ANALYZING POST-COVID-19 TEACHING METHODS IN HIGHER EDUCATION: A QUALITY AND EXPERIENCE BASED DECISION-MAKING STUDY

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ABSTRACT

As the world suffers from the Covid-19 pandemic for more than a year, a new way of life has begun for people in their professional as well as private lives. Therefore, previous methods, habits or procedures during the pandemic may no longer be valid. Educations, being one of the most affected sectors during this period, together with its broad related environment have been significantly impacted. In this context, the present study focused on higher education. Thus, the aim of this study was to assess the different teaching methods after the Covid-19 pandemic period from the point of view of lecturers working in the health services department of a state university in Turkey. Accordingly, two hierarchical models: service quality and experience based were developed and the opinions of lecturers were obtained using one of the multi criteria decision-making (MCDM) methods, namely the Analytic Hierarchy Process (AHP). Face-to-face was found to be the optimum teaching method for both the models while the rest of the teaching alternatives were ranked separately in order of importance for these two models. Moreover, criteria were prioritized for the first and the second models, respectively. Limitations of the study including future research directions were identified.

Keywords: *Teaching methods, quality management, decision- making, Covid-19 period, health services department.*

I. INTRODUCTION

The Covid-19 pandemic disrupted routines throughout the world and styles of doing businesses have begun to change dramatically. New ways of working have emerged during the pandemic and they are gradually being adopted by people and organizations. Various sectors and/or industries from manufacturing to services are affected by this new phase and their reactions occur differently in terms of timing or manner. Education is one of such sectors that have been deeply influenced during the pandemic.

Education is considerably a large sector with its various shareholders and different educational stages such as preschool, primary, secondary and higher education. Taking into consideration the magnitude of the population it addresses, it is clear that the effects of the decisions made within the education sector not only concern students or teachers/ lecturers but also society as a whole. Since the structure of the education

sector is specific, complex and composed of a long chain, managing this sector has become much more difficult especially during the pandemic.

Education is conducted differently in various countries. In Turkey, preschool, primary and secondary stages of education are coordinated by the Ministry of National Education and the higher education stage by the Council of Higher Education. Countries all over the world took different actions while carrying out their educational activities during the pandemic period. As it was a challenge to make reasonable decisions in such a difficult time, it has led many countries to apply trial and error methods or follow the examples of other countries' models. Turkey performed different applications from time to time by taking into consideration the examples of other countries, the progress of the pandemic in the country and in the world, and recommendations of the Scientific Group of the Ministry of Health. Within the context of these applications, face-to-face teaching was initiated when the number of cases decreased and distance education was applied when the number of the cases increased. However, this situation has been valid for the pre-higher education but not for the higher education institutions, namely the universities. In other words, face-to-face education was not conducted in the universities and courses were performed in a distance-based manner with a few exceptions. The reason being that the movement of students living and receiving their higher education in different cities throughout the country would further increase the risk of infection. Universities spent almost the whole pandemic period with distance education and only some technical departments that required applications or internships applied partial face-to-face education for a short period. Thus, a hybrid model composed mainly of distance education and partly face-to-face was adopted. Such internship programs or similar ones were conducted in most departments of the medicine faculties, health sciences faculties including health services vocational schools due to the compulsory state of their internship programs.

In accordance with these statements, the aim of this study was to determine and analyze the optimal teaching models during the new post-pandemic phase from the point of view of the lecturers. In this context, the health services department of a state university together with its academic staff working and giving courses in the department were the respondents and/or decision-makers of the study. The opinions/judgements of the lecturers were taken into account based on related criteria (*application based* and *quality based*) and the importance in the ranking of these criteria including alternative teaching models were identified.

The rest of the article is organized as follows. The next section presents the literature review, followed by the methodology and findings. Finally, discussions of the research results are presented.

