaths, reported to WHO (WHO, 2022).

Most schools are open as the world enters the third year of the COVID-19 pandemic, though the omicron variant influences countries. Educational costs have also increased noticeably (UNESCO, 2022). The closure of schools owing to Covid-19 in previous years has led to uncertainties and disputes about what and how to teach (Wang et al., 2020). According to a study conducted by the UNESCO Institute for Statistics, it is expected that 100 million children and young people will fall below the minimum reading proficiency level as a result of the fact that COVID-19 erased the outcomes over the past two decades during the period when learning loss begins to emerge globally (UNESCO, 2021). When complete or partial school closures cannot be prevented, governments and school communities have taken actions to ensure, as far as possible, the sustainability of quality, inclusive and accessible distance education for all people. Nonetheless, it has been challenging to establish an effective distance education system in many countries for different reasons. Many countries have reported that the lack of access to a reliable internet connection in all or part of the regions is a significant problem in ensuring that teachers and students work together in good conditions. Moreover, some students lacked access to the devices (i.e., computers or smartphones) needed to access distance education. Access in difficulty and the Internet have influenced especially the more vulnerable, geographically distant, and poor populations (UNESCO, 2021). Even though distance education during the COVID-19 pandemic has helped to reveal students' potential and increase their relationships with their teachers, it has also led to negativities for students who do not have the same technological competence (Anderson, 2020). While long-term and repeated closures in educational institutions have created a psycho-social burden on students, these closures influence especially those who are in financial problems by increasing their learning deficiencies and the risk of dropping out of school (Azoulay, 2020). For instance, Lembani (2020) et al. indicate that students in urban areas have a significantly different educational experience than students with poor access to ICT (information communication technologies) in rural areas.

The interruption of traditional, face-to-face education because of the spread of COVID-19 has necessitated the use of distance education, and suddenly, students have separated from their teachers and peers, starting learning remotely (Poláková & Klímová, 2021). Hence, distance education has become the focus of educational systems. "Distance education is a method where the learner is physically separate from the teacher. It may be beneficial on its own or with other forms of education, including face-to-face education". (Schlosser & Simonson, 2002). Distance education implies education where there is a physical distance between teaching and learning (Kutlu & Titrek, 2021). In cases where it is impossible to perform in-class activities owing to the limitations of traditional learning-teaching methods, distance education 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 defined as: "institution-based, formal education where the learning group is separated, and where interactive telecommunications systems are used to connect learners, resources, and teachers" Four components are available as to the definition of distance education. First, distance education has an institutional basis. Indeed, this is what distinguishes distance learning from self-study. The second component is known as the separation of the teacher and the student from one another. This separation is often regarded geographically as teachers being in one place and students in another. Moreover, there is a separation of teachers and students over time. Asynchronous distance education implies that training is provided, and students can access it at different times or at any time appropriate for them. Interactive telecommunications can be listed as the third component about the definition of distance education. The interaction can also be synchronous or asynchronous simultaneously or at different times. The word "telecommunication systems" means electronic media like television, telephone, and the Internet, but it has not been limited to electronic media only. The final component is the concept of distance education to connect students, resources, and teachers. (Schlosser & Simonson, 2002).

As Rumble (1989) puts it, what should be in the distance education process includes a teacher, a class or curriculum that one or more pupils might teach and the student is trying to learn, implicit or explicit communication between the student and the teacher or the institution that employs the teacher, by agreeing with relevant teaching-learning roles. As Keegan (1980) quoted from Holmberg, there are two elements of distance education. These include the separation of the teacher and the student and the planning of an educational organization. In Moore's (2013) definition of distance education, three elements are also highlighted. These include the separation of teaching and learning behaviors, the use of technical media, and the possibility of two-way communication.

Distance education is a various type of education that cannot be considered a substitute for traditional face-to-face education owing to its openness to working or family-life related adults, face-to-face contact, general independence of time and place as well as classroom, a combination of mass communication and individualization, its potential for student independence, and its original method (Kaya, 2002). To explain distance education, it is necessary to disclose in what ways it differs from traditional face-to-face education. Distance education varies from face-to-face education in the following aspects (Verduin & Clark, 1994):

1. Separation of student and the teacher from each other occasionally or continuously during the teaching period.
2. Planning, preparation of learning tools and materials, provision, and organization of student support services.
3. While bringing the teacher and the student together and offering the content of the class, benefiting from communication tools, computers, and video cassettes with audio.
4. Using technology specific to distance education.
5. Training of people, often individually, due to occasionally or continuously separation in the learning process.

Distance education offers the most realistic opportunity because it allows people to continue their education in different places. The disappearance of time and space constraints makes it inevitable that it will be considered a crucial alternative by educational institutions (Kutlu & Titrek, 2021). In distance education, students use the flexibility of time and space (Mupinga, 2005). The benefits of distance education can be listed as the flexibility to meet specific needs, equality in educational opportunities for students in various regions, low-cost alternatives, new learning experiences, and a vast amount of resources (Kerka, 1996). Distance education opportunities can be summarized as follows (Kaya, 2002): Providing people with different educational options, minimizing the inequality of opportunity and facilitating mass education, offering standards in educational programs, reducing the costs of training, improving qualifications in education, providing the student with freedom, providing a rich educational environment for the student, not forcing the student to study in a classroom environment, ensuring individual learning, ensuring independent learning, giving the individual the responsibility to learn, offering information from the primary source, making more people benefit from experts, ensuring that success is determined under the same conditions, the ability to massify education on the one hand, and individualize it on the other, eliminating the necessity of being in a specific enclosed space at a particular time.

Disadvantages of distance education cover audio and video that may be of lower broadcast quality, reliance on student initiative to work in a less-supervised situation than in a classroom, the need for technical skills to work with presentation technology, and the possibility of social isolation. (Kerka, 1996). Some limitations of distance education offering significant opportunities in many ways can be summarized as follows (Kaya, 2002; Büyükkaragöz & Çivi, 1994): Lack of provision of face-to-face educational relations, the prevention of students from socialization, inability to provide adequate assistance to unaided students and have no habit of self-learning, occupying the rest time of working students, inability to benefit from applied lessons sufficiently, inability to be effective in realizing behavior related to skills and attitudes, dependence on transportation facilities and communication technologies.

