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Time Spent on Distance Learning Moderates Changes in Teachers' Work-Related Well-Being One Year After the First School Closures

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Abstract

It is now well-documented that school closures enforced at the beginning of the COVID-19 pandemic impaired teachers' well-being. Yet, only a few studies tracked changes in teachers' well-being during the subsequent phases of the pandemic; phases that were characterised by the discontinuous implementation of in-person teaching and distance learning. To fill this gap, we conducted a follow-up study at the end of the school year 2020-2021 (May – June 2021, T2), administering an online questionnaire to Italian teachers (N = 240) who had previously taken part in a data collection conducted at the end of the first school closures (May – June 2020, T1). Our first aim was to monitor changes in teachers' psychological and work-related well-being between T1 and T2. Our second aim was to assess whether time spent on distance learning moderates these changes in psychological and work-related well-being. Results showed that teachers' psychological well-being decreased between T1 and T2, whereas work-related well-being increased. What is more, time spent on distance learning moderated the general increase in work-related well-being observed at T2: the longer teachers implemented distance learning during the school year 2021, the less their work-related well-being increased. In conclusion, although it seems that teachers have adapted to the changes associated with the first school closures, this study showed that distance learning remains a possible risk factor for teachers' well-being.

Keywords: Teachers, distance learning, psychological well-being, work-related well-being, school closures

Public Significance Statement

This follow-up study explored changes in teachers' well-being between the first school closures and the end of the following school year in Italy. While teachers' psychological well-being decreased, results show that their work-related well-being increased over time. However, the longer teachers implemented distance learning, the weaker their increase in work-related well-being. Distance learning remains a stress factor for teachers that risks compromising their work-related well-being.

Time Spent on Distance Learning Moderates Changes in Teachers' Work-Related Well-Being One Year After the First School Closures

In 2020, more than 63 million teachers worldwide were affected by school closures enforced to stop the COVID-19 pandemic. Most of them lacked the necessary support and training to switch to distance learning (UNESCO, 2020). Numerous empirical investigations have demonstrated that this abrupt shift has led to a decline in teachers' well-being. (e.g., Pressley et al., 2021; Hilger et al., 2021). Some countries had to keep schools closed or only partially open during the school year after the first school closures due to the pandemic waves that followed the first one in March 2020, irregularly combining in-person teaching and distance learning (UNESCO, 2021). Despite the potential negative impact of these measures on the already compromised teachers' well-being (e.g., Pressley et al., 2021), only a few studies monitored possible changes in teachers' conditions across time (e.g., Nabe-Nielsen et al., 2021; Kim et al., 2022). To complement our findings on Italian teachers' well-being at the end of the first school closures (2020), we conducted a follow up study to document longitudinal changes in teacher well-being one year later. In addition, we analysed the effect of time spent on distance learning, implemented discontinuously during the school year 2020-2021, on changes in teachers' well-being.

Teachers' Well-Being During the COVID-19 Pandemic

Teaching is considered one of the most stressful jobs (Johnson et al., 2005), and teachers suffer more from mental and psychosomatic disorders than other occupational groups (e.g., Redin & Erro-Garces, 2020; Viac & Fraser, 2020). The school closures imposed worldwide in March 2020 to stop the COVID-19 pandemic consistently affected teachers, decreasing their well-being. Indeed, teachers had to adjust to a completely new working environment and learn to implement online teaching activities. This unexpected change led to a general decrease in their well-being as evidenced by many studies conducted in different countries (e.g., Soncini et al., 2021; Pressley et al., 2021; Hilger et al., 2021; Zhen et al., 2021; Silva et al., 2021).

Recent studies have shown that teachers reported low levels of well-being even during the school year that followed the first school closures, both when schools were completely closed (Lizana & Lera, 2022; Jakubowski & Sitko-Dominik, 2021) and when schools were fully or partially reopened (Ozamiz-Extrebarria et al., 2021). To the best of our knowledge, the only two available studies that monitored teachers' well-being across time through a longitudinal approach showed a general decrease in well-being from the first school closures and throughout the school year after, when teachers resumed in-person teaching (Nabe-Nielsen et al., 2021; Kim et al., 2022). However, in these two studies, well-being was broadly defined in terms of general mental health and the authors did not include more nuanced measures.