II.   LITERATURE REVIEW

Quality can be defined as the ability of a product or service to consistently meet or exceed customer requirements and/or expectations (Stevenson, 2015). As mentioned in the definition, the difference between the product and service aspects of quality must be taken into account. According to Fitzsimmons and Fitzsimmons (2011),

service quality assessment is conducted during the service delivery process and each customer contact is referred to as a moment of truth, an opportunity to satisfy or dissatisfy the customer. Although a number of dimensions of service quality exist in the literature, a widely used set of these dimensions was developed by Zeithaml et al. (1990): tangibles, reliability, responsiveness, assurance, and empathy. Most of the studies in various sub-sectors of the service sector that aimed to evaluate service quality were performed using these five dimensions and a scale called the SERVQUAL. For example, local government (Wisniewski, 2001), e-commerce (Alzola & Robaina, 2005), tourism (Home, 2006), higher education (Ahmad & Francis, 2006), education (Chatterjee et al., 2009), banking (Bose & Gupta, 2013), logistics (Roslan et al., 2015), harvesting services (Erlandsson et al., 2017), and healthcare (Behdioğlu et al., 2019) were among such studies. Zeithaml et al. (1990) developed the SERVQUAL scale in order to assess the service quality level of an organization and to determine its strengths and weaknesses. These five service quality dimensions, in terms of higher education, are explained as follows (Yeo, 2009):

Tangibility: Physical facilities, equipment and appearance of university staff.
Reliability: The ability to perform the promised service dependably and accurately.
Responsiveness: The willingness to help students and provide prompt advice and service.
Assurance: The ability of university staff to demonstrate competence, courtesy, credibility and security.
Empathy: The ability to care and provide individualized attention to students.

There are various types of teaching models utilized in higher education. Classical (face-to-face), distance (online), and hybrid (face-to-face and online) are among such teaching models. A novel teaching model including artificial intelligence (AI), Industry 4.0 or smart applications can be added to this list as the fourth one.

However, different categorizations of teaching types or models exist in the literature and many of these categorial concepts have similar definitions or can be used interchangeably. For example b-learning which is a teaching and learning approach combining multiple delivery media (Olelewe & Agomuo, 2016), is close to the hybrid teaching model in terms of conceptual usage. Another fact is that, the new one, namely the novel teaching model can be seen as a recently emerged model employing cutting edge technological or innovative applications such as AI, Industry 4.0 or smart. For example, Coccoli et al. (2015) proposed a smarter university model in which knowledge is a common heritage of teachers and students. They believe that smart universities must improve their effectivenesses, performances, flexibilities and keep pace with the novel requirements of modern society and the industry in addition to adopting the most contemporary technologies and systems.

On the other hand, it must not be ignored that teaching in higher education requires a wide variety of knowledge and abilities (Lindberg, 2018). Quality higher education does not have a pre-determined structure and it is necessary for teaching staff to be competent in terms of controlling, reviewing and continuously updating information (Oliveras, 2014). Moreover, evaluating the quality or effectiveness of teaching varies from models to models. For example, the evaluation of distance (online) teaching

model is different compared to the traditional teaching models (Markova et al., 2017). Higher education quality is strictly related to the quality of teaching and students are the direct receivers of this service (Nikolaidis & Dimitriadis, 2014).

It was observed in the literature that a lot of studies existed including specific course based analyses or general teaching model evaluations. This study was mainly aimed at assessing the post pandemic teaching models however, as expected related literature is fairly scarce. Therefore literature review of pre-pandemics is given briefly in the following paragraphs followed by the post-pandemic part.

For example, Yeo (2009) investigated the service quality in higher education by focusing on an engineering faculty in Singapore. Customer orientation, course design/delivery and support services were found as the most important factors for its students. Kim et al. (2011) examined the factors that influence social presence and learning satisfaction in higher education by focusing on distance method in a cyber university in Korea. Results of the study revealed that media integration and quality teaching of instructors were significant predictors of social presence and learning satisfaction. Fook (2012) performed a study in a higher education organization in the USA to evaluate the level and factors related to teaching practices among students and instructors. Findings of the study showed that students' choice concerning feedback and active learning matched transformative learning. Orhan Özen et al. (2014) tried to develop the perceptions and feelings of educators in using virtual (online) method for their teaching in higher education in Turkey. In order to collect data, in-depth semi-structured interviews were conducted among educators from different universities where educational benefits, limitations and ways of application of online education were discussed. Certa et al. (2015) evaluated the efficiency of an academic master's course offered by the University of Palermo and used AHP and fuzzy logic methodology. Nasser-Abu Alhija (2017) performed a study in Israeli higher education with a sample consisting of 2,475 university students. The opinions of the students about teaching quality and the relationship between their opinions and background features were determined. Assessment was found as the most important, while long-term student development as the least important teaching dimension. Owusu-Agyeman et al. (2017) conducted a study to assess the effects of continuous development programs on the conceptions of lecturers in the teaching and learning processes in a higher education setting using fuzzy AHP. Patterson et al. (2017) investigated the perceptions of work-readiness of new graduate nurses in their cross-sectional study based on the thought of an existing gap between academic theory and nursing practice. The findings of the study showed that the university fellowship program could enhance graduate nurses' perceptions of work readiness. Cantabella et al. (2019) conducted a study in a Spanish university in order to analyze student behavior based on different teaching methods by considering the number of access to learning management systems and using big data. The results showed the different approaches of students in the e-learning environments in terms of online, face-to- face and hybrid type modules.

