

Evaluation of The Impact of The Covid-19 Pandemic on Online Dental Prosthesis Technician Education

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Abstract:

Background: Online lessons have become an essential factor in the continuity of education during COVID-10 pandemic. This study aimed to analyze the impact of the COVID-19 pandemic on online education at Istanbul Aydın University, Department of Dental Prosthesis Technologies (DTD) in Turkey.

Materials and Methods: An online questionnaire consisting of self-administered closed questions was sent to the participants via e-mail, and their participation was ensured.

Results: In December 2021, we e-mailed a survey to 295 students of DTD and received 158 responses. While the rate of those who find online education applications partially and completely sufficient is the same as those who find them insufficient, the rate of those who are undecided is 13%. 70% of the participants did not find online education equal to face-to-face education. While the rate of being worried about being infected in face-to-face education was 68%, the majority thought that the epidemic threat and the epidemic should be controlled entirely. All of the participants complained about internet connection, class hours, and system errors. The materials were found to be intelligible 48% and sufficient 38%, while 28% were incomprehensible and 35% insufficient. Participants were optimistic about the duration of the lessons and the knowledge skills of the trainer. Although online education seems to be an alternative to dental prosthesis technician education during the pandemic period, online education applications are not an alternative to face-to-face education in the short term unless the quality and content of the education materials are improved.

Conclusion: In short, the modern study showed that the COVID-19 pandemic had largely positively impacted online dental technologist training.

Key Word: Dentistry; Distance learning; E-learning; Face-to-face education; Online education.

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I. Introduction

Many schools and universities are increasingly implementing a transition from face-to-face teaching methods to online teaching or a combination of online and traditional teaching (hybrid) (1). The combined teaching method involves replacing some of the face-to-face interaction with online teaching (2). As online education applications continue to rise, a study in the United States reported that many educators begin turning face-to-face teaching into an online environment (3).

On March 11, 2020, the WHO (World Health Organization) declared the coronavirus outbreak a pandemic. Currently, the world is battling against the contagious respiratory disease caused by a new coronavirus (COVID-19). The implementation of social distancing (i.e., the increasing physical distance between people) to reduce transmission during the COVID-19 pandemic has forced school administrations to vacate their classrooms and keep students away from institutions. As a result, there has been a general transition from traditional face-to-face teaching to online teaching. Most institutions, including Istanbul Aydın University, have switched to distance learning in the simplest and most convenient ways possible, including conference platforms, e-mail, and telephone.

Two main estimates have been made about the potential impact of the COVID-19 pandemic on online education. Some experts have predicted that the COVID-19 pandemic will negatively impact online education for various reasons (4). First, it was felt that the transition to online education could be difficult even given sufficient time for the transition process (5). Also, every area of the economy has been affected during the COVID-19 pandemic. As a result, college students have become financially vulnerable. Some students began to worry that they could no longer go to college after the pandemic. In addition, some faculty members and students were busy staying at home, spending time with their relatives, and managing them at home.

Challenges to online education reported so far in healthcare include problems with time management, use of technology tools, assessment of students, lack of communication, and face-to-face interaction (6). Moreover, online education may be uneven in terms of access and quality of teaching (4). Some students do not

have access to laptops or high-speed internet at home. In addition, older internet users benefit the least from online education due to reasons such as technophobia (7). Many teachers are themselves technophobic, meaning they are either anxious or unsure about dealing with computer hardware and software in their classrooms (8). Challenges to the online environment in an emergency may delay the adoption of technology-assisted education (9).

Conversely, some commentators have also predicted that the COVID-19 pandemic will positively impact, leading to broader acceptance of online and technology-supported education (4). Even before the COVID-19 pandemic, there was already a high growth and adoption of technology in education. Proponents believe that online education is as effective as traditional classroom education. Moreover, the transition to online education when the urgency is needed is the savior of the disturbing traditional education system (4). The support of faculty members is required in the transition to online education in universities. According to a study conducted in the United States, 80% of institutions surveyed offer some support to faculty for their online courses (10). This study aimed to identify and analyze the impact of the COVID-19 pandemic on online education at the Department of dental prosthesis technology (DPT) at Istanbul Aydın University in Istanbul, Turkey.

II. Material And Methods

This study was conducted with the Istanbul Aydın University Ethics Review Board (2021/637). This study was a cross-sectional study conducted in December 2021.

The researchers who conducted the study using Google Forms® (Google LLC, Mountain View, CA) developed a self-administered online questionnaire. The questionnaire included an introductory paragraph informing the participants about the study's aims, the confidentiality of their answers, and the freedom to refuse to answer any questions or withdraw from the study altogether. The survey contains closed questions. The questions included the participants' demographics and their experiences before and during the COVID-19 outbreak. We invited two faculty members and two students to test the initial questionnaire draft as part of the questionnaire validation process. The survey was adjusted based on their feedback.

To start the survey, we sent an introductory e-mail to the target audience of DPD students. The first e-mail informed the target population about the study's aims and asked for their participation. Then, the web link of the survey was sent to the target audience using the corporate e-mail system. Then, two follow-up e-mail reminders were sent to the same groups. Students who participated in the pilot test of the survey were excluded.

This study targeted students from close generations. Generations were classified by birth year as follows: Generation Y or Generation Y (1981-1996), Generation Z or Post-Millennium (1997-2012) [4]. Baseline and outcome characteristics are summarized using descriptive statistics as appropriate.

