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Distance Education and Teachers' Job Satisfaction during the COVID-19 Pandemic: The Mediating Role of Work-Family Conflict*

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ABSTRACT

Conventional school education mandatorily switched to distance education to sustain education and protect the health of students and teachers during the COVID-19 lockdown around the world. However, mandatory distance education, a sort of home-based telework, is highly likely to get more blurred the borders devoted to working and family domains and trigger the work-family conflicts experienced by teachers and reduce their job satisfaction. Although previous studies addressed the relationships between distance education and job satisfaction, there is a limited study on the effect of the COVID-19 lockdown on the relationship between these three variables. The current study aims to explore the mediating role of work-family conflict in the association between distance education and teachers' job satisfaction by using data collected from Turkish teachers working from home during the COVID-19 pandemic. The results found that although mandatory distance education increased their job satisfaction since it allows them to maintain teaching activities under the COVID-19 circumstances, work-family conflict negatively mediated the link between mandatory distance education and teachers' job satisfaction.

Keywords: Distance education, teachers, job satisfaction, work-family conflict, the COVID-19 pandemic.

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1. INTRODUCTION

Coronavirus (COVID-19), which was first detected in China's Wuhan city, spread worldwide like a nightmare at the beginning of 2020. To slow the spread of the pandemic, "*lockdown*" and "*social distancing*" rules ordered by governments radically changed people's living and working manners since they were forced to stay at home and work from home. After the COVID-19 outbreak was officially announced as a pandemic by the World Health Organisation in March 2020, many governments immediately took a range of measures to prevent the mode of transmission. In this sense, almost all economic sectors, especially health, tourism, transportation, cafe and restaurant, have been influenced by the COVID-19 pandemic. In addition to these, education is one of the most affected sectors. In this sense, many economic sectors switched from a full-time standard working schedule to mandatory working from home, which was normally practised for the limited working days (ILO, 2020). Similarly, many governments decided to switch from conventional education to mandatory distance education to maintain education within the framework of the new pandemic rules (Hebebci et al., 2020).

A similar process was also conducted in Turkey by the government. After the Turkish Ministry of Health officially reported the first COVID-19 case in March 2020, schools at all levels were shut down and restructured their weekly course schedules to adhere to distance education. Thus, all schools were kept closed, except for nursery schools, and classes that would take high school and university exams during the 2020–2021 academic year. In this period, some platforms such as Zoom, Google Meet, etc. and the Education Informatics Network (EBA-TV), an internet- and television-based public distance education system, were substituted for face-to-face formal education. Although the EBA TV, a public distance education system, was established to reduce educational disparities and increase educational inclusion rates, students who lacked access to television, computers and tablets, etc., as well as the internet, were unable to participate adequately in education (Sari and Nayir, 2020). In this sense, the education processes in Turkey, such as lessons, assignments and exams, were significantly affected by the COVID-19 crisis when delivered via EBA, ZOOM, Skype, WhatsApp, etc. Parents' satisfaction with distance learning was also moderate (Görgülü

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et al., 2022). Eventually, with the rise of COVID-19 vaccination rates in Turkey, schools resumed face-to-face education as of the beginning of the 2021 academic year, provided that some hygiene and social distancing measures were taken.

Fundamentally, distance education is a form of home-based telework for teachers to maintain educational activities. The new compulsory working manner became a new standard for working under the COVID-19 circumstances and broke teachers' old working habits. In this line, teachers had to adapt to the new working environment. Further, with the transport of work to home, teachers' time devoted to work and family is more likely to become more blurred and increase work-family conflicts (WFC) among teachers. There is no doubt that the WFC has some adverse outcomes for organisations and individuals. It may create some adverse effects on individuals, such as increased fatigue, stress and burnout, and poorer physical and mental health, while organisations are encountering some labour troubles, such as increased absenteeism and turnover, lower job satisfaction and poor performance (Anandasayanan et al., 2011; Erdamar & Demirel, 2014).

Teachers had to consider family responsibilities while teaching from home in distance education during the COVID-19 pandemic. This new mandatory teaching method may have increased the WFC among teachers. The increased WFC among teachers may have also had an adverse effect on their job satisfaction. Admittedly, teachers' job satisfaction is a key factor in the education system's success in building up the future of a society. At this point, the following questions come to mind. How did mandatory distance education affect teachers' job satisfaction and WFC under the COVID-19 circumstances? What is the role of the WFC in the relationship between distance education and job satisfaction among teachers under the COVID-19 circumstances? As a negative psychological factor, the WFC might have a mediating role that affects the relationship between distance education and teachers' job satisfaction. Therefore, the distance education under the COVID-19 circumstances is distinct from traditional work from home, and there is a need for new research to understand the impact of distance education on teachers' job satisfaction through the WFC. To address these relationships, drawing on research about the relationship between working from home and job satisfaction, the present study aims to explore the relationship between distance education and the job satisfaction reported by teachers under the COVID-19 lockdown and to examine the mediating role of the WFC in this relationship. To test the model, we identify distance education as an exogenous latent variable, job satisfaction as an endogenous latent variable and the WFC as a mediator latent variable.

2. LITERATURE REVIEW

2.1 The Relationship between Distance Education and Job Satisfaction

Distance education is a type of teaching and planned learning where the teaching is performed in a separate location from the learning, and which requires information and communications technology (ICT) and specific institutional organisations (Moore & Kearsley, 2012). A new generation of distance education with the development of internet technologies offers the possibilities for online education as synchronous in virtual classes and schools or courses which were previously recorded via text, audio, or video can be followed on online platforms as asynchronous (Moore & Kearsley, 2012). Unarguably, ICT enables numerous benefits for teachers and students. In this sense, teachers can work from anywhere and at any time using ICTs such as mobile computers, collaborative software, and the learning management system, and learners can also access courses in the same way (Casacchia et al., 2021).