The true evaluator of the quality of a product or service is the customer and when education is taken into consideration, students' opinions become the focal point.

However, in this study, we tried to look from another perspective that is from the viewpoint of the lecturers. As stated earlier, with the beginning of a new phase after the Covid-19 pandemic, teaching styles have been significantly affected. For instance, Longhini et al. (2021) stated that the Covid-19 pandemic caused social distancing and physical isolation all over the world and this situation forced universites to apply distance learning. No matter which type of teaching method is adopted, the ability or capability of a lecturer is extremely important and being a lecturer becomes more challenging in university departments which include applied training like health services.

This study differed from previous studies in two aspects. Firstly, the sample of the study composed of one of the subfields of the education sector i.e., the health services department of a state university. During the pandemic period the students of this department received their education in a hybrid type model; both face-to-face and distance- based. Secondly, in this study, in addition to the first model which included quality based criteria, another model which adopted experience (application) based criteria were utilized. This approach made it possible to compare the two models.

III.   METHODOLOGY

The study was conducted in the health services vocational school of a state university located in the central Anatolian region of Turkey. This vocational school was established in 1998 and it applies compulsory internship programs and offers associate degrees to its students. There are four departments in this school, with 23 lecturers and about 1200 students. This school was selected as a research site because the students of this department not only received distance education, they also received a hybrid type of education model; both face-to-face and distance-based during the pandemic period. Therefore, this made it possible to analyze and compare different teaching styles.

The data consisted of the opinions of a group of academic staff who are lecturers in this school and the data was obtained by way of face-to- face interviews with this group in March 2021. They can be named as the group of decision-makers and the members of this group consisted of 10 lecturers who have five to 10 years of work experience. Among the lecturers working in this school, the group of lecturers who volunteered to participate in the present study as decision-makers were asked to assess the alternative teaching methods used during the pandemic period. The AHP method was used to reveal the opinions of the lecturers about the teaching models used during the post-pandemic period. This assessment was made according to two different models. In the first model using service quality based criteria and in the second model using experience based criteria.

Analytic Hierarchy Process

The Analytic Hierarchy Process (AHP) is one of the MCDM methods developed by Saaty (1980) in the beginning of the 1980s. It uses a hierarchical structure, makes pair-wise comparisons and incorporates the evaluations of decision-maker(s) into an overall decision (Wu et al., 2006). These pair-wise comparisons are made using a nine point scale and the results are summarized in a matrix (Liao & Kao, 2010). Table 1 shows the

nine point scale (Sun et al., 2017). As can be seen from Table 1 when two factors are compared against each other by the decision-maker "1, 3, 5, 7, and 9" values are used.

Table 1

The 9 Point AHP Scale

Intensity of Importance	Definition
1	Equal importance
3	Weak importance
5	Moderate importance
7	Strong importance
9	Extreme importance
2, 4, 6, 8	Intermediate values

However, when the decision-maker hesitates between these values, she/he can use intermediate ones (2, 4, 6, and 8) and when the direction of comparison between two values changes, it becomes a reciprocal comparison and then reciprocal values (1/2, 1/3, …,1/8, 1/9) are used (Delgado-Galván et al., 2010). Application process of the AHP method starts with structuring a decision-making problem into a hierarchy by stating the overall goal, criteria, and alternatives (Mukeshimana et al., 2021).

Each stage of the hierarchy is linked and in this context, the top of the hierarchy is linked to the center of the hierarchy. This is done in a similar way for the center and bottom of the hierarchy (Doğan & Akbal, 2019). These connections are made by the decison-makers (experts) in the form of pairwise comparisons using the AHP scale (Table 1).

Each pairwise comparison is indeed a matrix and normalization (dividing each value by the sum of all the values of its column) is applied to all matrices and then the average values of the rows of these normalized matrices are obtained. These average row values are the priority values of the corresponding criteria (Doğan & Uçak, 2018).