III. Result

A total of 158 people responded to the survey. 100 (60.1%) of the respondents were female, and 58 were male (54.8%) were born between 1997-2012 (Generation Z or Post-Millennials), 66 (31.7%) were born between 1981-1996 (Generation Y or Millennials). The characteristics of the participants in the study are shown in Tables 1 and 2.

Table no 1 :

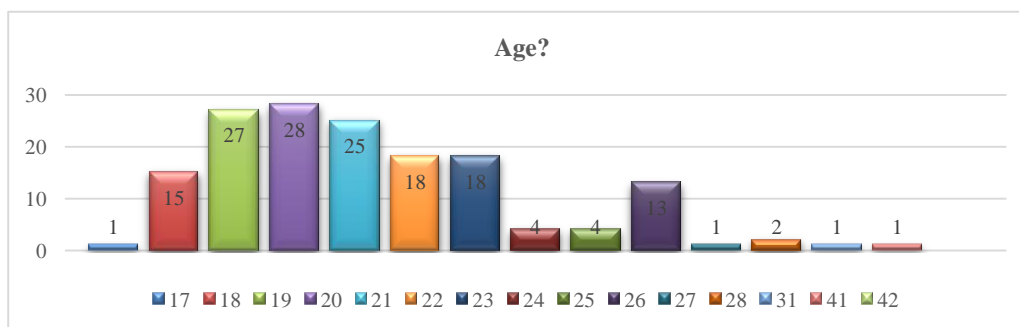


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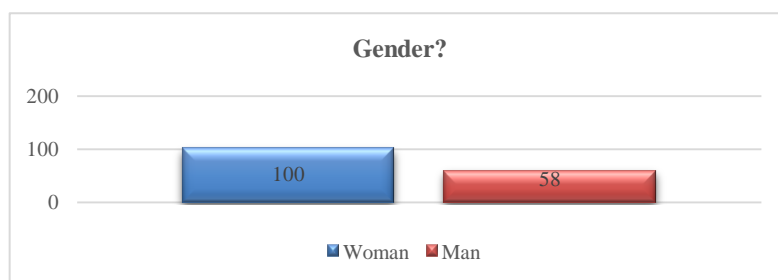
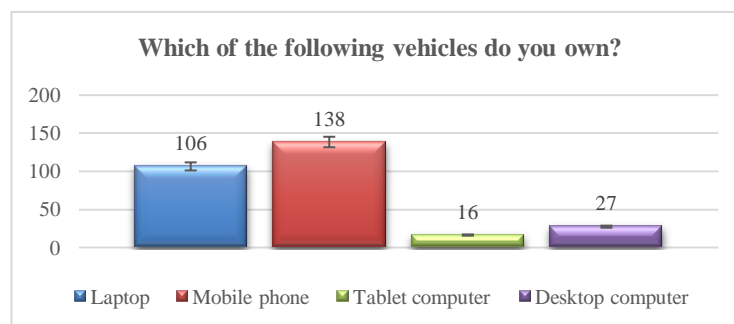
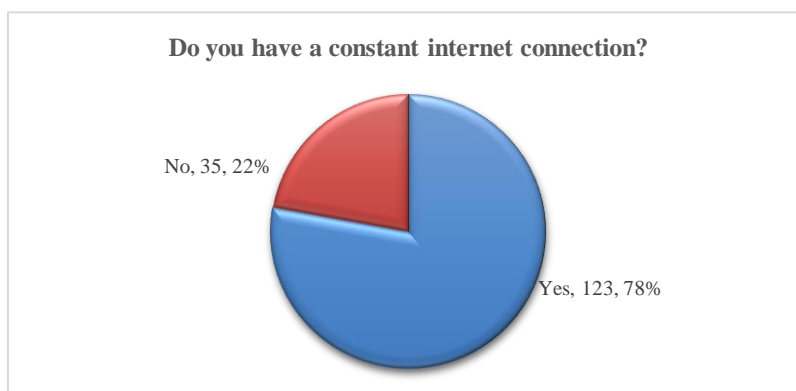


Table no 3 :



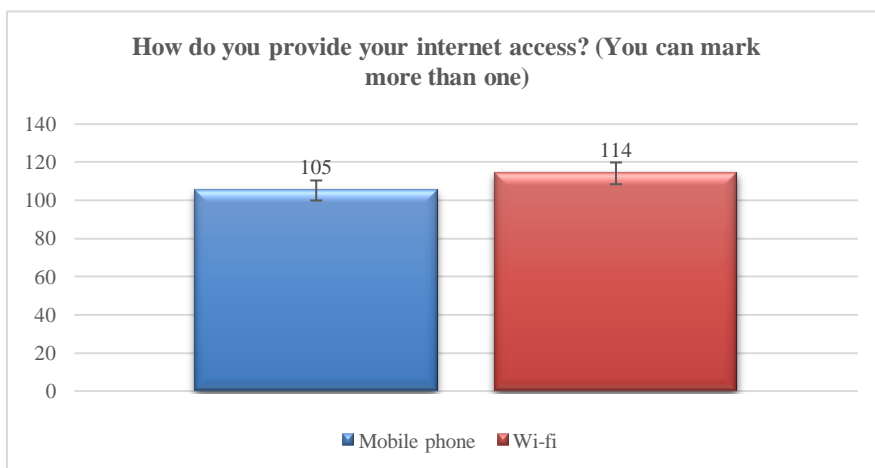
Respondents to the survey "Which of the following vehicles do you own?". They stated that they have a mobile phone at the highest rate and a laptop computer in the second place. In this question, it is a result that should be evaluated, while the highest rate of desktop computer ownership, which we think is in every home, is expected to be the highest. The level of addiction of respondents to mobile phones and laptop computers may have affected the result, and it may also have resulted from the perception in the participants' evaluation of desktop and tablet computers as an educational tool due to the subject of the survey. When evaluated in both cases, it is an issue that cannot be ignored that distance education applications increase technology addictions such as mobile phones and laptop computers. Seeing such negativities in the plans made, the necessity of planning studies emerges. The fact that desktop and tablet computers are not less seen as an educational tool is a situation that should be examined considering the advantages of this tool in reaching everyone. The fact that distance education applications are mainly carried out on the web version makes it more essential to expand this field.