One type of education that uses distance education is known as Vocational Education and Training (VET), which has started to take its place in the teaching system following the industrial revolution, and the importance of which has been increasing as scientific and technological developments accelerate. (Taşpınar, 2014). VET programs directly prepare participants for specific occupations without further training. Successful completion of such programs provides vocational or technical qualifications for the labor market (OECD, 2021b). VET provides practical skills and activities specific to a chosen job role (European Commission, 2018). Through school-based and work-based learning, VET offers skill development in many professional fields (OECD, 2021a). The primary reason to include distance education applications in VET is that lifelong education constitutes today's primary education. In addition, distance-based VET can create essential opportunities for disadvantaged groups (including disabled people) or women to gain access to the social division of labor by providing this service for those who have not benefited from educational opportunities in the formal education process. (Taşpınar, 2014). VET is now available in schools and online, with an increasing number of classes offered by experts and professionals on the web (European Commission, 2018). However, the COVID-19 pandemic has underlined the benefits of digital technologies in education. It has also unearthed some crucial challenges, especially in VET, where applied learning is the norm (OECD, 2020).

Through the COVID-19 process, there has been a noticeable increase in research regarding distance education in terms of the literature. However, research on distance-based vocational education (Hayashi et al., 2021; Krystalli, Mavropoulou, & Arvanitis, 2021; Chertakova et al., 2020; Yates, Brindley-Richards & Thistoll, 2014; Aksoğan, 2020; Vlassopoulos et al., 2021; Aktı Aslan, Turgut & Aslan, 2021; Evcili, Güçlü & Akkoyun, 2021; Yassine, Mustapha & Noureddine, 2021; Poláková & Klímová, 2021; Smith et al., 2021; Grace & Smith, 2001; Thistoll & Yates, 2016; Smith, 2000; Gaba, Bhushan & Rao, 2021) seems limited. It can be said that, unlike this study, other studies regarding the situation of vocational/technical high schools in the distance education process are more limited (Pan vd. 2021; Vlassopoulos et al., 2021; Yassine, Mustapha & Noureddine, 2021).

Nevertheless, the COVID-19 pandemic has profoundly disrupted vocational education worldwide because of the impact of quarantine measures on economic activity and schooling (Avis et al., 2021; Schleicher, 2020). Vocational education plays a crucial role in ensuring reconciliation between education and business, students' successful transition to the labor market, and employment and economic recovery in general. Compared to general programs, this type of education has double disadvantages because it makes practical and work-based learning difficult, which are essential for the success of vocational education and social distancing requirements, and the closure of businesses (Schleicher, 2020). Thus, vocational education is an area that needs to be examined due to its importance in the education system and its disadvantageous situation. The role of the teacher in vocational education is undeniable. As in all parts of the educational system, teachers are at the heart of high-quality vocational education. (OECD, 2021a). The importance of vocational education teachers also came to the forefront during the COVID-19 pandemic and the closure of schools (OECD, 2020). Despite this, it can be claimed that the studies on teachers in the context of vocational education are relatively few (Rogers Haverback, 2020; UNEVOC, 2021). In their research, Yates, Brindley-Richards & Thistoll (2014) examined a distance-based education institution operating in New Zealand in which student participation is as high as face-to-face education and found that the students' perspective on technical and vocational education and training (TVET) is widely included in the literature. Yet, much less is known regarding the perspective of the teaching staff. In this framework, in this research, the effectiveness of face-to-face and distance education in the COVID-19 process has been scrutinized through teachers working at vocational high schools. The sub-questions of the research are listed as follows:

1. What are the positive and negative aspects of face-to-face education compared to distance education?
2. What are the recommendations to eliminate the negative aspects of face-to-face education?
3. What are the positive and negative aspects of distance education compared to face-to-face education?
4. What are the recommendations to eliminate the negative aspects of distance education?
5. What are the student attitudes toward face-to-face and distance education?
6. What are the teacher preferences toward face-to-face and distance education?

## **METHODOLOGY**

### **Research Design**

The case study method was used in the research. "The case study is the study of the particular and complexity of a single case coming to understand its activity within important circumstances" (Stake, 1995). In the case study, one or more situations are analyzed in a holistic approach within its limits (Christensen, Johnson & Turner, 2015, 416; Yıldırım & Şimşek, 2018, 75). In this study, face-to-face and distance education processes were considered a situation in the context of teacher opinions.

### **Data Collecting Tools**

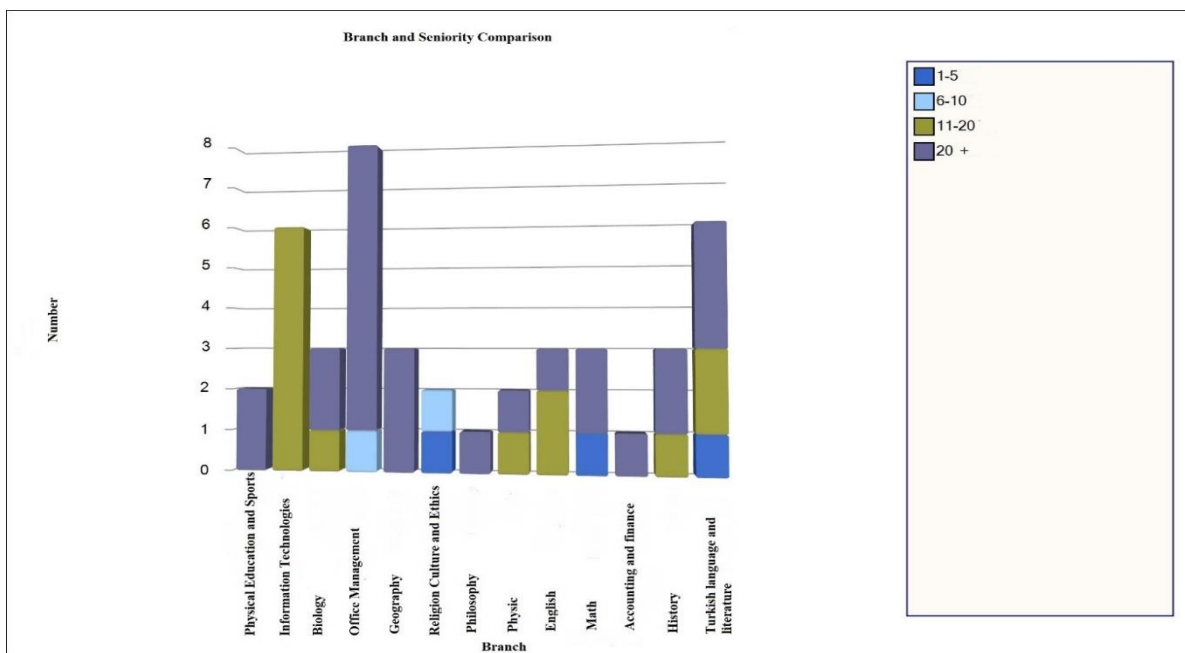
The semi-structured interview form developed by the researchers was used as a data collection tool. The prepared questions were sent to 3 expert academicians in their fields and their opinions were obtained. In case the participants were asked to answer freely, it was ensured that unexpected or unplanned answers were also obtained through the preferred open-ended questions. Hence, more comprehensive and detailed information on the subject can be obtained (Büyükoztürk et al., 2018, 127). The following questions were included in the final interview form:

- What are the positive aspects of face-to-face education compared to distance education?
- What are the negative aspects of face-to-face education compared to distance education?  
 What are your recommendations for eliminating the negative aspects of face-to-face education?
- What are the positive aspects of distance education compared to face-to-face education?
- What are the negative aspects of distance education compared to face-to-face education?  
 What are your recommendations for eliminating the negative aspects of distance education?
- What are the student attitudes toward face-to-face and distance education?
- Do you prefer distance or face-to-face education in the future? Why?

Some of the questions were asked particularly in a confirming manner (for example, the strengths of distance education and the weaknesses of face-to-face education). Thus, it was aimed to disclose the consistency and relational connections of the findings within themselves.

### Study Group

The study group consisted of 43 teachers working at Vocational and Technical Anatolian High School in a province of the Western Black Sea region of Turkey in the 2020-2021 academic year. The study group is "typical case sampling," one of the purposive sampling methods. Typical case sampling is targeted at revealing the typical or normal (Glesne, 2013, 61), and it is also aimed at obtaining knowledge about a particular field or subject that focuses on mean situations and mean standards (Yıldırım & Şimşek, 2018, 121). The branch and seniority level distribution of the study group is given in Figure 1.



**Figure-1.** Distribution of the Working Group by Branch and Seniority

Teachers with different seniority levels took part in the working group [1-5 years (f:3), 6-10 years (f:2), 11-20 years (f:13), 20 years and over (f:25)]. Fourteen of the study group are vocational class teachers [such as Information Technologies (f:6), Office Management (f:8), Accounting and Finance (f:1)] while 29 of them are from various branch teachers [such as Physical Education and

Sports (f:2), Biology (f:3), Geography (f:3), Religious Culture and Ethics (f:2), Philosophy (f:1), Physic (f:2), English (f:3), Math (f:3), History (f:3), Turkish Language and Literature (f:6)]. The name- surname information of the teachers is not given in the direct quotations, and it is coded in such a way as to indicate the branch and seniority year. For example, a teacher of an office management class whose seniority is 20 years and over has been expressed as OM-20 years and over.

### **Data Analysis**

The data were collected personally by going to the school where the participants worked. Firstly, the participants filled out semi-structured interview forms. The data collection took place face to face or at a time when distance education activities were carried out due to the covid 19 pandemic process. This period has been especially preferred in terms of appropriateness for the purpose and questions of the research. Thus, it was considered valuable for teachers to compare the effectiveness of both types of education during the same period.

During the analysis of the data, participants were contacted again, and their opinions were obtained, especially for some vague and incomprehensible statements. Participant opinions were transferred to The NVIVO 12 Plus program. The data were analyzed descriptively. In the descriptive analysis, the data have been summarized and interpreted according to the themes determined earlier (Yıldırım & Şimşek, 2018, 229). Themes were determined by forming a framework of research questions. Sub-themes have been created from themes.

### **Validity and Reliability**

The measures taken to increase the validity and reliability of the research were explained via the accepted concepts in the qualitative dimension. In this way, the issues of external validity, internal validity, external reliability, and internal reliability were addressed.

External validity is expressed with concepts of transferability and appropriateness. Besides, in terms of external reliability, it is noteworthy that research sampling should be defined enough for comparability along with their environments and processes with other samplings, sampling should be diversified, and research findings should be repeatable in similar environments. To increase transferability in external validity, it has been important to make detailed descriptions and select purposive sampling (Miles & Huberman, 1994, 274; Merriam, 2013, 218-219). One of the purposive sampling methods, typical case sampling, was applied in this framework. Direct quotations have been used for a detailed description.

Internal validity is related to the fact that the research is logical and convincing (Merriam, 2013, 203; Miles & Huberman, 1994, 273; Yıldırım & Şimşek, 2018, 277). Different strategies have been proposed to increase internal validity, such as participant's confirmation and triangulation (Merriam, 2013, 206-207). Participants' confirmation was obtained in the research due to unclear and incomprehensible phrases. It has been clarified what exactly such a participant wants to tell. Teachers of different branches and seniority were reached through data triangulation. Thus, it was tried to achieve multiple realities through different perceptions and experiences (Yıldırım & Şimşek, 2018, 279).

External reliability is related to objectivity and confirmability. It attaches importance to the clear and detailed explanation of the general methods and processes of the individuals in the study, the storage of the study data, and their availability for re-analysis by others (Miles & Huberman, 1994, 272). In the study, the distribution of the participants according to their branches and seniority has been given, and the study group has been described clearly. Moreover, the research process has also been tried to be given in detail from the data collection tool to the research questions, from the analysis format to the presentation of the findings. The raw data of the study are stored and kept ready for use when necessary.