Essentially, distance education for teachers is a sort of telework applied in education. The concept of telework (telecommuting) was first introduced by Nilles (1975) to define that employees in large companies performed their jobs in offices close to their homes by using a network with computer and communication components rather than travelling long distances to the workplace. And then, ICT-based telework began to be widespread when smaller and lighter wireless devices such as mobile computers and phones allowed employees to work from anywhere at any time, including from home (Eurofound & ILO, 2017; Chung & Van der Lippe, 2018). In particular, the "*internet boom*" has highly contributed to the development of telework (Dambrin, 2004).

Recently, the debates on telework have mainly been ongoing about its benefits for employers and employees. In this regard, telework offers a "*win-win*" situation for both parties. Employers win because they get rid of building and office costs. Employees win because they get a better work-life balance, resulting in higher job satisfaction and organisational commitment (Felstead & Henseke, 2017). In addition, telework allows workers to flex place, which improves workers' control over the time boundaries between work and family domains. Teleworkers also have more time to integrate work and family responsibilities by saving travel time. However, some studies argue that flexible working, including working from home, has no consistent empirical association with the WFC (Chung & Van der Lippe, 2018). In this sense, border theory suggests that moving work to home has some challenges. On the one hand, the borders between work and non-work domains are physically eradicated and boost boundary-blurring, depending on an increased permeability between the two environments. On the other hand, the effects of work pressure extend to non-work life, as reflected by the inability to *"switch off"* and difficulty winding down at the end of the day (Felstead & Henseke, 2017; Chung & Van der Lippe, 2018).

After the pandemic, telework became one of the main components of the struggle with COVID-19. Also, the International Labour Organisation (ILO) recommended that workers eligible for telework, including temporary workers and interns, switch to full-time home-based telework to reduce the risk of transmission of the COVID-19 pandemic (Messenger, 2020). During the COVID-

19 pandemic, telework, typically used for limited periods, was practised full-time rather than part-time or occasionally, not voluntary but compulsory, compared to telework under normal circumstances (ILO, 2020). In this respect, telework used during the COVID-19 pandemic was the standard form of home-based telework (Belzunegui-Eraso & Erro-Garcés, 2020). In this line, distance education for teachers can be regarded as a type of regular home-based telework.

Despite flexible working prospects, the transition to distance education brought along significant challenges for teachers under the COVID-19 circumstances. First, teachers had to switch to mandatory distance education, differing from their standard working orders, immediately learn the technologies required for distance education and re-adjust their work and family roles to the pandemic context (Lizana & Vega-Fernadez, 2021). Distance education boosted teachers' workloads with the transformation of educational approaches and the requirement to learn new teaching methods (Silva et al., 2021). Increased workload depending on distance education led to adverse effects on teachers' mental health, such as depression, anxiety, stress, and burnout syndrome. In this sense, a study in Chile reported that distance education led to increased anxiety and stress, workloads, exhaustion, and burnout among Chilean teachers during the COVID-19 pandemic (Lizana & Vega-Fernadez, 2021). Although teachers tried to overcome challenges resulting from mandatory distance education and provide educational continuity, teachers suffered from higher stress, workload, and burnout than before during the COVID-19 outbreak (Suganya & Sankareshwari, 2020). Also, using ICTs negatively affected teachers' physical and psychological life satisfaction (Casacchia et al., 2021; Suganya & Sankareshwari, 2020).

Job satisfaction is one of the essential dimensions of life satisfaction. Job satisfaction is inherently based on employees' subjective judgments about their jobs (Kalleberg & Vaisey, 2005). In this regard, Locke (1976) and Smith et al. (1969) defined job satisfaction as "*an emotional affective response to a job or specific aspects of a job*". Therefore, job satisfaction can be identified as an overall employee's positive or negative judgments and evaluations about their jobs. It contains three components: cognitive, affective, and behavioural; however, it is not very easy to separate the cognitive and affective components from each other (Judge, Zhang & Glerum, 2021). In fact, job satisfaction reflects workers' individual expectations of their jobs. Therefore, workers might have different job expectations for different jobs (Green, 2006). In this respect, some employees may be satisfied with their current jobs, while others may have lower job satisfaction as their current jobs do not meet their expectations. In this context, dissatisfied employees with their jobs are more likely to be either dismissed or quit (Clark, 2001). In a nutshell, job satisfaction depends not only on the job gains, such as wage, career, working time, job autonomy and flexibility, but also on individual expectations from the job. In this sense, it is more likely that someone with limited job expectations may express a higher satisfaction, while others with greater expectations for the same job may report a lower satisfaction because of their higher education (Green, 2006). From this aspect, people naturally tend to stay in a satisfying job and quit a dissatisfying job. Thus, worker behaviours such as absenteeism and quit intention are associated with job satisfaction (Spector, 1985). When the relationship between working from home and job satisfaction is reviewed, previous studies indicate that home-based teleworkers have higher levels of job satisfaction than office workers (Ellis & Robert, 1998; Virick et al., 2010; Kelliher & Anderson, 2010; Bloom et al., 2015; Felstead & Henseke, 2017; Roz, 2019; Jaeseung et al., 2020).

2.2 The Mediating Role of the WFC

The WFC is based on the role conflict theory, which assumes that people have limited time and energy to devote to their various roles (Kahn, Wolfe & Quinn, 1964). Therefore, the WFC is a sort of inter-role conflict experienced by people with multiple roles, such as a spouse, parent, and employee. In this sense, the WFC refers to an inter-role conflict in which role tensions from work and family domains interfere in certain ways. In other words, this type of inter-role conflict arises when work roles interfere with family roles or vice versa (Netemeyer et al. 1996). It means that the WFC has a mutual nature. Netemeyer et al. (1996) specified the WFC as a sort of inter-role conflict in which demands of, and time devoted to the work interfered with family responsibilities. For Greenhaus & Beutell (1985), the WFC occurs when attendance in the work (family) role prevents attendance in the family (work) role, and it has three sources: time-, strain- and behaviour-based conflict. In this context, people may experience the WFC when certain aspects of their work lead to difficulties in their personal lives. For example, an inflexible working program, lengthy working hours, and less time for the family may exacerbate the WFC (Erdamar & Demirel, 2014).