Table no 4 :



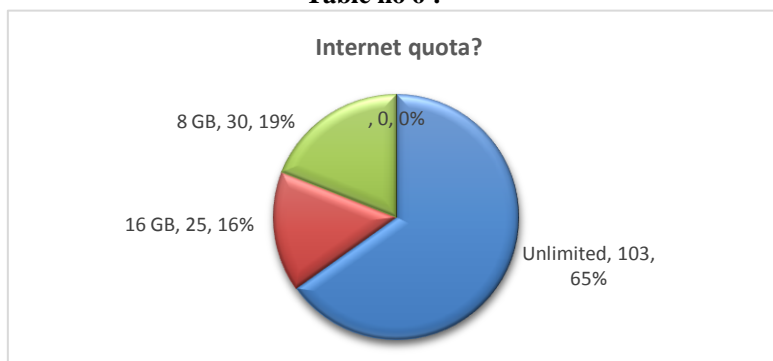
Most of the survey participants stated that they have uninterrupted internet access. However, the result may change since the survey was conducted online.

Table no 5 :



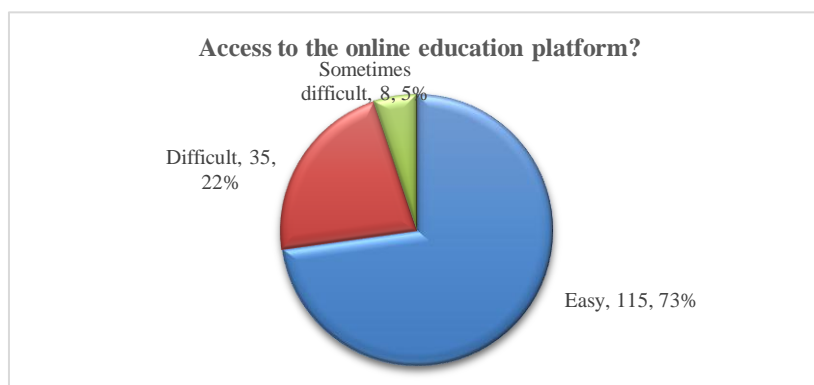
Participants declared that they provide their internet access equally via fixed internet lines and mobile phones. When we evaluate together the result that having a mobile phone is higher than having a computer in the previous questions and that all of the participants have internet access, we evaluate the result that a specific part of the users can access the internet through non-continuous means such as wi-fi.

Table no 6 :



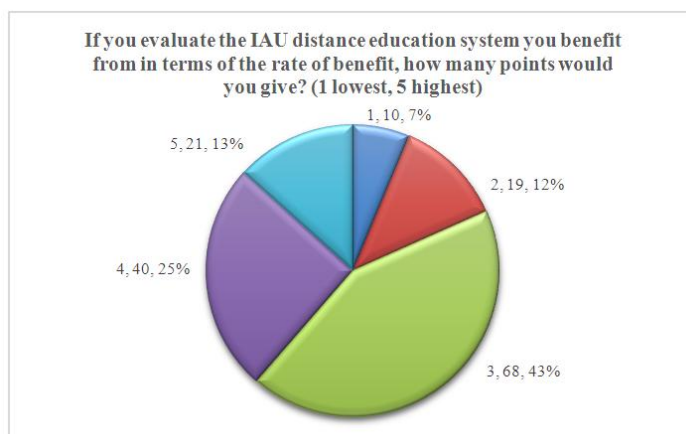
35% of the participants stated that they have a limited internet quota, especially 19% of them stated that they have an internet quota of up to 8Gb. This may cause students to stay away from video distance education tools.

Table no 7 :



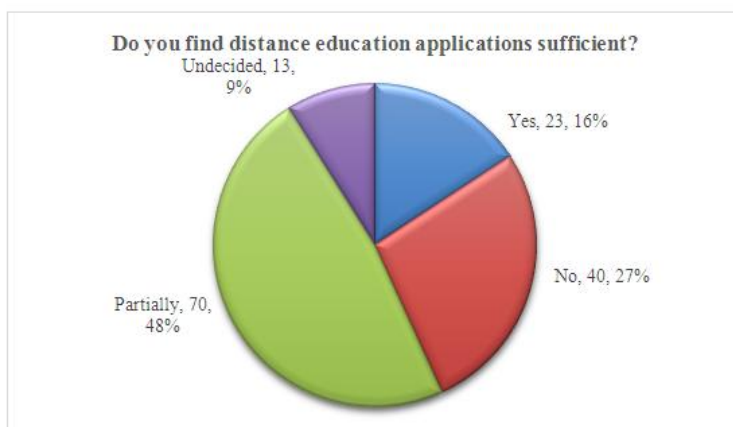
22 % of the survey participants declared that they do not have access to the distance education platform. The fact that the survey was conducted in an online environment causes us to evaluate that this rate may increase, especially in families where financial means are limited. Ensuring equality of opportunity in education reveals the necessity of doing many studies for specific opportunities to reach every student.