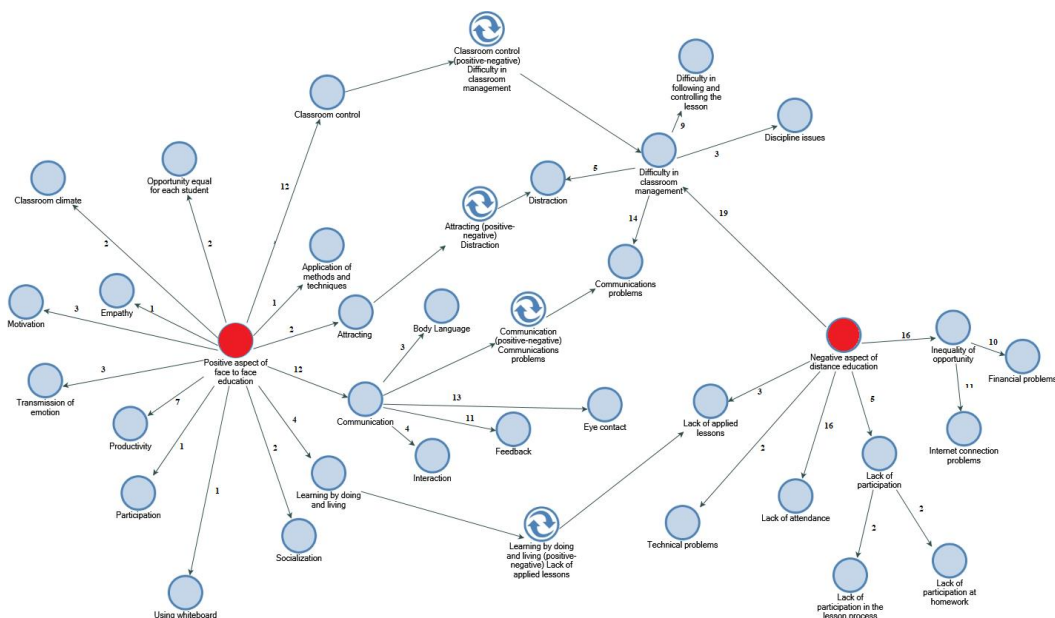
Internal reliability addresses the issues of controllability, quality, and honesty. It focuses on whether the work has been done carefully. It is about such issues as openness of research questions and reflection of the process, presentation of data directly, and comparison of coding (Miles & Huberman, 1994, 272 Yıldırım & Şimşek, 2018, 275). In this regard, the research questions were written in detail in accordance with the purpose of the research. The findings were also presented according to the purposes and questions of the study. The findings were enriched with direct quotations. One of the researchers carried out coding. The other researcher examined the data from the beginning and evaluated the codings, then both researchers consulted on the appropriateness of the codings and shaped the final version of the analysis.

## Findings and Discussions

The findings of the study were presented in a way that answers the research questions. To reflect the consistency and relationship of the answers given, "the positive aspects of face-to-face education and the negative aspects of distance education" as well as "the positive aspects of distance education and the negative aspects of face-to-face education" were covered under the same title. Recommendations have been given to eliminate the negative aspects of distance and face-to-face education. Finally, student attitudes and teacher preferences toward face-to-face and distance education were expressed. In figures regarding findings, the numbers by the arrows indicate the number of times that sub-theme has been expressed.

### Positive Aspects of Face-To-Face Education and The Negative Aspects of Distance Education

The theme of the positive aspects of face-to-face education consists of 13 sub-themes (Figure 2). These include communication (f:12), classroom control (f:12), efficiency (f:7), learning by doing and living (f:4), transmission of emotion (f:3), motivation (f:3), attracting (f:2), socialization (f:2), classroom climate (f:2), application of methods and techniques (f:1), opportunity equal for each student (f:2), use of the whiteboard (f:1), participation (f:1) and empathy (f:1).



**Figure 2.** The Positive aspects of Face-To-Face Training and the Negative Aspects of Distance Education

Some direct quotations regarding the positive aspects of face-to-face education are given below:



*Because there is more effective communication in face-to-face education, it comes across as the most outstanding positive aspect (communication)- AF (20+years).*

*It is unclear if the student received the message during the distance learning process. Also, the student's attitude to the topic or the problem is not understood (communication)- MATH (20+years).*

*In face-to-face education, it is much more possible to control students in the classroom and encourage them to participate in the class (classroom control)- OM (20+years).*

*Face-to-face education related to receiving feedback on communication is more efficient (efficiency)-RCE (1-5years).*

*Due to excessive resources, the class is being progressed efficiently (efficiency)- OM (20+years).*

*Face-to-face education is better in terms of learning by doing and living (learning by doing and living) -TLL (20+years).*

*Face-to-face education makes the student's attention and motivation strong (motivation)-HIS (20+years).*

*Being in the same classroom environment as the student increases the student's motivation (motivation)- IT (11-20 years).*

*The high level of student participation is one of the positive aspects of face-to-face education (participation)- AT (11-20 years).*

According to the findings, the most focused topics are the advantage of communication in face-to-face education and ensuring classroom control through class participation. Establishing eye contact, interaction, body language, and the probability of giving feedback in face-to-face education are considered effective in terms of ease of communication. Communication thus increases efficiency.

- The theme of the negative aspects of distance education consists of six sub-themes. These include *classroom management difficulties (f:19)*, *inequality of opportunity (f:16)*, *distraction (f:16)*, *lack of participation (f:5)*, *lack of applied lessons (f:3)*, and *technical problems (f:2)*. Some direct quotations of the negative aspects of distance education are presented below:
- *It is not easy to control if students pay attention to the class because we cannot see the students in distance education (Classroom management difficulty)-EN (11-20 years).*
- *The inability of students who do not have the opportunity to attend a class conducted through distance education (Inequality of opportunity)-MATH (1-5 years).*
- *Inaccessibility to the Internet by students, the insufficient infrastructure for the Internet, lack of tablet-mobile phone-computer (Inequality of opportunity)- PHY (20+ years).*
- *In distance education, the fact that the camera is turned off results in the student not feeling like they belong to the class and being distracted (distraction)-IT (11-20 years).*

*I have trouble listening and speaking classes because the students do not want to attend the class (lack of participation) – EN (20+ years).*

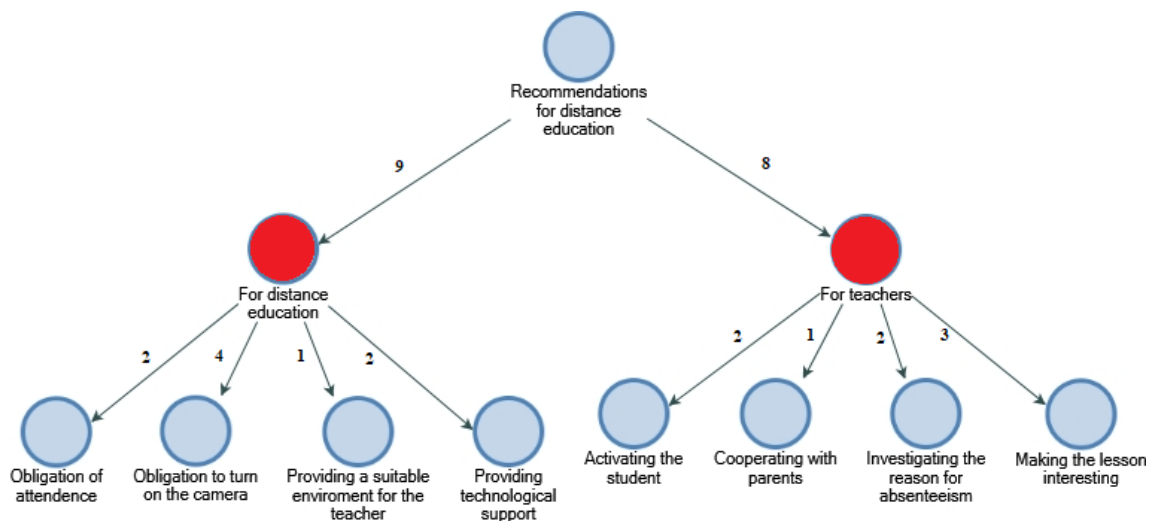
*Most students listen to applied lessons as if they were paying attention to theoretical classes because they do not have Internet or a program. In the lack of participation in the lesson process, teaching is also problematic. (lack of participation) – OM (20+years).*