The consistency index (CI) is calculated using the formula of CI = $(\lambda_{max} - n) / (n - 1)$. Here, λ_{max} is the maximum eigenvalue and n is the dimension of the pairwise comparison matrix. Now, the consistency ratio (CR) can be found using the CR = CI / RI formula, where RI is the Random Index values (Khashei-Siuki et al., 2020). Table 2 shows the RI values (Taylor, 2013). N, in Table 2, is the number of items that are compared.

Table 2

The RI Values

n	2	3	4	5	6	7	8	9	10
RI	0	0.58	0.90	1.12	1.24	1.32	1.41	1.45	1.51

The judgments are considered acceptable if CR ≤ 0.10 (Carra et al., 2019). The overall weights for the alternatives are found by multiplying their weights by the priority values of the criteria and then summing up the obtained values for each

alternative (Mastrocinque etal., 2020).
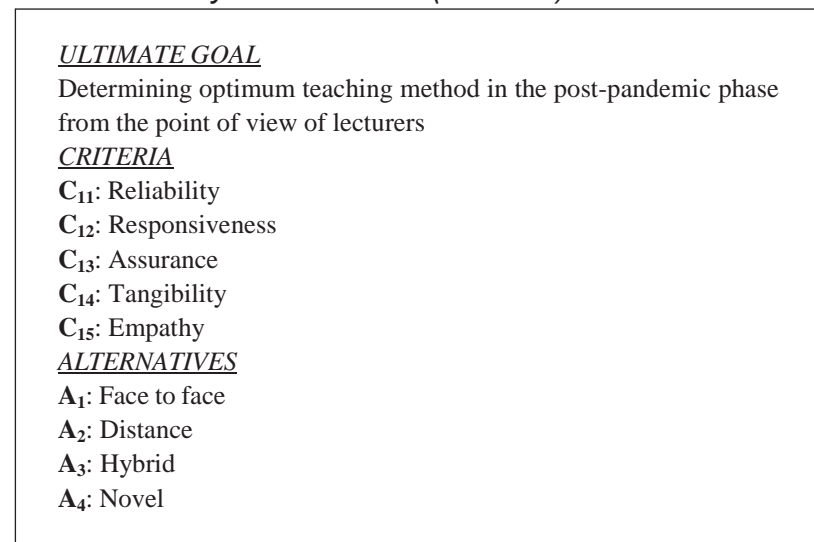
Data Analysis and Procedure

Two hierarchical models were developed and the opinions and/or judgments of the lecturers were evaluated using one of the MCDM methods, the AHP. The structural and hierarchical pattern of the AHP method was initially explained and illustrated to this group of decision-makers and by doing so it enabled them to make effective and consistent pairwise comparisons in a timely manner.

IV.   RESULTS

Two models (first model: service quality based and the second model: experience based) were developed and the hierarchical framework of both models were built. These two models are depicted in Figures 1 and 2, respectively.

Figure 1
Service Quality Based Model (Model 1)

ULTIMATE GOAL
Determining optimum teaching method in the post-pandemic phase
from the point of view of lecturers
CRITERIA
C_{11}: Reliability
C_{12}: Responsiveness
C_{13}: Assurance
C_{14}: Tangibility
C_{15}: Empathy
ALTERNATIVES
A_1: Face to face
A_2: Distance
A_3: Hybrid
A_4: Novel

It can be seen from Figures 1 and 2 that the hierarchies consist of three levels: goal, criteria and alternatives. The only difference between these two models is the level of criteria. As mentioned before Model 1 used the service quality based criteria, while Model 2 used the experience based criteria. We also utilized this difference for naming the models.

There is a total of 12 matrices (a 5x5 type matrix and five 4x4 matrices for both the first and the second models) that are referred to as pairwise comparison matrices. While applying the methodology, we followed in sequence all the steps of the AHP method as described in the preceding section. A group of lecturers working and giving courses in this department were selected as the decision-makers and they were asked to make evaluations concerning the teaching methods and criteria. These evaluations reflected the common views of the lecturers who consented to be interviewed and to be

the decision-makers in the study. Evaluations were made as pairwise comparisons using the basic scale in Table 1. Table 3 shows the pairwise comparison matrix of the criteria regarding the first model.