2.2.1 The Relationship between Distance Education and the WFC

After the COVID-19 outbreak, the WFC received researchers' and policymakers' attention again, depending to an increase in full-time home-based telework, particularly for dual-earner households. However, the pre-pandemic studies have no consensus on the effect of home-based telework on the WFC. In this sense, some studies suggested that teleworking had a positive impact on the WFC (Vilhelmson & Thulin, 2016; Fedakova & Lucia, 2017). For instance, Kossek et al. (2006) found that teleworkers, who had more control over their work, were significantly less likely to have turnover intentions, family-work conflict, and depression. On the other hand, others argued that home-based telework had negative effects on WFC. Although telework allows some flexibility for employees in terms of workplace and working time, flexible working schedules can increase work intensification, competition, and work on demand. In some cases, employees can be forced to accept irregular working schedules, which create WFC and negative physical or mental health conditions, including burnout (Vargas-Llave & Weber, 2020: 1) and a source of stress (Poelmans, 2003; Liu et al., 2018). Further, Amstad et al. (2011) concluded that WFC was associated with low job satisfaction, burnout, turnover intention, and increased absenteeism levels because teleworking blurs

the boundaries between work and non-work times (Vargas-Llave & Weber, 2020). In fact, during the lockdown, many workers experienced this scenario (Andrade & Lousã, 2021).
The COVID-19 circumstances made rethinking compulsory about the effects of working from home on the WFC. First, the COVID-19 crisis, which required the closure of schools and workplaces, changed employees' perceptions and anxieties about job security and the new work and life environment (Vargas-Llave & Weber, 2020). In this sense, Vargas-Llave & Weber (2020) suggested that telework assisted employees' work-life balance and mental health by allowing them to sustain their employment during the COVID-19 outbreak. Nevertheless, those who argue the opposite view claimed that mandatory home-based telework brought additional difficulties, leading to the WFC during the COVID-19 lockdown. For instance, Zakaria et al. (2021) reported that teleworkers from Malaysia faced the WFC under pandemic conditions, even if they could spare enough time for their family. Andrade and Lousã (2021) concluded that role overload and after-hours work-related technology use had a positive effect on the WFC during mandatory home-based telework. Because the work was mandatorily moved to the home, and thus the time devoted to work and family roles blurred during the COVID-19 pandemic. Therefore, the availability to work at any time of the day and job activities that exceed daily working time made them primary factors of the WFC for teleworkers (Andrade & Lousã, 2021).

In distance education, where the teaching role is performed at home, it is highly likely that teaching roles easily interfere with family responsibilities or vice versa, since the lines between the work and family domains are eliminated. In this sense, Lizana & Vega-Fernadez (2021) found that distance education during the pandemic increased Chilean teachers' working time and had an adverse effect on their work and family balance. Because teachers who had to study new educational technologies and techniques took on additional responsibilities in mandatory distance education, which created an unprecedented environment, and their workloads increased (Daniel, 2020). Synchronous and asynchronous lessons that required extra preparation in distance education were suddenly substituted for conventional education. Thus, due to mandatory distance education, these modifications in teachers' work environments may have adversely affected their teaching habits (Shoulders et al., 2021). The negative effects of distance education are more obvious for female teachers, especially those with mother or aged-care roles, than for males (Hong et al., 2021). Females are more likely than males to experience WFC due to the additional impact of working from home on their workload and household chores (Chung & Van der Lippe, 2018). For women, working from home means that the time saved from commuting and work is reallocated to caring for others and domestic chores. However, this potentially leads to increased tensions and conflicts between care roles and work responsibilities, which can be a source of stress for those involved (Hilbrecht et al., 2008; Chung & Van der Lippe, 2018). Further, the extraordinary conditions created by the pandemic are more likely to worsen the WFC among women who cannot have an unpaid grandmother assist or paid household service (Çoban, 2022).

2.2.2 The Relationship between the WFC and Job Satisfaction

Admittedly, people are satisfied with their jobs, allowing workers to meet their work and family roles; however, they are more likely to experience the WFC. As the number of dual-earner households having conventional responsibilities and roles at work and family, such as job and career goals, childcare and elderly care enlarge, the WFC increases among employees. Because long-working times or inflexible working schedules make it difficult for employees to meet work and family responsibilities that emerge simultaneously (Wong & Ko, 2009), this kind of role conflict may boost employees' dissatisfaction and stress (Gözükara & Çolakoğlu, 2016). In this sense, the WFC is associated with job dissatisfaction. Furthermore, employees experiencing the WFC cannot spare enough time for their families due to their employer's job demands. As a result, job performance and work-related outcomes are adversely impacted by stimulating job dissatisfaction (Hong et al., 2021). Also, the empirical studies and meta-analytic analyses confirm a significant relationship between the WFC and job satisfaction and indicate that employees experiencing the WFC are dissatisfied with their jobs. For example, Netemeyer et al. (1996) predicted a negative correlation between the WFC and organisational commitment and job satisfaction. Further, Kossek and Ozeki's meta-analysis (1998) found a consistent negative relationship between the WFC and job satisfaction and suggested that the relationship could be more robust for women than men. Similarly, Allen et al. 2000 verified the significant negative correlation between WFC and job satisfaction. In this sense, many studies using samples from different countries and professions concluded that the WFC was negatively related to job satisfaction (Perrewe et al., 1999; Maslach & Leiter, 2001; Turunç & Erkuş, 2010; Amstad et al., 2011; Gao et al., 2013; Buonocore & Russo, 2013; Demirel & Erdamar, 2016; Hong et al., 2021; Zakaria et al., 2021; Al-Alawi et al., 2021).

2.3 Research model and hypotheses

Mediation analysis, frequently used in social sciences, is a statistical method used to predict at least one causal antecedent variable (X) associated with a single consequent variable (Y) through a single mediator (M). The path model is depicted in Figure 1. In the model, X can influence Y through two pathways. The first is a direct pathway from X to Y, which estimates *the direct effect* of X on Y. The second is an indirect pathway from X to Y through a mediator M. This is called *the indirect effect* of X on Y (Hayes, 2022). In our model, distance education (X) is used as the antecedent variable, job satisfaction (Y) as the consequent variable and the WFC (M) as the mediator. As illustrated in Figure 1, the study mainly aimed to examine any mediation effect of the WFC on the relationship between distance education and teachers' job satisfaction. The hypotheses of the study are as follows:
Hypothesis 1: During the COVID-19 pandemic, distance education was positively associated with teachers' job satisfaction.