Table no 8 :



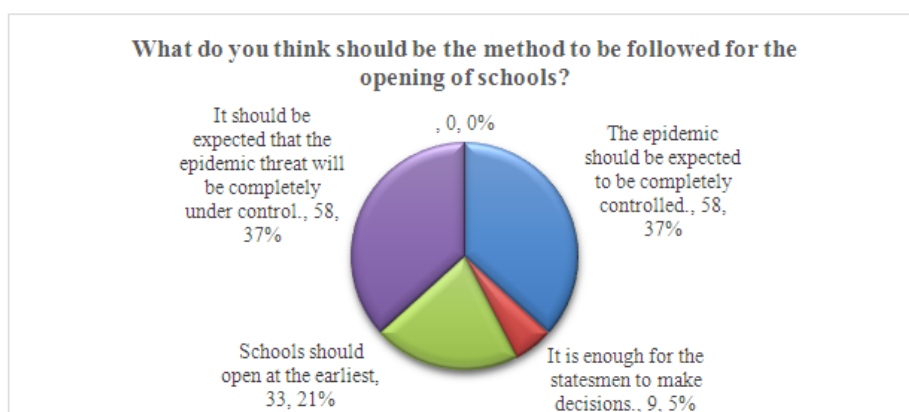
The question that we want to be ranked from the most useful to the least useful for the distance education platform was evaluated as the most useful by some and the least useful by others. With this question, we evaluate no confusion among students about accessibility, ease of use, and benefit level. As a natural consequence of the school's use of an education system specially planned for distance education, it is expected that the online education platform will be appropriate for the participants

Table no 9 :



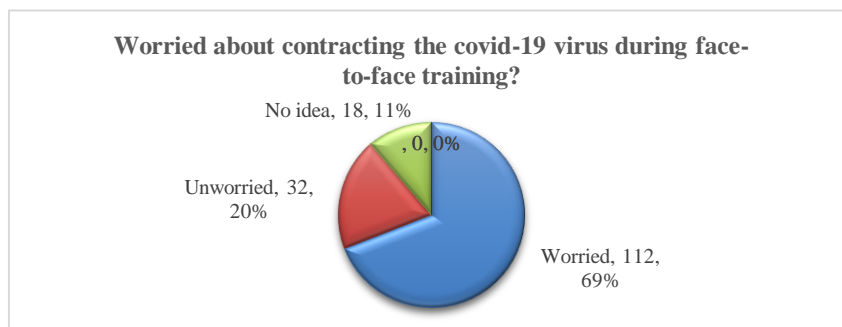
While 27% of the participants found the distance education applications insufficient, 48% evaluated it as partially sufficient and 16% as sufficient. 9% of the participants gave an undecided opinion. More than half of the participants find the distance education applications sufficient, causing us to evaluate that what can be done can be arranged to reach everyone.

Table no 10 :



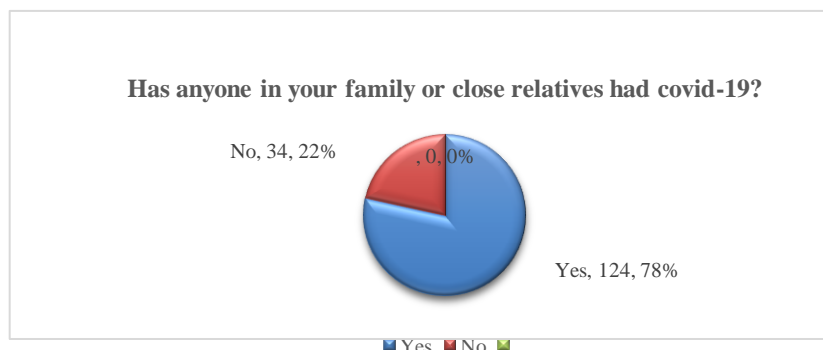
Survey participants answered, "Do you find distance education and face-to-face education equivalent in schools?" 68.8% answered no to the question. This result causes us to evaluate that distance education is never an alternative but a method applied in critical situations.

Table no 11 :



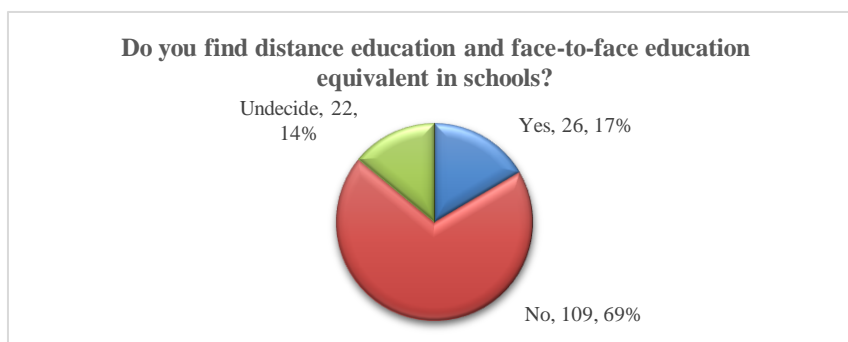
Participants stated that 94.4% expected the epidemic threat and the epidemic to be taken entirely under control for the opening of schools. We evaluate the necessity of the authorities to adopt an attitude that prioritizes the protection of the health of the society, especially students, in this regard.