Figure 2
Experience Based Model (Model 2)

ULTIMATE GOAL
Determining optimum teaching method in the post-pandemic phase from the point of view of lecturers

CRITERIA
C_{21}: Lecturer's feelings of comfort and good mood while teaching.
C_{22}: Lecturer's capability in using course materials.
C_{23}: Lecturer's effectiveness in terms of communicating with students.
C_{24}: Lecturer's competence in maintaining students' attention, interest, and enthusiasm.
C_{25}: Lecturer's ability in establishing and maintaining class control.

ALTERNATIVES
A_1 : Face to face
A_2 : Distance
A_3 : Hybrid
A_4 : Novel

Priority values (weights) and consistency calculations were made by using this matrix (Table 3) and the AHP procedure. Table 4 shows the final state of the pairwise comparison matrix of the criteria regarding the first model.

It can be seen from Table 4 that weights/priority values of the criteria with respect to goal are ready in the PV column: reliability (0.40), responsiveness (0.08), assurance (0.31), tangibility (0.17) and empathy (0.04). It is clear that reliability was the leading criterion followed by assurance, tangibility, responsiveness, and empathy.

Table 3
Pairwise Comparisons of Criteria with Respect to Goal (Model 1)

	Reliability	Responsiveness	Assurance	Tangibility	Empathy
Reliability	1	5	2	3	7
Responsiveness	1/5	1	1/4	1/3	3
Assurance	1/2	4	1	4	6
Tangibility	1/3	3	1/4	1	7
Empathy	1/7	1/3	1/6	1/7	1

Table 4
Final Pairwise Comparisons of Criteria with Respect to Goal (Model 1)

	Reliability	Responsiveness	Assurance	Tangibility	Empathy	PV	WSV	WSV/PV
Reliability	1	5	2	3	7	**0.40**	2.20	5.43
Responsiveness	0.20	1	0.25	0.33	3	**0.08**	0.41	5.14
Assurance	0.50	4	1	4	6	**0.31**	1.74	5.72
Tangibility	0.33	3	0.25	1	7	**0.17**	0.89	5.22
Empathy	0.14	0.33	0.16	0.14	1	**0.04**	0.19	5.10
	$\lambda_{max} = 5.325$;	CI $= 0.08$;	RI $= 1.12$;	CR $= 0.07$		(CR $\leq 0.10 \rightarrow$ comparisons are consistent)		

Note: PV: priority value, WSV: weighted sum vector

The rest of the pairwise comparison matrices (total: 11 matrices; 5 for the first and 6 for the second model) were processed with similar operations and/or calculations using the same procedure of the AHP and all the weights (priority values) were found. Table 5 and Table 6 summarise the weights and the overall weights for the first and second model, respectively. Notice that the values in "Weights of the Criteria" column of Table 5 come from the "PV" column of Table 4. All other values in Table 5 were similarly obtained.

Table 5
Quality Based Model with All Weights (Model 1)

Criterion	Alternative				Weights of the criteria
	Face-to-face	Distance	Hybrid	Novel	
Reliability	0.65	0.19	0.11	0.05	**0.40**
Responsiveness	0.06	0.53	0.25	0.16	**0.08**
Assurance	0.62	0.10	0.23	0.05	**0.31**
Tangibility	0.05	0.12	0.23	0.60	**0.17**
Empathy	0.54	0.12	0.28	0.06	**0.04**
Overall Weights of Alternatives	**0.49**	**0.17**	**0.19**	**0.15**	

According to Table 5, weights (priority values) of the alternatives with respect to reliability are as follows: face-to-face (0.65), distance (0.19), hybrid (0.11) and novel (0.05). These values showed that face-to-face was by far the leading teaching method followed by distance, hybrid, and novel. If we look at the remaining rows of Table 5 focusing on the weights of alternatives, distance was the leading teaching method with respect to responsiveness and followed by hybrid, novel, and face-to-face. Face-to-face was by far the leading teaching method followed by hybrid, distance, and novel with respect to assurance. There was a different ranking when it came to examining tangibles. In other words, novel was the leading teaching method followed by hybrid, distance, and face-to-face with respect to tangibility. Finally, face to face was the leading teaching alternative followed by hybrid, distance, and novel with respect to empathy?