To enrich extant research and tackle different facets of teachers' well-being, in this study, we focused on multiple aspects of well-being. Following the model proposed by Diener (2009) we considered emotional well-being (i.e., positive moods) and life satisfaction (i.e., cognitive appraisal of life as a whole) as two aspects of *psychological well-being*. In addition, since the challenges faced by teachers during the pandemic mainly concerned their job, we also assessed two complementary aspects of *work-related well-being* (Rothmann, 2008), namely work engagement, (i.e., a job-related persistent positive state of mind; Schaufeli, 2006), and emotional exhaustion (i.e., the main symptom of the burnout syndrome characterised by extreme fatigue and energy depletion; Maslach & Jackson, 1981). For clarity, throughout the manuscript, we will refer to psychological well-being to indicate emotional well-being and life satisfaction and work-related well-being to indicate emotional exhaustion and work engagement.

Distance Learning: A Major Stressor for Teachers During COVID-19 Pandemic

When the first school closures were enforced in several countries in March 2020 (UNESCO, 2021), distance learning became the only way to provide pupils with education and instruction. However, working from home increased teachers' workload, uncertainty, and work-related threats (Nabe-Nielsen et al., 2021; Silva et al., 2021). In this regard, teachers expressed a general

preference for in-person teaching over distance learning, which was considered difficult to manage (e.g., Mseleku, 2020). Based on a large number of teachers–a subsample of whom also participated in this follow-up study–Soncini and colleagues (2021) found that distance learning was perceived as one of the main stressors for teachers during the first school closures.

After the first school closures, some countries kept schools closed or partially closed, implementing distance learning and in-person teaching discontinuously. In Italy, in-person teaching was officially resumed in September 2020 (at the start of the school year 2020-2021). However, school closures were enforced several times from November 2020 to March 2021, either throughout the country or in particularly high-risk areas, and depending on the school level: Primary and middle schools could remain open in high-risk areas, whereas secondary schools had to switch to distance learning (Decree of the Prime Minister – November 2020). In addition, whenever a case of COVID-19 was diagnosed in a classroom, the whole class had to mandatorily switch to distance learning to keep schools open while limiting the risk of contagion (Decree of the Prime Minister – September 2020). As a result, Italian school closures were very fragmented compared to other European countries (e.g., Hale et al., 2021), and the amount of time teachers spent on distance learning varied considerably (Bovini & De Filippis, 2021). Most likely, this fragmented situation exacerbated the difficulties related to the implementation of distance learning that Italian teachers had already reported during the first school closures (Soncini et al., 2021; Toto et al., 2021; Truzoli et al., 2020).

The Present Study

Although evidence of a decrement in the well-being of teachers during the first school closures has been provided, only a few studies tracked teachers' well-being during the year following the initial school closures. Furthermore, no study has yet explored the effects of time spent on distance learning on possible changes in teachers' well-being registered during the school year that followed the first school closures. Understanding these phenomena is particularly important for countries where distance learning has been applied discontinuously, such as Italy.

Accordingly, this study's aim was twofold. First, to compare the psychological (i.e., emotional well-being and life satisfaction) and work-related well-being (i.e., work-engagement and emotional exhaustion) of teachers assessed during the last two months of the school year influenced by the first school closures (May – June 2020, T1) with psychological and work-related well-being assessed the last two months of the following school year (May – June 2021, T2). Second to assess whether the time spent on distance learning impacted on the change in teachers' psychological well-being and work-related well-being between T1 and T2. In line with these aims, we formulated the following hypotheses:

H1: We expected a general decrease in teachers' psychological and work-related well-being between T1 and T2.

H2: We expected that time spent on distance learning moderated the general decrease in teachers' psychological and work-related well-being over time, so that teachers who implemented distance learning more often during the school year 2020-2021 reported a more severe deterioration in psychological and work-related well-being, compared to teachers who implemented distance learning less often.