Table no 12 :



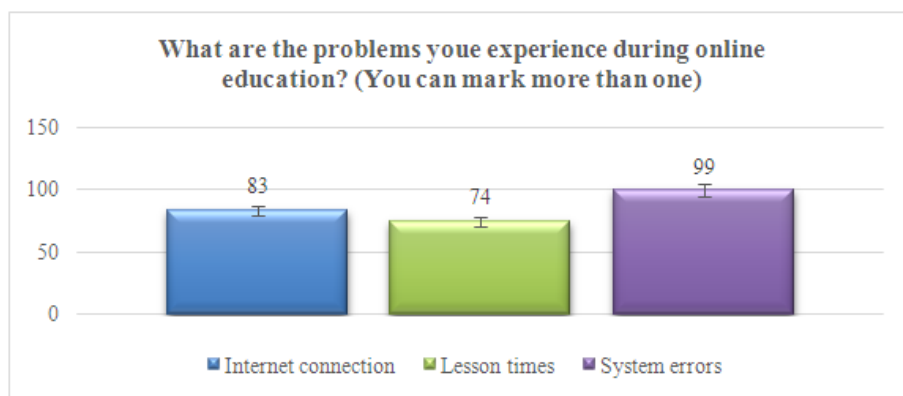
While the rate of participants who answered yes to the question "Has anyone in your family or relatives had a covid-19 infection?" was 78%, the rate of those who said no was 22%.

Table no 13 :



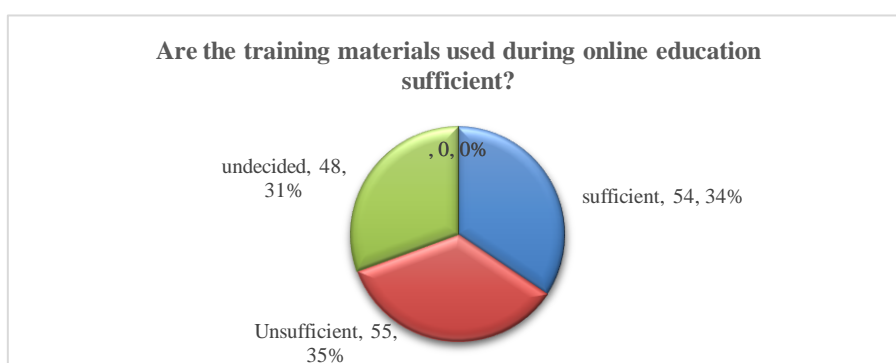
It is seen that there is a correlation between the fear of being infected during face-to-face education (69%) and the rate of covid-19 infection in family and relatives. Experiences that have been lived affect the anxiety rate.

Table no 14 :



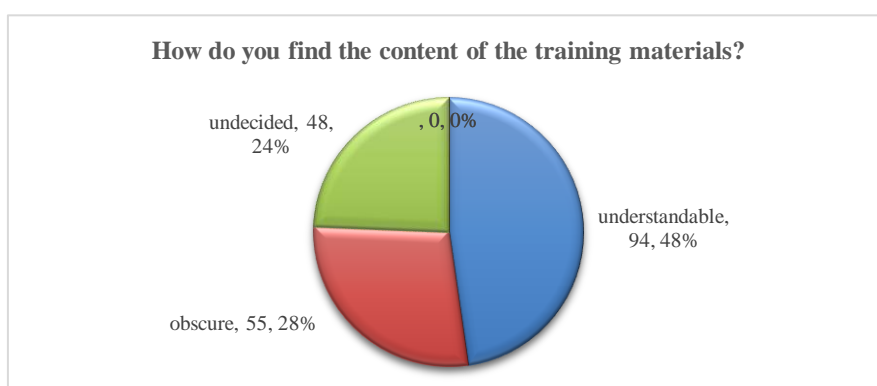
Participants stated that they experienced similar problems at almost the same rates. Elimination of internet connection problems, improvement of system servers, and evaluation of student demands in determining course hours will increase the efficiency of online education.

Table no 15 :



It is impossible to reach a clear decision about the materials' adequacy during the online training. In this regard, deficiencies should be identified in detail, and improvements should be made.

Table no 16 :



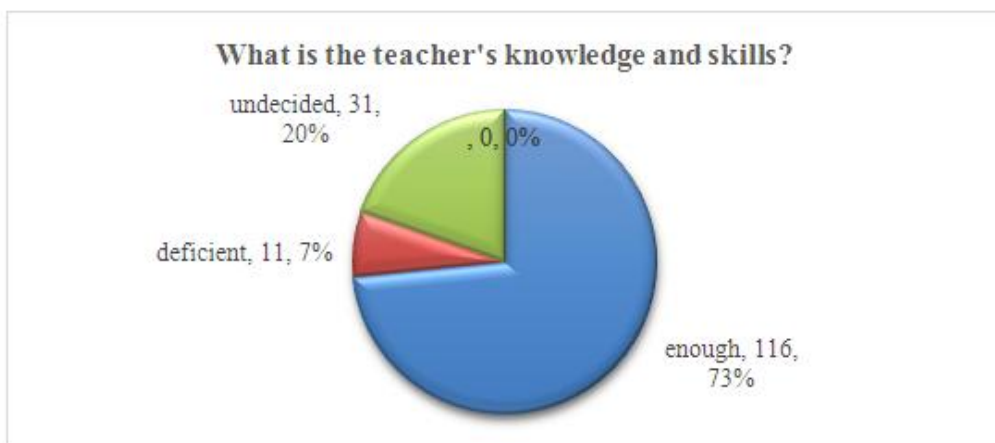
The ratio of those who found the content of the training materials understandable and those who found it indecisive and incomprehensible was almost equal. Deficiencies should be identified, and arrangements should be made for improvement.