The last evaluation step in Table 5 is to find the overall weights of alternatives. This can be considered as the synthesizing step which consisted of multiplying criteria

weights with the corresponding weights of alternatives with respect to related criterion. That is;

$0.49 = (0.40).(0.65) + (0.08).(0.06) + (0.31).(0.62) + (0.17).(0.05) + (0.04).(0.54),$
$0.17 = (0.40).(0.19) + (0.08).(0.53) + (0.31).(0.10) + (0.17).(0.12) + (0.04).(0.12),$
$0.19 = (0.40).(0.11) + (0.08).(0.25) + (0.31).(0.23) + (0.17).(0.23) + (0.04).(0.28),$
$0.15 = (0.40).(0.05) + (0.08).(0.16) + (0.31).(0.05) + (0.17).(0.60) + (0.04).(0.06).$

According to these overall weights of alternatives, face-to-face teaching method was found to be the optimum alternative in terms of service quality based criteria followed by hybrid, distance, and novel teaching methods.

Table 6
Experience Based Model with All Weights (Model 2)

Criterion	Alternative				Weights of the criteria
	Face-to-face	Distance	Hybrid	Novel	
C_{21}	0.26	0.57	0.11	0.06	**0.04**
C_{22}	0.57	0.05	0.25	0.13	**0.07**
C_{23}	0.58	0.05	0.25	0.12	**0.27**
C_{24}	0.60	0.04	0.12	0.24	**0.46**
C_{25}	0.62	0.24	0.05	0.09	**0.16**
Overall Weights of Alternatives	**0.58**	**0.10**	**0.15**	**0.17**	

It can be seen from Table 6 that weights/priority values of the criteria with respect to goal for the second model are as follows: C_{21} (0.04), C_{22} (0.07), C_{23} (0.27), C_{24} (0.46) and C_{25} (0.16). In other words, "Lecturer's competence in maintaining students' attention, interest, and enthusiasm" was the leading criterion followed by "Lecturer's effectiveness in terms of communicating with students", "Lecturer's ability in establishing and maintaining class control", "Lecturer's capability in using course materials", and "Lecturer's feelings of comfort and good mood while teaching".

According to Table 6, priority values of the alternatives with respect to C_{21} are as follows: face-to-face (0.26), distance (0.57), hybrid (0.11) and novel (0.06). These values showed that distance was by far the leading teaching method followed by face-to-face, hybrid, and novel. If we look at the other rows of Table 6 focusing on the weights of alternatives, face-to-face was the leading teaching method with respect to C_{22} followed by hybrid, novel, and distance. Face-to-face was by far the leading teaching method followed by hybrid, novel, and distance with respect to C_{23}. Face-to-face again was by far the leading teaching method followed by novel, hybrid, and distance with respect to C_{24}. Finally, face-to-face was the leading teaching alternative followed by distance, novel, and hybrid with respect to C_{25}.

According to the overall weights of alternatives in Table 6, face-to-face teaching method was found to be the optimum alternative in terms of experience based criteria followed by novel, hybrid, and distance teaching methods.

It is also possible to make a comparative assessment about the service quality and experience based models by utilizing data from Table 5 and Table 6. Face-to-face teaching was the most preferred method for both models with considerably high weights. The remaining rankings in terms of teaching alternatives were totally different for these models. For instance, the novel teaching method was the second preferred method according to the experience based model whereas it was the least preferred one for the service quality model. Moreover, distance was ranked last in Model 2 (experience based) and third in Model 1 (service quality); hybrid came second place in Model 1 and third place in the Model 2.

V.   DISCUSSIONS

Education systems have complex structure and hence it requires hardwork to manage it effectively. It could clearly be seen during the pandemic period that the management of education became harder than ever. This difficulty was evident for all types of sectors alongside education. On the one hand, people have tried to survive and on the other hand, they have made efforts to sustain their jobs. Working styles have changed dramatically than never before in this new period and society as a whole is trying to cope with the prevailing unusual conditions. As Yang (2020) stated, Covid-19 pandemic is not only a medical issue. In fact, it is a common social problem that concerns the whole world and all sectors and it forces people to think about social interactions including education.

The Covid-19 pandemic has radically changed traditional teaching and learning methods and the online version has come to the forefront as a new method of education (Yong, 2022). In other words, with all its shareholders, systems, stages, resources and also the affecting and affected population, the education sector is perhaps the most monitored one during the pandemic. Students of all ages and stages who receive education, encounter new teaching methods in a highly modified environment. This change is also evident for the primary and/or direct providers of education, namely the teachers and/or lecturers. This study investigated the education sector during the Covid-19 period by focusing on the higher education system from the point of view of the lecturers.