Hypothesis 2: During the COVID-19 pandemic, distance education was positively associated with the WFC among teachers.
Hypothesis 3: During the COVID-19 pandemic, the WFC was negatively associated with teachers' job satisfaction.
Hypothesis 4: During the COVID-19 pandemic, the WFC played a negative mediating role in the relationship between distance education and teachers' job satisfaction.
The model that will test our hypotheses for the mediation effect of the WFC in the relationship between distance education and teachers' job satisfaction is illustrated in Figure 1.

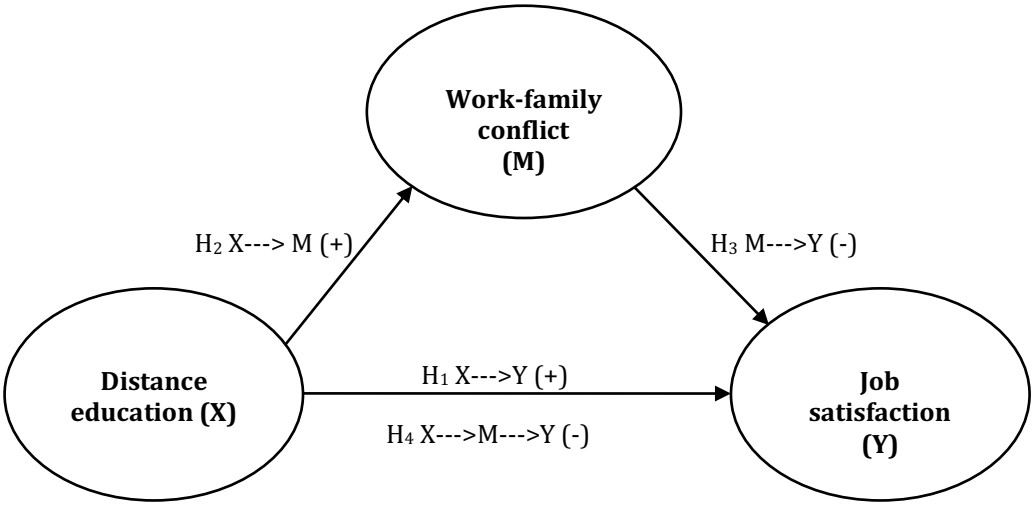

Figure 1. Hypothetical model of the study.

3. METHOD

3.1 Data Collection and Sample

Study data were collected between 05–08.12.2021 as part of a master's project investigating the effect of mandatory distance education on the WFC in Turkish teachers during the COVID-19 pandemic. A Scientific Ethics Commission reviewed and approved all studies involving human participants, and thus, the ethical standards of the 1964 Declaration of Helsinki were met. The minimum sample size required for the survey, with a 95% confidence interval and a 4% margin of error, was calculated to be 546. The survey was electronically sent out to participants, who work for the public nursery, primary, secondary, high schools, special education, and affiliated institutions from 11 districts of Tekirdağ city in Turkey via google forms and filled out by the 602 participants working from home during the COVID-19 lockdown. Before proceeding, confidentiality and anonymity of the survey were ensured by giving all participants information about the project's goals and consent.

3.2 Measures

Distance Education: Various scales were developed to measure distance education with the dimensions of students, parents, and teachers. One of them is the Distance Education Learning Environments Survey (DELES) developed by Walker and Fraser (2005). However, there is no special survey to measure the effects of distance education on teachers under the COVID-19 circumstances. To address this gap, we tried to generate a new questionnaire. The development of the questionnaire entailed the formulation of open-ended questions directed at teachers working from home, intending to elicit their experiences and challenges of the implementation of mandatory distance education during the prevailing circumstances of the COVID-19 crisis. Subsequently, scale was developed through a collaborative process involving the collation of the teachers' responses, a comprehensive review of extant theoretical literature, and the utilisation of the DELES. Following a thorough review of the available literature and consultation with experts in the field, the scale was revised. The scale with 23 items measured the effect of distance education on teachers' work and family balance during the COVID-19 conditions with a 5-point Likert rating scale from 1 = "*I totally disagree*" to 5 = "*I totally agree*". The current study used some items of the scale solely (e.g., "During the COVID-19 pandemic, my educational and/or administrative responsibilities increased"). The content of sample items and their internal consistencies are presented in Table 1.

WFC: This latent construct used the WFC scale with five items developed by Netemeyer et al. (1996) to measure participants' experiences of the WFC during distance education. And this scale was adapted to Turkish by Efeoğlu and Özgen (2007). The WFC consists of 5 items (e.g., "I felt unhappy in my family life as I could not have a work and life balance"). Participants were asked to agree or disagree with each item (1= "*strongly disagree*" to 5= "*strongly agree*"). In our sample, Cronbach's α of the scale was 0.89.

Job Satisfaction: Four items from the scale developed by Spector (1985) measured this latent construct. This scale was adapted into Turkish by Kula (2011). The job satisfaction scale consists of 4 items (e.g., "I am satisfied with working at this institution"). Participants were asked to agree or disagree with each item (1= "*strongly disagree*" to 5= "*strongly agree*"). Cronbach's α of the scale was 0.96 in the current sample.

3.3 Procedure

The data were processed and analysed using IBM SPSS 23.0 and AMOS. The software programme SPSS was utilised in order to conduct exploratory factor analysis (EFA), descriptive statistics, correlation analysis, and reliability analysis. Furthermore, confirmatory factor analysis (CFA) and mediation analysis were performed by AMOS. The present study constructed a mediated path analysis that incorporated one endogenous latent variable (i.e., distance education), one exogenous latent variable (i.e., job satisfaction) and one latent mediator (i.e., WFC). Furthermore, the model incorporated covariates as exogenous variables.