Table no 17 :



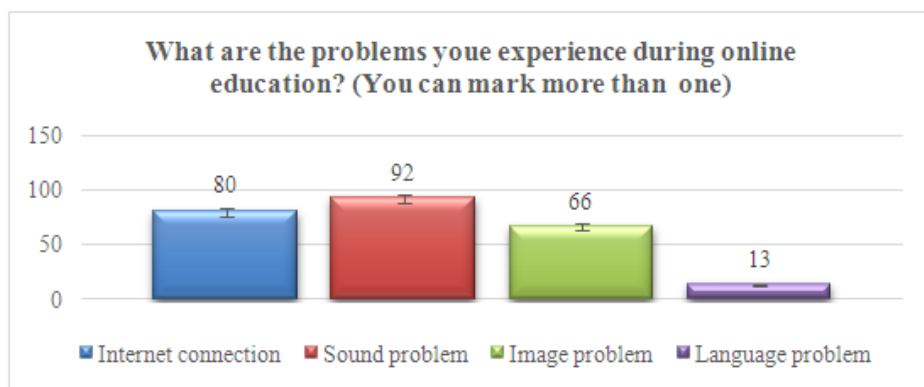
It was concluded that the duration of the lesson hours applied was ideal in the range of 30-45 minutes.

Table no 18 :



The knowledge and skills of the lecturer were found sufficient by the majority.

Table no 19 :



During the online training, the most challenging issues were internet connection and audio and video problems, which we thought were related to the service provider server. Few of the participants stated that the language of the course was problematic. We think that it is related to the language perception of international students. Improvements in Internet connection, audio, and video will increase the efficiency of online education

IV. Discussion

We are currently living through an unprecedented academic crisis. COVID-19 has profoundly affected many areas of our lives. Educational institutions around the world have been shut down and online education has suddenly become the norm. Under these circumstances, educators and students may have difficulties embracing the rapid transition to online teaching. Experts estimate that it may take 5-10 years to recover from this pandemic [4].

Due to the pandemic, face-to-face education was suspended at universities, and distance education continued uninterrupted as much as possible. Adobe Connect (Adobe Inc., CA, USA; 33.6%), Microsoft Teams (16.8%), and Perculus (Advancity, Istanbul, Turkey; 11.2%) are educational applications. Yuen and Telli reported that many software programs are used in all universities worldwide for e-learning, such as Zoom, as an alternative to face-to-face education (11,12). Mobile learning is increasing day by day in dentistry education as students prefer smartphones and iPad/computer tablets

During a health crisis, a reasonable number of dental prosthodontic students responded to our survey. Students participated in this work to ensure that their voices were heard. A recent study revealed that medical students are interested in decision-making regarding issues that may affect their education (6). Therefore, it is wise to involve faculty and students in renewing the way of education for the pandemic period. However, a low response rate was expected as dental prosthodontic students struggled to adapt to the online learning system amid the pandemic.

Most of the participants in the study belonged to Millennial or Post-M. The primary source of communication in both generations is social media, and both generations are knowledgeable about social media (4). This fact may partially explain the acceptance of online teaching and learning noted by most studies. In addition, in this study, most of them see online teaching as partially and wholly sufficient, but less of those see online teaching as insufficient. Similarly, previous studies have reported that hybrid learning is gaining more academic acceptance as it combines both forms of education (1). The effectiveness of hybrid learning depends on several factors, including adequate faculty training and institutional support (11).

In this study, participants' primary challenge for online education in DPT was communication. Students quickly learned that clear and concise feedback is essential when moving to a virtual environment in a state of emergency. The opportunity to improve communication pathways between college and students during COVID-19 can also improve communication in traditional face-to-face classes. Other difficulties were related to online student assessment, access to computer hardware or software and other technical barriers, lack of online education experience, anxiety caused by the pandemic. These challenges were similar to those encountered in transitioning to online education in non-emergency situations (6,8). Identifying these challenges can help identify online teaching and learning practices that can improve classrooms even as we return to traditional face-to-face teaching.

Although almost all of the students had both mobile and local internet data packages, the number of students connected to online courses by mobile phone was higher than those connected via laptop. Online learning may also have been used to access lessons, as there is no computer or laptop at home. Alternatively, mobile phones may be preferred because there are not enough computers to use more than one person at home. The mobile phone's size is much more suitable for students than laptops, but the screen display is significantly reduced. This may have affected their preference for computers with better picture and sound quality when attending online classes. This may be the cause of the problems experienced. Smartphones and laptops are shown as popular devices in this study and Khatoon (13). Another study showed great interest in using the iPad/tablet for future lessons (14). It is not in agreement with the results of this study. Tablet computers were the least preferred device in this study.

Despite these challenges, the COVID-19 pandemic has positively impacted student acceptance of online education. Specifically, 67% of dental technician students reported that the pandemic positively impacted online learning. In a recent survey of more than 400 college students whose schools had recently switched to online education due to the COVID-19 pandemic, 60% of students reported that they were somehow prepared for the transition. Also, many of the study participants dreamed of integrating the expertise gained during the pandemic into their future teaching/learning strategies. However, integrating the skills necessary for online teaching into practice requires adequate faculty professional development (4).