The present study is the follow-up phase of a large study conducted in Italy at the end of the year when school closures were first enforced (March 2020 - 2020). This prior cross-sectional study was set to assess teachers' psychological and work-related well-being during the last two months of school (May – June 2020) to understand the impact of this challenging period on Italian teachers. The data collection of the prior study was carried out by sending e-mails to all the primary, middle, and secondary school principals of three Italian regions (Emilia-Romagna, Northern Italy; Marche, Central Italy and Sardinia, Southern Italy), asking them to share the link to an online questionnaire among teachers working at their schools. A total of 1036 teachers took part in the first data collection and they were asked to leave their e-mail addresses to be contacted again the following year to participate in the follow-up. Results based on the first data collection can be found in Soncini and colleagues (2021; 2022). The present study reports the results of the follow-up study set

out during the last two months of the school year that followed the first Italian school closures (May – June 2021).

Method

Participants

This study was based on a sub-sample of teachers who had already participated in a large cross-sectional study conducted during the first school closures (Soncini et al., 2021; 2022). Protocols and materials were approved by the third author's University Ethical Board (protocol 2870, date 29/05/2020). A total sample of 1036 primary, middle, and secondary school teachers (M_{age} = 49.67, *SD* = 9.28, range 21-67, 85.91% female; 34.72% primary school teachers, 16.21 middle school teachers, and 49.07% secondary school teachers) took part in the first data collection (May – June 2020, T1). Among the total sample, 424 teachers (41.05% of 1036; M_{age} = 49.19, *SD* = 9.41, range 27-67, 84.5% female) left their e-mail address to be contacted again to take part in the follow-up study, which was conducted between May – June 2021 (T2). The final sample was composed of 240 teachers (23.2% of 1036, 56.6% of 440; M_{age} = 49.61, *SD* = 9.17, range 27-66, 82.9% female), who agreed to complete the follow-up questionnaire.

To check for possible sampling biases between teachers who only participated in the first data collection and those who participated in both data collections, we compared their responses to socio-demographic variables (age, gender, school level, teaching experience) and psychometric scales (Table S1 and S2, Supplementary Online Materials). None of the socio-demographic variables differed significantly, apart from school level, X^2 (2) = 6.66, *p* = .036. Indeed, fewer middle school teachers participated in the follow-up study (*n* = 26 out of 240; 10.80%) compared to those who participated only in the first data collection (*n* = 142 out of 796; 17.80%, see Table S2). Since few middle school teachers participated in the follow-up study, and the Italian regulations on distance learning at primary and middle schools differed from those at secondary school level, we created a new variable that aggregated primary and middle school teachers (*n* = 115, 47.92%) and differentiated them from secondary school teachers (*n* = 125, 52.13%).

Measures

The following psychometric scales were administered at both T1 and T2.

Emotional Well-being

The World Health Organization Well-being Index (see Topp et al., 2015) was used to assess emotional well-being. This scale measures the frequency of positive affective states and consists of 5 items (e.g., *During the last two weeks, I felt happy and in a good mood*) and a 6-point Likert scale (0 = "Never", 5 = "Always"). The internal consistency was good (T1ω = .80, T2ω = .91).

Life Satisfaction

The Italian version (Di Fabio & Ghizzani, 2006) of the Satisfaction with Life Scale (Diener et al., 1985) was used to assess life satisfaction. This scale consists of 5 items (e.g., *In many ways, my life is close to my ideal*.) assessed through a 7-point Likert scale (1 = "Strongly disagree", 7 = "Strongly agree"). The internal consistency was good (T1ω = .89, T2ω = .92).

Emotional Exhaustion

The Italian version (Sirigatti et al., 1988) of the Maslach Burnout Inventory- MBI (Maslach & Jackson, 1981) was used to measure teachers' emotional exhaustion. This scale consists of 5 items (e.g., "*I feel exhausted at the end of the working day*"), assessed via a 7- points Likert scale (0 = "Never", 6 = "Every day"). The internal consistency was good (T1ω = .88, T2ω = .93).