3.4 Factor Loadings

The EFA was processed to measure the factor loadings of the scales in Table 1. The EFA computed by the principal component was employed to analyse the distance education scale, the WFC scale (5 items) and job satisfaction (4 items). Items with all scores suppressed and factors with eigenvalues greater than 1 were deleted from the analysis, since the factor scores of the items were less than 0.40 and the cross-loads between factors were relatively high (Guadagnoli & Velicer, 1988). And then, the distance education scale with 6 items, the WFC scale with 5 items and job satisfaction with 4 items had an acceptable loading score (> 0.5). Cronbach's alpha (α) explored the internal consistency, and α coefficients were good (> 0.7) for three latent constructs (Kline, 2016). At the end of the EFA, we understood that distance education, job satisfaction and the WFC have a one-factor scale, and three factors explained 69.97% of the cumulative variance.

Table 1.
Exploratory Factor Analysis (N= 602)

Factors	Items	Factor loads	Eigenvalues	% of Variance	Cronbach's α
Distance education (X)	Diseduc1	0.576	4.972	33.147	0.85
	Diseduc2	0.780			
	Diseduc3	0.595			
	Diseduc4	0.830			
	Diseduc5	0.840			
	Diseduc6	0.761			
Job satisfaction (Y)	Jobsatis1	0.942	3.542	23.610	0.96
	Jobsatis2	0.935			
	Jobsatis3	0.920			
	Jobsatis4	0.914			
WFC (M)	Wfc1	0.778	1.983	13.219	0.89
	Wfc2	0.821			
	Wfc3	0.875			
	Wfc4	0.838			
	Wfc5	0.784			
KMO and Bartlett's Test					0.871
Approx. Chi-Square					5,932.175
df					105
Sig.					0.000

4. RESULTS

4.1 Descriptive Results

Before descriptive analysis, Mahalanobis, Cooks and Leverage distance methods were processed to detect the outliers. As a result of a set of analyses, the outliers were eliminated from the data set, and the rest of the 575 participants were included in the analysis. Participants comprised females (64.5%) and male (35.5%) teachers aged between 22 and 64 years old (mean= 39.10, SD= 9.06), and 99.5% had a university degree or above. In addition, 14.6% of participants work in nursery school, 31,7% in primary school, 31.5% in secondary school, 14.8% in high school, and 7.5% in special education affiliated institutions.

As seen in Table 2, the standard deviation values are monitored close to the mean. Furthermore, the absolute values of skewness and kurtosis (±2.00) suggest that the data are normally distributed (Lomax & Hahs-Vaughn, 2012; Field, 2009; Garson, 2012). Skewness analysis found that distance education and job satisfaction items are negatively skewed, while the WFC items are positively skewed. The kurtosis values for distance education and the WFC items are the negatives, while those for job satisfaction items are the positives. As illustrated by these figures, the assumption of a normal distribution has been unviolated.

Table 2.
Descriptive Statistics (Valid N= 575)

Items	Range	Mean	Std. Deviation	Skewness	Kurtosis
Diseduc1	1-5	3.504	1.3842	-0.431	-1.134
Diseduc2	1-5	4.090	1.1148	-1.176	0.540
Diseduc3	1-5	2.917	1.3422	0.005	-1.173
Diseduc4	1-5	3.677	1.2381	-0.614	-0.668
Diseduc5	1-5	3.727	1.2213	-0.662	-0.555
Diseduc6	1-5	3.428	1.3439	-0.415	-1.016
Jobsatis1	1-5	4.068	1.1093	-1.169	0.528
Jobsatis2	1-5	3.957	1.1746	-1.026	0.119
Jobsatis3	1-5	4.108	1.1226	-1.211	0.573
Jobsatis4	1-5	4.024	1.1504	-1.092	0.286
Wfc1	1-5	2.812	1.4433	0.111	-1.334
Wfc2	1-5	2.437	1.3248	0.454	-1.000
Wfc3	1-5	2.369	1.3119	0.516	-0.966
Wfc4	1-5	2.203	1.2778	0.764	-0.568
Wfc5	1-5	2.663	1.3758	0.296	-1.175

4.2 Confirmatory Factor Analysis

The measurement models were tested by the CFA tested the measurement models comprising Distance education (6 items), the WFC (5 items), and Job satisfaction (4 items). The Maximum Likelihood method was employed in the analysis by generating a covariance matrix since the data were normally distributed. Also, factor loadings were ≥0.50 (Hair et al., 2021). In the confirmation of model fit, if the goodness-of-fit index (GFI) and the Tucker-Lewis index (TLI) are greater than 0.90, the measurement model is regarded as having absolute goodness of fit when a "*standardised root mean square residual*" (SRMR) and a "*root mean square error of approximation*" (RMSEA) are less than 0.10 (Hu and Bentler, 1999; MacKinnon, 2008; Kline, 2016).

Table 3.
Confirmatory Factor Analysis

	X^2	X^2/df	*p*	GFI	TLI	RMSEA	SRMR
One-constructed model (X+ M +Y)	4232.960	47.03	0.000	0.459	0.231	0.283	0.240
Two-constructed model (X+M, Y)	3131.534	35.18	0.000	0.587	0.429	0.244	0.210
Three-constructed model (X, M, Y)	355.377	4.08	0.000	0.923	0.948	0.073	0.049

Note. X= Distance education; Y= Job satisfaction; M= WFC

The measurement models were examined in different combinations: one-constructed, two-constructed, and three-constructed. As seen in Table 3, the goodness of fit index indicated that the three-constructed model was within acceptable threshold values and well-fitted with the data. These results indicated that the three-constructed model met the goodness of fit.

4.3 Construct Validity

As Fornell & Larcker (1981) recommended, convergent and discriminant validity test the construct validity. The composite reliability score ranged from 0.863 to 0.963, while the average variance extracted (AVE) score ranged from 0.520 to 0.867 (see Table 4). These results confirmed that the WFC and distance education constructs met convergent validity. However, the CR value was at the limit for the job satisfaction construct (0.95). The maximum of 0.95 for the CR value points out indicator redundancy (Hair et al., 2021). Table 4 presents construct validity results.