The coronavirus caused universities to complete the current year with distance education. Distance education is often considered the best solution; however, the lack of internet and computers is one of the most important problems students face (15). While some universities have prepared their programs and started

distance education on March 23, 2020, some have extended the transition to this education system over time. There is currently no single distance education method for universities in these extraordinary conditions. Universities use different methods according to the existing infrastructure and the number of students; while some provide simultaneous distance education, some share the course content they have uploaded to the system. However, these methods only cover theoretical lessons. For courses that require practice, it is aimed to provide make-up courses in the summer after the epidemic ends (16). Since dentistry requires intensive clinical practice and severe theoretical education, this deficiency causes inevitable anxiety in students (17). In this study, most dental prosthesis technician students (69%, n=109) expressed that the distance education model is not an adequate substitute and is not as effective as face-to-face education (17%, n=26). Students think this way due to their views on dental prosthesis technician education, which consists of theoretical and practical components. Jordan et al. similarly, it has been reported that interactive, formal didactic education is more effective than asynchronous online education (18). However, other studies in the literature report that dental students generally have positive attitudes towards online learning. (19). Interpreting these reactions as positive feedback will be natural due to distance education as an emergency solution during the pandemic. The difference between the two studies is that dental students need an adequate physical environment and psychomotor skills during their academic years that cannot be replaced by distance learning, as conducted during the COVID-19 pandemic. (20). In addition, while online learning modules were integrated with face-to-face learning in these studies, learning was carried out almost entirely through distance education (i.e., fully online). It has been previously reported that fully online learning leads to a loss of sense of reality, and learning is dependent mainly on dental students' commitment to classes. (21).

However, students' comments on the way of teaching were different. Some students praised online education for removing traditional teaching barriers. With access to available technologies and the availability of resources, schools can tailor the learning experience for each student. Students also believed that the quality of teaching did not decrease in the transition to online education. Others reported that the first few online sessions were problematic. Faculty and students had to adapt to the online environment. Other students were not satisfied with the online learning experience. They wanted to return to traditional face-to-face education immediately after the pandemic. The study had several limitations. We conducted the study at a private university where most students are financially secure during the initial phase of the COVID-19 pandemic. Also, we did not record the students' grade point average (GPA), as the GPA may affect the answers. Finally, there are many online universities, but we often do not value their degrees as much as those provided by real universities.

For this reason, medical schools and students tend to favor the blended experience much more than the purely online one. As a result, the study may have limited generalizability (21). Despite these limitations, we believe the study provides insights into this topic.

Internet problems are among the most critical problems faced by students within the scope of distance education. (22). In this process, which has become mandatory due to the COVID-19 pandemic, it has become important to determine the infrastructure of each university, the content of education, the ability of educators to use this technology, and whether students have access to this technology. Some foundation universities in Turkey stated that they would provide their students with hardware or internet access. However, since it may not be possible to provide such support to students at public universities with their limited budgets, students' perspectives at public universities may differ from those studying at foundation universities. Our findings revealed that dental prosthesis technician students at foundation universities have negative thoughts about distance education.

Overall, students were optimistic about the acceptability and usability of e-learning, the quality of the instructor's instruction, and the acceptability of this new form of learning. However, they were hesitant to replace traditional courses with online-only education, a finding reported by others (23). Students' use of traditional courses can explain students' negative and indecisive attitudes towards online education.

One method of increasing student motivation and performance is to adapt teaching approaches to meet different learning style preferences for individual students (24). Knowing students' learning style preferences will help develop the most effective teaching approaches (25). Science students have various learning style preferences, and the two genders have significantly different learning styles (26,27). Evaluating education styles, the VARK system classifies learning according to student's sensory preferences (27). These sensory preferences fall into four categories: visual (V-learners: drawings, pictures, diagrams, animations), auditory (A-learners: lectures, lectures, recorded lessons), literacy (R learners: reading textbooks, grade receiving), and kinesthetic (K-learners: physical activities that involve touching, performing an activity). Students often use all of these sensory learning modes but often have an individual preference or set of preferences dominated by visuals (28). For example, it has been documented that dental students prefer visual learning over a language with a higher percentage (29). In the context of the associate degree prosthesis technician program, students who are visual learners can benefit most from electronic education. Incorporating lectures and seminars (A-learners), clinical practice and screening (K-learners), and textbooks (R-learners) into the online education curriculum to

complement all-encompassing online education curricula for learning that incorporates a four sensory learning style approach will increase productivity.

The shock caused by the epidemic in the entire education system was sudden and unprecedented. We realized that we could not teach with traditional methods quickly because we had unconventional resources and limited opportunities. Multidisciplinary approaches, clinical settings have been abandoned and teaching as we know it has been suspended with only one solution to being creative online. Online teaching is still considered rudimentary in many institutions, and its clinical application is not possible. As a result, teaching clinical medical skills has become the biggest challenge.

V. Conclusion

While the rate of those who found online education applications partially and completely sufficient during the Covid pandemic period was the same as those who found it insufficient, the rate of those who were undecided was 13%. 70% do not find online education equal to face-to-face education in dental technician education. While the rate of being worried about being infected in face-to-face education was 68%, the majority thought that the epidemic threat and the epidemic should be controlled entirely. All participants complained about internet connection, class hours, and system errors. The proportion of those undecided about the adequacy of online education was equal to those who were positive and negative. The materials were comprehensible 48% and sufficient 38%, while 28% were incomprehensible and 35% were insufficient. The majority were positive about the duration of the lessons and the knowledge skills of the trainer. Although online education seems to be an alternative to dental prosthesis technician education during the pandemic period, online education applications, quality, and content of educational materials should be improved. In the short term, it is thought that online education in dental prosthesis students cannot be equivalent to face-to-face education unless it is compulsory.