In accordance with the findings, the most focused issues related to the negative aspects of distance education are that it makes classroom management difficult, causes inequality of opportunity, and distraction. Distraction, difficulty in following and controlling the class, discipline issues, and communication problems come to the forefront in classroom management. Reasons for the inequality of opportunities cover the inability to access the Internet due to financial problems and connection problems caused by the Internet infrastructure.

The sub-themes regarding the relationship between the positive aspects of face-to-face education and the negative aspects of distance education were also determined. These relationships were matched as *the difficulty of classroom management with classroom control, attention with distraction, communication problems with communication, and lack of applied lessons with learning by doing and living*. These relationships are considered necessary in terms of the consistency of the findings.

### RECOMMENDATIONS FOR DISTANCE EDUCATION

Recommendations to eliminate the negative aspects of distance education have been expressed in two dimensions: the distance education system itself and the teachers (Figure 3). All of these recommendations have been collected in eight sub-themes. These themes are known as an obligation to turn on the camera (f:4), making the class interesting (f:3), an obligation of attendance (f:2), providing technical support (f:2), activating the student (f:2), investigating the reason for absenteeism (f:2), providing a suitable environment for the teacher (f:1) and cooperating with the parents (f:1).



**Figure 3.** Recommendations for Distance Education

Some direct quotations aimed at eliminating the negative aspects of distance education are offered below:

- *By eliminating security vulnerabilities, carrying out the class with the camera on can increase the effectiveness (Obligation to turn on the camera) – IT (11-20 years).*
- *... during the class, students should have their cameras on as much as possible (obligation to turn on the camera) – OM (20+ years).*

- ... *teachers should be provided with training on Web 2 tools that can ensure effective participation of students in the class in distance education* (activating the student)- IT (11-20 years).
- ... *It should be determined by the teachers for what reason the students did not attend the classes. Social networking groups should be created by cooperating with parents...* (cooperating with parents) -IT (11-20 years).

The most focused issue is related to keeping the cameras on. When talking about the negative aspects of distance education, it was mostly seen that one of the underlying causes of problems such as classroom management difficulty and distraction was that the cameras have not been turned on. As a result, this situation brings communication problems together. The teachers' solution proposal is to keep the cameras on in this case. Teachers also take responsibility to rule out the negativity of distance education. Moreover, they perform self-criticism to make students active and interested in the class.

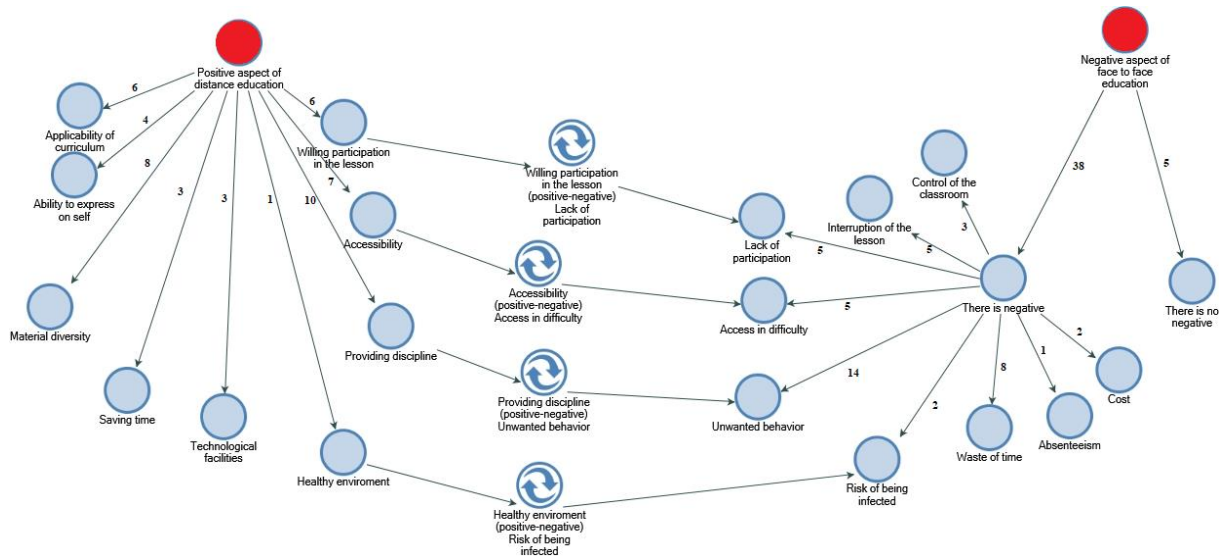
### **The Positive Aspects of Distance Education and the Negative Aspects of Face-to-Face Education**

The themes of the positive aspects of distance education were collected under eight sub-themes such as providing discipline (f:10), material diversity (f:8), accessibility (f:7), voluntary participation in class (f:6), the applicability of curriculum (f:6), self-expression (f:6), technological opportunities (f:3), saving time (f:3), and a healthy environment (f: 1) (Figure 4). Some direct quotations regarding the positive aspects of distance education are offered below:

- There are no discipline issues because we cannot track the state and movements of students online (providing discipline) – OM (20+years).
- The use of technological materials can be effective (material diversity)-RCE (6-10 years).
- It is possible to access all kinds of materials (test, topic, map, etc.) (material diversity)-HIS (11-20 years).
- Students can easily access classes in the comfort of their home environment (accessibility) AT (20+years).
- ... the student thinks that he/she is being tutored and he/she is comfortable, he/she attends the class more. He/she expresses himself/herself better (voluntary participation in the class) AF (20+ years)
- There is no waste of time in classes. For example, like no absenteeism control, the class progresses faster. (saving time) – PHY (20+years).
- Distance education classes are positive for student health (healthy environment)- EN (20+ years)

The most focused and remarkable issue is the provision of discipline in distance education. Nevertheless, the underlying reason for this opinion is that student behavior cannot be observed in distance education. Teachers are also unaware of possible discipline issues because they cannot see the students. It can be stated that these opinions point out the negative rather than the positive aspect of distance education. Moreover, among the recommendations for distance education, it can be said that the obligation to keep the cameras on is related to these opinions. In particular, the speed of accessing and sharing documents and information in a digital environment regarding material diversity was highlighted.