Discriminant validity is achieved if the correlation values for the latent constructs are less than 0.85 (Hair et al., 2021). In addition, the square root of AVE for the three latent constructs was greater than the inter-construct correlations. Consequently, results proved that the three latent constructs met the discriminant validity criteria (Hair et al., 2021). Furthermore, the WFC was negatively correlated with job satisfaction (r = -0.007) and positively correlated with distance education (r = 0.418). Further, there is a positive correlation between distance education and job satisfaction (r = 0.199). Thus, these results are free from multicollinearity problems and meet the pre-assumptions for testing the mediating effect.

Table 4.
Convergent and Discriminant Reliabilities (N=575)

	CR	AVE	MSV	1	2	3
1 WFC (M)	0.901	0.647	0.175	**(0.804)**		
2 Job satisfaction (Y)	0.963	0.867	0.040	-0,007	**(0.931)**	
3 Distance education (X)	0.863	0.520	0.175	0,418	0,199	**(0.721)**

Note. α= Cronbach's Alpha Coefficients; CR= Composite reliability; AVE= Average variance extracted; MSV= Maximum shared squared variance; √AVE= Bold values in parenthesis.

4.4 Hypothesis Testing

Following the confirmation of the measurement model, the hypotheses were tested for the structural model with the latent variables using a mediated path analysis—Figure 2 and Table 5 display test results. First, Hypothesis 1, the total effect, was tested, and distance education had a significantly positive relationship with job satisfaction (β = 0.20, *p*< 0.001). Also, the 95% confidence interval of Bootstrap with 5000 did not include zero [0.090, 0.324]. It means that hypothesis 1 was confirmed. And then, Hypothesis 2 was tested, and distance education was significantly positively associated with the WFC (β = 0.42, *p*< 0.001). Distance education explained 17% of the variance in the WFC. Therefore, hypothesis 2 was also confirmed.

Table 5.
Hypothesis Testing Results (N=575)

	Effects	**β**	**SE**	**R2**	**Lower bounds 95% CI**	**Upper bounds 95% CI**	**Hypothesis**
H1 (X ---> Y)	Total effect	0.20***	0.045	0.04	0.090	0.324	**Confirmed**
H2 (X ---> M)		0.42***	0.048	0.17			**Confirmed**
H3 (M ---> Y)		-0.11*	0.048	0.05			**Confirmed**
(X--->Y)	Direct effect	0.24***	0.050		0.124	0.368	
H4 (X--->M--->Y)	Indirect effect	-0.045*			-0.091	-0.005	**Confirmed**

Note. *p< 0.05; **p< 0.01; ***p< 0.001. CI: Confidence Interval. The number of bootstrap samples = 5000.

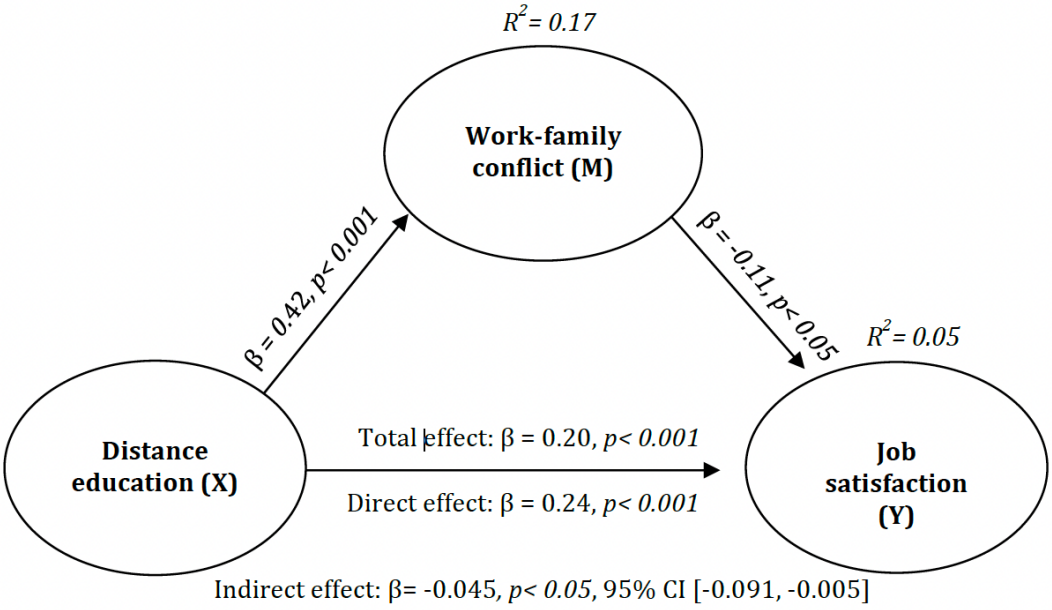

Figure 2**.** Structural equation model results.

A separate structural model tested the mediating effect of the WFC. First, the WFC negatively impacted job satisfaction (β = -0.11, $p< 0.05$). In this case, hypothesis 3 was also confirmed. After the addition of the WFC as a mediator to the model, the coefficient of the path from distance education to job satisfaction (direct effect) was still significant and greater than the total effect (β = 0.24, $p< 0.001$). Furthermore, the 95% confidence interval of Bootstrap with 5000 replicates did not include zero [0.124, 0.368]. It means that distance education had a significant direct effect on job satisfaction.

Finally, hypothesis 4, the indirect (mediation) effect of the WFC in the relationship between distance education and job satisfaction, was tested using the bootstrap sample distribution (Preacher & Hayes, 2008; Zhao et al., 2010; Hair et al., 2021). The WFC had a negative indirect effect on the relationship between distance education and job satisfaction (β=-0.045, $p< 0.05$). The indirect effect model calculated using bootstrap with 5,000 replicates was significant, as the 95% confidence interval did not include zero [-0.091, -0.005]. In this case, hypothesis 4 was confirmed. In the structural equation model (SEM), the positive direct effect and the negative indirect effect point out complementary mediation (Hair et al., 2021). The fact that the path analysis's fit indices were within the threshold values indicated that the model was consistent with the data and acceptable (X^2= 355.377; X^2/df= 4.085; p= 0.000; GFI= 0.923; CFI= 0.957, TLI= 0.948; RMSEA= 0.073; SRMR= 0.049).