References

- [1]. Orleans M. Cases on critical and qualitative perspectives in online higher education. *Cases on Critical and Qualitative Perspectives in Online Higher Education*. 2014.
- [2]. Edginton A, Holbrook J. A Blended learning approach to teaching basic pharmacokinetics and the significance of face-to-face interaction. *Am J Pharm Educ*. 2010;74(5).
- [3]. Hixon E, Buckenmeyer J, Barczyk C, Feldman L, Zamojski H. Beyond the early adopters of online instruction: Motivating the reluctant majority. *Internet High Educ*. 2012;15(2).
- [4]. Rajab MH, Gazal AM, Alkattan K. Challenges to Online Medical Education During the COVID-19 Pandemic. *Cureus*. 2020;
- [5]. Esani M. Moving from face-to-face to online teaching. *Clin Lab Sci*. 2010;23(3).
- [6]. Rajab MH, Gazal AM, Alkawi M, Kuhail K, Jabri F, Alshehri FA. Eligibility of Medical Students to Serve as Principal Investigator: An Evidence-based Approach. *Cureus*. 2020;
- [7]. Nimrod G. Technophobia among older Internet users. *Educ Gerontol*. 2018;44(2-3).
- [8]. Rosen LD, Weil MM. Computer availability, computer experience and technophobia among public school teachers. *Comput Human Behav*. 1995;11(1).
- [9]. Chiasson K, Terras K, Smart K. Faculty Perceptions Of Moving A Face-To-Face Course To Online Instruction. *J Coll Teach Learn*. 2015;12(3).
- [10]. Lion RW, Stark G. A Glance at Institutional Support for Faculty Teaching in an Online Learning Environment. *Educ Q*. 2010;33.
- [11]. Yuen J, Xie F. Medical education during the COVID-19 pandemic: Perspectives from UK trainees. Vol. 96, *Postgraduate Medical Journal*. 2020.
- [12]. Telli SG, Altun D. Coronavirüs ve Çevrimiçi (Online) Eğitimin Önlenebilir Yükselişi. *Üniversite Araştırmaları Derg*. 2020;3(1).
- [13]. Khatoun B, Hill KB, Walmsley AD. Dental students' uptake of mobile technologies. *Br Dent J*. 2014;216(12).
- [14]. Gosper M, Malfroy J, McKenzie J. Students' experiences and expectations of technologies: An Australian study designed to inform planning and development decisions. *Australas J Educ Technol*. 2013;29(2).
- [15]. Saeed SG, Bain J, Khoo E, Siqueira WL. COVID-19: Finding silver linings for dental education. *J Dent Educ*. 2020;84(10).
- [16]. Machado RA, Bonan PRF, Da Cruz Perez DE, Martelli Júnior H. COVID-19 pandemic and the impact on dental education: Discussing current and future perspectives. Vol. 34, *Brazilian Oral Research*. 2020.
- [17]. Deery C. The COVID-19 pandemic: implications for dental education. Vol. 21, *Evidence-Based Dentistry*. 2020.
- [18]. Jordan J, Jalali A, Clarke S, Dyne P, Spector T, Coates W. Asynchronous vs didactic education: It's too early to throw in the towel on tradition. *BMC Med Educ*. 2013;13(1).
- [19]. Wang K, Zhang L, Ye L. A nationwide survey of online teaching strategies in dental education in China. *J Dent Educ*. 2021;85(2).
- [20]. Quinn B, Field J, Gorter R, Akota I, Manzanares MC, Paganelli C, et al. COVID-19: The immediate response of European academic dental institutions and future implications for dental education. Vol. 24, *European Journal of Dental Education*. 2020.
- [21]. Chang Lo H. Utilizing computer-mediated communication tools for problem-based learning. *Educ Technol Soc*. 2009;12(1).
- [22]. Pontual MLA, Do Nascimento EHL, Da Perez DEC, Pontual AA, Ramos-Perez FM. Challenges in oral radiology teaching during COVID-19 pandemic. Vol. 49, *Dentomaxillofacial Radiology*. 2020.
- [23]. Aly M, Willems G, Carels C, Elen J. Instructional multimedia programs for self-directed learning in undergraduate and postgraduate training in orthodontics. *Eur J Dent Educ*. 2003;7(1).
- [24]. Miller P. Learning Styles: The multimedia of the Mind. Research Report. *Learn Styles Multimed Res Rep*. 2001;
- [25]. Tanner K, Allen D. Approaches to biology teaching and learning: Learning styles and the problem of instructional selection - Engaging all students in science courses. Vol. 3, *Cell Biology Education*. 2004.
- [26]. Lujan HL, DiCarlo SE. First-year medical students prefer multiple learning styles. Vol. 30, *American Journal of Physiology - Advances in Physiology Education*. 2006.
- [27]. Wehrwein EA, Lujan HL, DiCarlo SE. Gender differences in learning style preferences among undergraduate physiology students. *Am J Physiol - Adv Physiol Educ*. 2007;31(2).

- [28]. Ecclestone K, Hall E. Learning styles and pedagogy in post 16 education: a critical and systematic review. *Int J Clin Leg Educ Ed.* 2004;
- [29]. Murphy RJ, Gray SA, Straja SR, Bogert MC. Student Learning Preferences and Teaching Implications. *J Dent Educ.* 2004;68(8).

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