The theme of negative aspects of face-to-face education, such as *unwanted behaviors* (f:14), *waste of time* (f:8), *access in difficulty* (f:5), *lack of participation* (f:5), *interruption of the class* (f:5), *class control* (f:3), *costs* (f:2), *risk of being infected* (f:2), *absenteeism* (f:1), were collected in nine sub-themes. Besides, five teachers asserted that face-to-face education has no negative aspect.



**Figure 4.** Positive Aspects of Distance Education and Negative Aspects of Face-To-Face Education

Some direct quotations as to the negative aspects of face-to-face education are presented below:

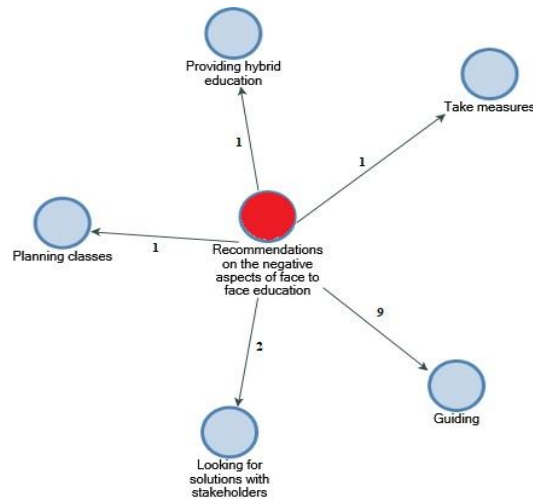
- *In terms of controllability and disrupting the class, face-to-face education can be characterized as negative (unwanted behavior) PES (20+years).*
- *More time is spent on student control in face-to-face education (waste of time)-PES (20+years).*
- *In face-to-face education, the student does not pay attention to the class (lack of participation)- GEO (20+ years).*
- *In face-to-face education, the educational environment is inaccessible in weather conditions such as snowfall, and schools are on vacation (access in difficulty) – IT (11-20 years).*
- *It is more possible for students to influence each other (for example, timid students do not express their opinions.) OM (20+ years).*
- *There is an epidemic concern in face-to-face education. (risk of being infected) - GEO (20+years).*

Among the negative aspects of face-to-face education, unwanted behaviors were focused most. This theme might be associated with providing discipline, which is one of the positive aspects of distance education. Investigating other relationships, the themes of risk of being infected with a healthy environment, access in difficulty; difficulty participating in the class with voluntary participation match each other. For example, teachers claimed that distance education offers education

in a healthy environment. However, they also emphasized the risk of being infected in face-to-face education.

### Recommendations for Face-to-Face Education

Recommendations for addressing the negative aspects of face-to-face training were collected under five sub-themes such as guiding (f:9), looking for solutions with stakeholders (f:2), planning class (f:1), taking measures (f:1), and providing hybrid education (f:1) (Figure 5).



**Figure 5.** Recommendations for Face-to-Face Education

Some recommendations for addressing the negative aspects of face-to-face education are presented below in the form of a direct quotation:

- *Students and parents need to be well informed regarding the importance of the class and its place in their lives.* (guiding)- TLL (20+ years).
- *My suggestion is that the student understands that he/she builds his/her future and acquires a sense of responsibility* (Guiding)- GEO (20+ years).
- *I researched to determine the source of this problem that the student experiences (One-on-one interview, cooperation with his/her teachers, family, counselor, etc.) (looking for solutions with stakeholders)* MATH (20+ years).

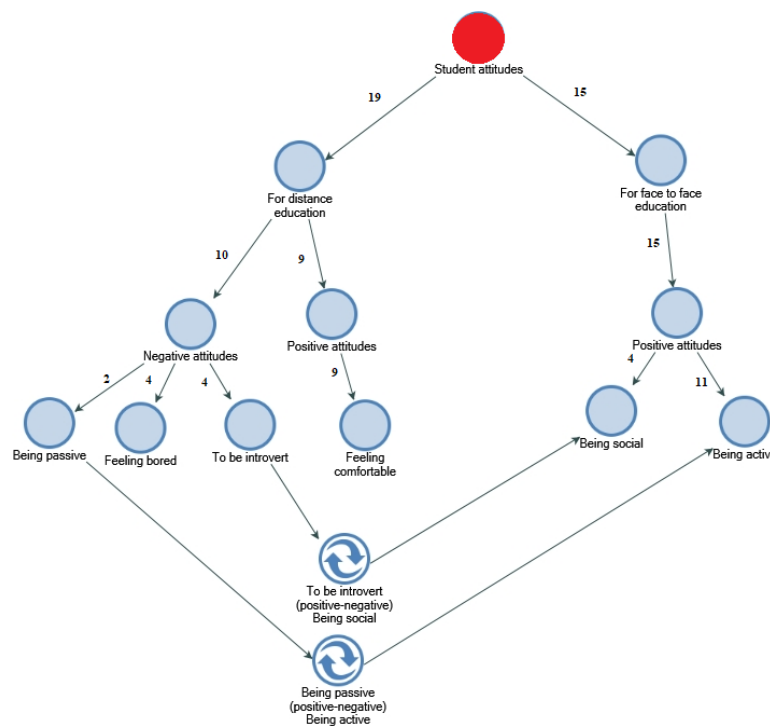
Teachers stated that the most effective solution to the questions in face-to-face education is *guiding*. Interestingly, while there are many determinations regarding the positive and negative aspects of face-to-face education, the recommendations are few.

### Student Attitudes towards Face-to-Face and Distance Education

Teachers were asked as to the attitudes of students toward distance and face-to-face education. According to teachers, students feel toward face-to-face education only a positive attitude. Still, they have both positive and negative attitudes toward distance education. Positive attitudes toward distance education were collected under sub-themes of feeling comfortable (f:9), negative attitudes, to be introvert (f:4), finding the environment boring (f:4), and being passive (f:2). Sub-themes of being active (f:11) and being social (f:4) reflect positive attitudes toward face-to-face education (Figure 6).