4.5 Endogeneity Correction

Hausman's specification test, developed by Hausman (1978), controls for the endogeneity between distance education and teachers' job satisfaction. This was achieved by employing a two-stage least squares model (2SLS) with two instrumental variables: (1) distance education blurred the boundaries between work and family life, and (2) reduced communication between students and teachers. Hausman's test result estimated whether the ordinary least square (OLS) and two-stage least squares (2SLS) estimations were consistent with each other. In this sense, the Hausman Chi-squared difference test confirmed that distance education was not endogenous to job satisfaction among teachers, the F value (2, 572) χ^2= 3.867, p= 0.144). Thus, it was proved that distance education had no endogeneity bias in the path model.

5. DISCUSSIONS

During the COVID-19 pandemic, the internet and television were the two primary channels for distance education in Turkey. Distance education over television was asynchronous, while synchronous education was carried out over the internet with the EBA. However, students in rural areas could not access education due to a limited or a lack of internet infrastructure and TV broadcasting. In this sense, Karagöz and Rüzgar (2021) highlighted that distance education had some challenges resulting from the lack of technological devices, internet quotas, and infrastructure during the COVID-19 lockdown. On the other hand, teachers were dissatisfied with distance education due to the lack of interaction between teachers and students (Hebebci et al., 2020; 278-279). Further, Keskinkılıç Kara et al. (2021) found that female teachers working from home in Turkey, Istanbul, had lower job satisfaction and motivation and higher job stress during the COVID-19 pandemic.

The study found that distance education was positively correlated with teachers' job satisfaction during the COVID-19 pandemic. This finding was consistent with Balasundran et al. (2021) reported that working from home positively affected teachers' job satisfaction in Malaysia during the COVID-19 pandemic. Moreover, Sethi and Saini (2020) suggested that although teachers faced moderate challenges depending on distance education in India, they were highly satisfied with distance education with the assistance of school authorities. Thus, it can be considered that distance education boosted teachers' job satisfaction during the COVID-19 pandemic. However, other studies argued that the association between job satisfaction and teleworking varied by countries' special conditions under the COVID-19 pandemic. For instance, Bhattara (2020) found that employees working from home are less satisfied if they work more than working time in an office, while being more satisfied with virtual meetings for hours due to savings in travel and gas costs during the COVID-19 pandemic. Also, Zakaria et al. (2021) suggested that working from home enhanced job satisfaction in Malaysia during the COVID-19 outbreak. However, Mahmood et. al. (2023), employing data from Eurofound's COVID-19 Working and Living survey, found that an increase in work demand led to a reduction in teachers' job satisfaction during the COVID-19 pandemic. Moreover, possibilities to access adequate resources to overcome the challenges of distance education improved their job satisfaction. Also, they suggested that significant gaps occurred in the usage of technology between younger and older teachers during the COVID-19 period. As for the cases of Turkey, Reyhanoğlu and Akın (2023) concluded that working from home during the COVID-19 outbreak decreased teachers' job satisfaction in the case of Hatay. Furthermore, Dışkaya and Danışman (2025), in their study covering İzmir, suggested that teachers' job satisfaction was negatively affected by the changes in their working conditions during the pandemic, depending on the blurring of times devoted to work and life and an increase in workloads, stress and anxiety. In the post-COVID-19 era, Gökbulut and Öztürk (2024), in their research with 206 teachers in public schools in Zonguldak, found that distance education self-efficacy perceptions were positively, low-level associated with teachers' job satisfaction.

5.1 The Mediating Role of the WFC

The current study investigated whether the WFC mediated the relationship between distance education and teachers' job satisfaction under COVID-19 circumstances. Empirical results implied that the WFC negatively affected the association between distance education and teachers' job satisfaction. Also, path analysis pointed out that distance education had a significant positive effect on the WFC among teachers, while the WFC was negatively associated with teachers' job satisfaction. Thus, the

analysis indicated that mandatory distance education negatively affected job satisfaction perceived by teachers during the COVID-19 pandemic by boosting the WFC. Previous studies revealed a mediated role of the WFC on job satisfaction and other psychological factors. For example, Türker and Çelik (2019) reported that the WFC was associated with job satisfaction perceived by teachers, and job satisfaction played a mediation role in the effect of life satisfaction on the WFC. Further, Al-Alawi et al. (2021) concluded that the WFC had a significant negative effect on the job satisfaction of Saudi female teachers, and job satisfaction had a positive moderating impact on work-life balance. Also, Kafetsios (2007) found that the WFC mediated the association between job satisfaction and psychological distress.

Teaching is already one of the professions that commonly experience the WFC depending on a heavy workload, time pressures and growing competition even before the pandemic circumstances. The teachers have difficulties managing work and family life under these challenges brought by the teaching profession and encounter serious social problems (Chaman et al., 2014). In this regard, Maslach and Leiter (2001) suggested that teachers experiencing high rates of the WFC faced long periods of job stress and poor job satisfaction and got disconnected from their job responsibilities. Demirel and Erdamar (2016) concluded that teachers' job and life satisfaction decreased when the WFC increased. Further, Almutairi (2017) found that the WFC was negatively associated with job satisfaction.

Indisputably, the COVID-19 pandemic created radical changes and challenges in teachers' working forms and conditions. In this sense, conventional face-to-face schooling had to be replaced by mandatory distance education. However, distance education is highly likely to exacerbate stressors, shift their implementation of coping strategies, and impact teachers' job satisfaction (Shoulders et al., 2021). Some studies support these findings. For instance, Mahmood et al. (2023) concluded that although distance education was mandatorily practised to secure the health of teachers and students, the negative impact of unexpected and increased job demands on teachers reduced their job satisfaction during the COVID-19 pandemic. Further, Yu and Wu (2021), in their study on Chinese workers, found that during the COVID-19 pandemic, long-term teleworking adversely influenced job satisfaction in the absence of an appropriate working area, social support and a proper monitoring tool.