In accordance with this, we tried to determine the most appropriate method of teaching in higher education during the pandemic and in this context, took into consideration the judgements of the lecturers working in a higher education department. Assessment of alternative teaching methods by the lecturers revealed that face-to-face teaching method was the most preferred in terms of service quality and experience based models. This result is consistent with the findings of recent researches. For example, Lee et al. (2021) argued that teachers believed that they begin to lose direct contact with their students in an online teaching environment. Bhagat and Kim (2020) stated that compared with face-to-face teaching, it is difficult to maintain a similar

level of student attendance and attention in online teaching.

Although existing literature is fairly limited, recent articles on the effects of Covid-19 in the education sector (El Masri & Sabzalieva, 2020; Yang, 2020; Agasisti & Soncin, 2021; Chan et al., 2021; Kavaricet al., 2021; Lee et al., 2021; Said-Hung et al., 2021) mentioned the challenges of transition from the classical face-to-face teaching to online teaching. It is quite natural that any change in an existing system will include some difficulties and users of the system might resist change. This abrupt change from face-to-face teaching to online teaching, due to the Covid-19 pandemic have also encountered some difficulties such as insufficiency of online teaching infrastructures and the inexperience of teachers (Yang, 2020), not equipped with online teaching experience (Lee et al., 2021) and the lack of readiness including the uncertainty of the transition environment (Cutri et al., 2020). It can be stated that such types of difficulties in transition from face-to-face to online teaching and the need for direct contact between lecturers and students for an effective teaching environment has led to this conclusion.

This study is different from the previous studies mainly based on three aspects. Firstly, the type of sector and the sample of the research that the present study dealt with and secondly the methodology adopted two different models. Thirdly, this study focused on identifying the viewpoints of the lecturers and not the students. As mentioned in the previous sections, this study was essentially focused on evaluating the teaching models and the related literature especially during the post Covid-19 pandemic. In addition, although the findings of this study showed consistency with the findings of a few recent studies as mentioned, further studies could be conducted in order to establish accurate generalizations. It is hoped that the findings of this study could be one of the reference points for further studies concerning post-pandemic teaching and/or learning environments. Moreover, the present study could offer some important insights that are applicable not only in higher education but also in other areas of the education sector or various other sectors and/or industries. Educational institutions conducting conferences, symposiums, seminars or courses; companies organizing business meetings or personal training programs could benefit from the findings of the present study including the hierarchical models utilized. As a result, any system having an interaction between two parties such as, supplier and service or product provider, could utilize the findings and/or methodology of the present study.

VI.   CONCLUSION, LIMITATIONS, AND FUTURE RESEARCH DIRECTIONS

This study aimed to identify the optimum teaching method during the post-pandemic period from the point of view of lecturers. In accordance with this aim, this study involved the health services department of a state university in the central Anatolian region of Turkey and teaching alternatives were evaluated from the viewpoints of the lecturers working and actively giving courses in the department. Evaluations were conducted based on two models: service quality based model and experience based model. Results showed that face- to-face was the most preferred teaching method for both models. The remaining rankings in teaching methods for experience based model were as follows: novel, hybrid, and distance teaching methods.

On the other hand, according to the service quality based model, hybrid was the second preferred teaching method followed by distance and novel teaching methods, respectively.

Similar to other studies, this study had some limitations. Firstly, it focused on a single department of a university. Although this can be seen as a shortcoming, it is not inconsistent with the methodology used. Nevertheless, care must be taken when generalizing the findings of this study. Secondly, perhaps the size of the group from which the data was collected. The group consisted of 10 decison-makers (i.e. lecturers) who are experts in their respective fields. For this reason, the size of the group was adequate for the study that focused on revealing real expert judgments as was the case in this study. Despite these limitations, the present study investigated the dynamics of a new term with unfamiliar ways of working styles. Therefore, it could be considered as one of the first studies on the subject and could serve as a comparative study for future studies. This study focused on the service provider side and took into consideration the viewpoints of the lecturers. Future research could investigate and analyze the new education environment from the viewpoints of the students/ service receivers. Furthermore, different universities and/or different departments can be the scope of future research from the viewpoint of the service provider and receiver of higher education. Apart from these, various studies could be conducted by focusing on the pre-higher stage of the education sector. Finally, it is hoped that the findings of this study will provide some insight about future teaching methods including online, hybrid, and novel.

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