Some of the teacher's opinions regarding student attitudes toward face-to-face and distance education are presented as follows:

- They are more respectful and obey because teachers directly communicate with the student in face-to-face education. Still, they can be more comfortable and disrespectful in distance education (feeling comfortable) AT (11-20 years).
- In distance education classes, students can be very comfortable and indifferent... (feeling comfortable) GEO (20+years).
- Because relationships are more formal in distance education, the student can behave more timidly (to be introvert) GEO (20+years).
- Students are more social and happier interacting with their friends during face-to-face education (being social) OM (20+years).
- Since there is no obligation in distance education, students do not attend the class, and some of the participants seem online but are not present in the class (being passive) BIO (11-20 years)
- The student is more interested in face-to-face education, and the participation in the class is more, he/she instantly asks his/her teacher what he/she does not understand and receives an answer (being passive) AF (20+ years).
- Distance education environments are boring for students (finding the environment boring) OM (20+ years)
- The student is more free, bored, and easily distracted in distance education environments (finding the environment boring) OM (20+ years).



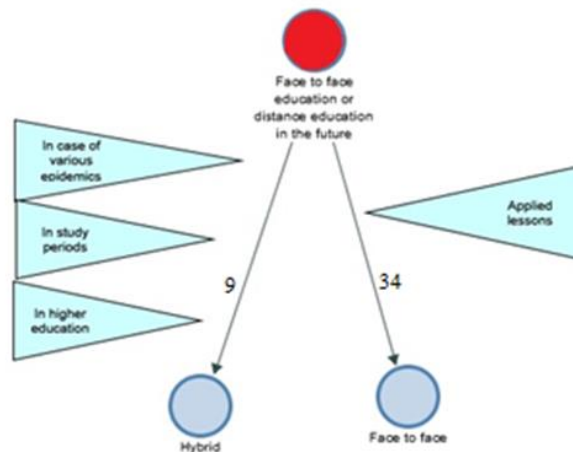
**Figure 6.** Student Attitudes toward Face-to-Face and Distance Education

Teachers stated that they could not use the students' social skills in the distance education environment; instead, students were more social and interactive in face-to-face education. In light of these opinions, it can be claimed that students are more active in face-to-face education.

It has also been expressed that the positive attitude toward distance education is that students feel comfortable. Teachers claim that the student who does not leave his/her comfort zone feels comfortable in the home environment, but the negative consequences of this situation (disrespect, indifference, etc.) are also available.

### Teacher Preferences for Face-to-Face and Distance Education

The question has been asked to teachers whether they would prefer face-to-face or distance education in the future. Most teachers prefer face-to-face education (f: 34), whereas there has been no preference for distance education. However, hybrid education (f:9) among the preferences has also taken part (Figure 7).



**Figure 7.** Teacher Preferences in Face-to-Face and Distance Education

Some of the teacher preferences in face-to-face and distance education are as follows:

- *Face-to-face education is possible only after the virus issue has been definitively resolved TLL (20+years).*
- *Face-to-face education is healthier for both the teacher and the student. Continuing education in an educational environment motivates the student and brings responsibility and stability EN (11-20 years).*
- *Classes should definitely be progressed in a face-to-face environment since the student does not see himself/herself in an educational environment in distance education. This certainly negatively affects the class efficiency HIS (20+ years).*
- *I prefer it to be face-to-face. The exact efficiency cannot be obtained in applied lessons IT (11-20 years).*
- *Classes should definitely be face-to-face. The student must take class discipline and school discipline... MATHS (20+ years)*
- *... By providing a hybrid educational environment, a learning environment can be formed without a shortage of space and time, as well as offering physical proximity OM (6-10 years).*

- *I think that having classes in a hybrid environment will give positive results both from the perspective of the student and the teacher. Thanks to technology development, class design environments have become more efficient. Theoretical classes can be carried out more efficiently in online environments. IT (11-20 years).*
- *We need to learn to use both of them together. We need to find methods to improve this situation. Because the student profile has been changing, learning and interests have also been changing. We need to take action before they do GEO (20+ years)*

In general, it is believed that hybrid education can be used in various health conditions, classes offering study periods or higher education. It has also been expressed that face-to-face education should be carried out, especially in applied lessons.

## CONCLUSION AND SUGGESTIONS

Vocational high school teachers have an essential role in motivating students and removing obstacles to learning since vocational high school students usually have more diverse and different profiles than other students. (OECD, 2021a). Via the onset of COVID-19, teachers have found new or alternative ways of teaching by using widely available digital technologies. They even filled in students' learning gaps by offering practical learning opportunities in schools under quarantine conditions allowed by countries in certain situations (OECD, 2020). During the COVID-19 pandemic, many vocational high school teachers relied heavily on professional online networks to strengthen and support their use of online teaching technology (ILO, 2021). In the Covid-19 process, it has been observed that research regarding teachers in the context of vocational education is limited, and thus, the effectiveness of face-to-face and distance education has been tried to be determined through teachers working in vocational high schools.

As a result of research, teachers who work in vocational high schools stated the positive aspects of face-to-face education as communication, classroom control, productivity, learning by doing and living, the transmission of emotion, motivation, attracting, socialization, climate class, the method-the application of techniques, opportunity equal for each student, use of whiteboard, participation, and empathy. In contrast, they stated the negative aspects of face-to-face education as unwanted behaviors, waste of time, access in difficulty, lack of participation, interruption of the class, classroom management, costs, the risk of being infected, and absenteeism. Stone (2012) stated that the positive relations between the teaching staff and the students contribute significantly to students' academic success, while Gürşimşek (1999) stated that strong classroom discipline is needed for students to gain knowledge and skills in a healthy way in traditional face-to-face education. A study by Aksoğan (2020) touched upon the opinions of students studying in vocational schools, and it was found that distance education negatively affects socialization. This result coincides with the substantial aspect of face-to-face education in ensuring socialization. The fact that Mundelsee & Jurkowski (2021) highlighted a lack of participation and classroom activity in distance education during the pandemic differs from the results of this study. The lack of participation has been a negative aspect emphasized in face-to-face education.