Mandatory distance education made significant changes to teachers' work environments and teaching habits since distance education needed extra planning, preparation and presentation during the pandemic habits (Shoulders et al., 2021). However, female teachers with multiple roles, such as work, baby, or aged-care, and chores, had far more adverse effects of mandatory distance education than male teachers (Hong et al., 2021). In this sense, female teachers with multiple roles within work and family were more likely to experience WFC, compared to male teachers. Female teachers with children had to combine their professional duties with family responsibilities. Also, the most common reasons for the WCF among female teachers with children were long and irregular working hours, adapting to new lesson schedules and new, exhausting and unconventional working conditions. Therefore, female teachers are more likely to have experienced higher tensions associated with occupational and family roles and face some challenges in perfectly regulating the role boundaries (Andrade & Lousã, 2021). In this sense, Keskinkılıç Kara et al. (2021) suggested that Turkish female teachers suffered from the WFC while working from home during the COVID-19 crisis. Furthermore, Çoban (2022) found that women were far more at risk during the COVID-19 pandemic in terms of quitting their work, precarisation of their employment and consolidating their traditional family roles due to mandatory teleworking practices. Moreover, Görmüş and Baytur (2023) suggested that the challenges arising from household chores and caregiving, coupled with flexible working hours, caused a blurring of the boundaries between work and family life for female teachers during the COVID-19 pandemic. Similarly, Reyhanoğlu and Akın (2023) found that female teachers working from home were more likely than males to experience the WFC during the outbreak due to tension between work and family responsibilities.

5.2 Theoretical Implication

Previous research mainly focused on the bilateral association between teleworking, job satisfaction, and the WFC. The current study tried to explain the role of the WFC in the relationship between mandatory distance education, which is a form of full-time home-based telework and job satisfaction during the COVID-19 lockdown. In this respect, this study also allows us to rethink the impacts of the COVID-19 pandemic circumstances on the mediating role of the WFC in the association between distance education and job satisfaction by using data from Turkish teachers. Empirical findings indicated that the WFC played a negative mediation role in the association between distance education and job satisfaction during the COVID-19 pandemic. Furthermore, the results suggest that mandatory distance education may have negatively affected teachers' job satisfaction, depending on increased WFC. In this respect, mandatory distance education might have blurred teachers' borders devoted to teaching and family time. Therefore, teachers appear unwilling to teach full-time from home since they frequently experience conflicts between work and family responsibilities. Hence, these findings have confirmed the predictions of border theory, arguing that transferring work to home physically removes the borders between work and non-work domains and increases boundary-blurring between the two spaces. Thus, this study contributed to the literature in this field by re-testing job satisfaction, conflict theory and boundary theory during the COVID-19 pandemic. Further, the study enriched the previous studies on distance education, job satisfaction and the WFC.

5.3 Practical Implications

The current study produced practical implications for reducing job satisfaction and the WFC among teachers due to teaching from home during the COVID-19 crisis. Although the pandemic has recently been taken under control worldwide, it is crucial to take some lessons from the challenges faced by teachers. First, the results indicated that the WFC negatively affected teachers' job satisfaction. In this sense, it is expected that some specific measures should be taken to increase teachers' job satisfaction and reduce their WFC in the post-pandemic period. Second, policies on improving teachers' salaries and working time and conditions will help boost their job and life satisfaction in compensation for the adverse effects of the pandemic. Also, these measures to develop job satisfaction may reduce the WFC among teachers. Third, teachers should be confirmed by re-training programs related to distance education for the possible next crisis (Demirel & Erdamar, 2016). Fourth, the implementation of social support and professional development programs and strategies within educational institutions has been demonstrated to enhance teachers' work-life balance and job satisfaction. For instance, Haslam et al. (2013) propose a workplace parenting intervention for teachers with the objective of reducing their WFC and job stress and developing family roles by balancing work and family. Similarly, Cinamon & Rich (2005) also recommend the implementation of the At-Risk Employees' and the Managers' Programs. The objective of the At-Risk Employees' Program is to assist teachers at risk with learning methods to tackle the WFC and improve their skills in balancing work and family responsibilities. The Managers' Program has been developed with the objective of assisting school managers in enhancing their awareness of teachers' work and family requirements, and in contemplating their administrative approach in relation to organisational policies (Cinamon & Rich, 2005).

5.4 Limitations

The findings of the current study should be considered in the following limitations. First, the findings should be confirmed by longitudinal data since the study employed cross-sectional data, which allows for one-sided causality (Aguinis, et al., 2017). Second, we used only the questionnaire method for data collection to adhere to social distancing rules in the study. The questionnaire may produce different outcomes for different occupation groups, cities, regions, or cultures. Also, face-to-face interviews and observations would be better for obtaining more objective data experienced by participants. Third, the study contains data from only Tekirdağ, with a relatively small sample. Collecting data from several cities with various backgrounds across Turkey would yield more beneficial results. Fourth, this study employed data that only examined the three factors' relationships. However, we could not focus on the organisational climate, such as the role of the management and relationships with colleagues. Future studies can consider these variables. Finally, the analysis results were predicted by the SEM. Alternative research procedures and methods might yield more different and valid inferences or results.

6. CONCLUSIONS

To contribute to the studies on distance education, job satisfaction and the WFC, we tried to explore the relationship between distance education and teachers' job satisfaction during the COVID-19 pandemic and the mediating role of the WFC. The results found that despite the positive effect of distance education on job satisfaction, the WFC negatively mediated the association between distance education and job satisfaction. Therefore, the current study suggested a direct path (increasing teachers' job satisfaction) and an indirect path (reducing the WFC experienced by teachers, particularly females) to enhance the efficiency of distance education.

Research and Publication Ethics Statement

The studies involving human participants were reviewed and approved by the decision date 02.12.2021, and no T2021-779 of the Scientific Ethics Commission of Tekirdağ Namık Kemal University to meet the ethical standards of the 1964 Declaration of Helsinki.

Contribution Rates of Authors to the Article

This article had two authors and derived from the master's project conducted by the second author under the supervision of the first author.

Statement of Interest

On behalf of all authors, the corresponding author states that there is no conflict of interest.

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