In the research results, the diversity of the results regarding both the positive and negative aspects of distance education draws attention. Likewise, the study by Krystalli, Mavropoulou, & Arvanitis (2021) examined how the students of vocational education institutions perceive distance education, and it was found out that the perceptions of distance language learning are positive and negative. According to the teachers working in vocational high schools, the positive aspects of distance education include providing discipline, material diversity, accessibility, voluntary participation in the class, the applicability of the curriculum self-expression, technological opportunities, saving time, and a healthy environment. Chertakova et al. (2020) analyzed the experience of applying distance education in the context of the COVID 19 pandemic and it was concluded that the distance learning environments and technologies used in teaching professional disciplines contribute to the gradual development of students' professional competence. Evcili, Güçlü



& Akkoyun (2021) regarded the reduction of financial expenditures of Vocational School Students in the distance education process, unlimited access to class materials, and reduced risk of disease as an advantage. In a study conducted with vocational high school students, Yassine, Mustapha & Noureddine (2021) revealed that distance education has more advantages than disadvantages than traditional education. Poláková & Klímová's (2021) research, however, showed that a large percentage of vocational school students have internet access and technological tools that can be used for educational purposes. Even if they prefer different teaching methods, synchronous online classes are among their priorities since it allows them to communicate directly with their teachers and peers. According to research by Jacqueline & Smita (2001), most students in online classes meet their academic needs and improve their technological skills. Though communication is more challenging in distance education, Robinson & Hullinger (2008) defended that it is crucial to encourage participation through quick and appropriate feedback. Besides, they claim that communicating with colleagues and sharing multiple perspectives and ideas contribute to increased participation. Recent developments during the COVID-19 crisis have pointed out that digital tools and technologies, such as online teaching platforms, simulators, and other temporal training software for different professions, can help teachers develop their students' vocational and practical skills effectively (OECD, 2020). All these findings and studies support the research result.

The negative aspects of distance education were expressed as classroom management difficulties, inequality of opportunities, distraction, lack of participation, lack of applied lessons, and technical problems. According to Vlassopoulos et al. (2021), most vocational high school students were dissatisfied with distance education, considering they did not have the expected benefit in terms of knowledge and skills. In the study by Evcili, Güçlü & Akkoyun (2021), it is clear that vocational high school students regarded the inability to practice and gain clinical experience as the most important disadvantage. On the other hand, Shea, Motiwalla & Lewis (2001) defended those students who are waiting for technical support in the distance education environment. In the study by Akti Aslan, Turgut & Aslan (2021), teachers' opinions about distance education were taken during the COVID-19 pandemic. Teachers have complained that students do not attend online classes on time or even at all, they are indifferent, and there is a lack of instant feedback, communication with students is limited, and class times are insufficient. In a study by Mulyanti, Purnama & Pawinanto (2020), vocational high school students stated that online learning is not any more interesting than regular learning though most of them can understand classes taught and are given the opportunity to actively participate in the learning process thanks to their teachers. About the lack of participation, the finding by Ross (2010, 1) that "obstacles to student participation may be particularly challenging in a distance education environment" coincides with the research results.

According to Chen, Gonyea & Kuh (2008), "distance learning provides students with opportunities for active individual study while Chen, Gonyea & Kuh (2008) claimed their ability to collaborate with others is limited and that distance students often experience feelings of isolation and little sense of belonging or connection with the education provider." Stone (2012) also claimed that it is difficult to establish relationships with students remotely because there is little or no face-to-face contact. Among the negative aspects of distance education, it is believed that the above findings may cause the reason for the lack of participation.

Recommendations for distance education have been listed as the obligation to turn on the camera, making the class interesting, the obligation of attendance, providing technological support, activating the student, investigating the reason for absenteeism, providing a suitable environment for the teacher and cooperating with parents. Similar recommendations have been emphasized in various studies. According to Rogers Haverback (2020), teachers should be trained in online platforms to conduct online learning activities. Teachers need to simplify teaching with technology and applications. In their research, Mukarromah & Wijayanti (2021) on vocational high schools concluded that the digital competence of the teacher and the creativity he/she has should be developed in realizing learning, and the motivation of the students should be increased because they might be bored with online learning. The COVID-19 pandemic has disclosed how much VET teachers are struggling to teach vocational content online. This is caused by the lack of online teaching resources or the

difficulty of teaching some practical skills online and the lack of experience in using online teaching methods (UNEVOC, 2021). On the other hand, Yates, Brindley-Richards & Thistoll (2014) stated that student participation in educational institutions could match with face-to-face organizations in distance education institutions, but staff should be student-centered. In the research by Evcili, Güçlü & Akkoyun (2021), 92.6% of the students suggest that the classes should be supported with more materials, while 84.0% of them suggest that the consultancy services be carried out actively in order to improve the distance education process.

According to the teachers working at the vocational high school, students feel positive attitudes toward face-to-face education while they feel both positive and negative attitudes toward distance education. Considering the teacher preferences, it can be said that most teachers preferred face-to-face education while no one preferred distance education. On the other hand, hybrid education has also been among the preferences. In this regard, Taşpınar (2014) draws attention to the fact that designs in which face-to-face and web-based learning environments are applied together, expressed as blended learning of vocational education, can be used in vocational education, and give valuable results. The desire to establish more substantial, more sustainable, and flexible distance education systems in the future will allow educational systems to become more flexible and perhaps evolve toward a more hybrid (face-to-face and distance education) model. (UNESCO, 2021).

As a result of the study, it is clear that the distance learning process could not be fully adopted in vocational high schools where applied lessons are predominant. Therefore, improvements should be made to address the shortcomings of distance education. According to the research results, a hybrid teaching model specific to vocational education can be developed by considering the advantages and disadvantages of face-to-face and distance education. The study group of the research is limited to teachers in only one vocational high school. In this context, the working group can be expanded in future studies. The study can be repeated by using different data sources, data collection tools, and methods when face-to-face education has been provided in a vocational high school because it has been conducted in a long-term distance learning process caused by the pandemic.

**Conflicts of Interest:** No potential conflict of interest was declared by the authors.

**Funding Details:** No funding or grant was received from any institution or organization for this research.

**CRedit Author Statement:** Burcu DUMAN: Conceptualization, Methodology, Resources, Investigation, Supervision, Writing – Review & Editing; Visualization. Nurgün GENÇEL: Conceptualization, Resources, Investigation, Writing – Original Draft.

**Ethical Statement:** This research was approved by Bartın University Social and Human Sciences Ethics Committee and the respondents were guaranteed anonymity. A convenient sampling strategy was employed, the study group consisted of 43 teachers who work at Vocational and Technical Anatolian High School in a province located in the Western Black Sea region of Turkey in the 2020-2021 academic year. Participation in the study was voluntary.

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