Work Engagement

The Italian version (Balducci et al., 2010) of the Utrecht Work Engagement Scale (UWES-9; Schaufeli et al., 2006) was used to assess teachers' work engagement. The scale consists of 9 items measured using a 7-point Likert scale (0 = "Never", 6 = "Every day"), and divided into 3 subdimensions: Vigor (e.g., *I feel full of energy in my work*), Dedication (e.g., *I am proud of my work*), Absorption (e.g., *I am immersed in my work*). The internal consistency of the aggregated scale was good (T1ω = .90, T2 ω = .91).

Time Spent on Distance Learning

This variable was only included in the follow-up questionnaire. It measured how much time teachers spent on distance learning during the school year 2020–2021 ("How much time in the school year 2020–2021 did you spend on distance learning? Please make an estimate considering the entire school year from September to June"). The scale ranged from 0 (distance learning implemented for less than one month) to 9 months (distance learning implemented for almost the entire school year)[1].

Data Analysis

Analyses were conducted using SPSS 28.[2] First, we tested the degree of overlap between time spent on distance learning (i.e., moderator) and school level (i.e., covariate), to detect possible problems of multicollinearity between these two variables. Second, we checked for missing value patterns and imputed data that were not missing completely at random. We concluded this section on preliminary analysis, testing whether the four dependent measures of teachers' psychological well-being (i.e., emotional wellbeing and life satisfaction) and work-related well-being (i.e., emotional exhaustion and work engagement) followed a normal distribution.

Once these assumptions were verified, we tested the hypotheses. According to H1, we expected a general decrease in teachers' psychological and work-related well-being between T1 and T2. To test H1, we assessed whether scores of teachers' psychological and work-related well-being between T1 and T2 differed significantly from zero, using a series of paired-sample t-tests.

According to H2, we expected that time spent on distance learning moderated the general decrease in teachers' psychological and work-related well-being. To test H2, we ran a series of moderation analyses in a two-instance repeated measures design, using the SPSS macro MEMORE

[1] Example: If a teacher applied distance learning during the national school closure between November and January (3 months), adding a further three weeks between February and March because their region was a high-risk region and a further two weeks in May because several cases were recorded in their classes, they should have responded 5 months in total.

[2] The complete dataset and the syntax are available on Open Science Framework https://osf.io/vfyba/?view_only=6da41358112b4013af25f7d9dd636384

v. 2.1.2 (Montoya, 2019). Changes in teachers' psychological and work-related well-being between T1 and T2 were modelled as a within-participant repeated measures factor. Time spent on distance learning was modelled as a between-participant fixed factor. If a significant interaction between the within and between factors was found, the interaction was probed using the Johnson–Neyman procedure. Compared to standard probing techniques—such as the decomposition of main effects at arbitrary moderator cut-off points set at ± 1 SD—the Johnson-Neyman procedure decomposes the interaction effect across the entire distribution range of the moderator variable, thus resulting in more informative and precise (Hayes, 2022; Johnson & Neyman, 1936). By using the Johnson-Neyman procedure, indeed, we were able to estimate the exact amount of time spent on distance learning at which the changes in teachers' psychological and work-related well-being became significant.

A major advantage of repeated measures is that each participant serves "as their own statistical control" (Montoya, 2019). The noise due to unmeasured confounding factors (e.g., stable dispositional differences, individual professional experiences, personal background) is thus considerably reduced in within-subject designs (Judd et al., 1996). Unless the within-effect of covariates is expected to vary between time points, the estimation of control variables (in this case, gender, age, and years of experience) in the model is not necessary. To decide whether to include the school level as a covariate we estimated the degree of overlap with time spent in distance learning and their multicollinearity. Indeed, during the school year that followed the first school closures, schools closed differently depending on the school level: Most of the primary and middle schools remained open throughout the school year, while secondary schools in high-risk areas switched to distance learning.

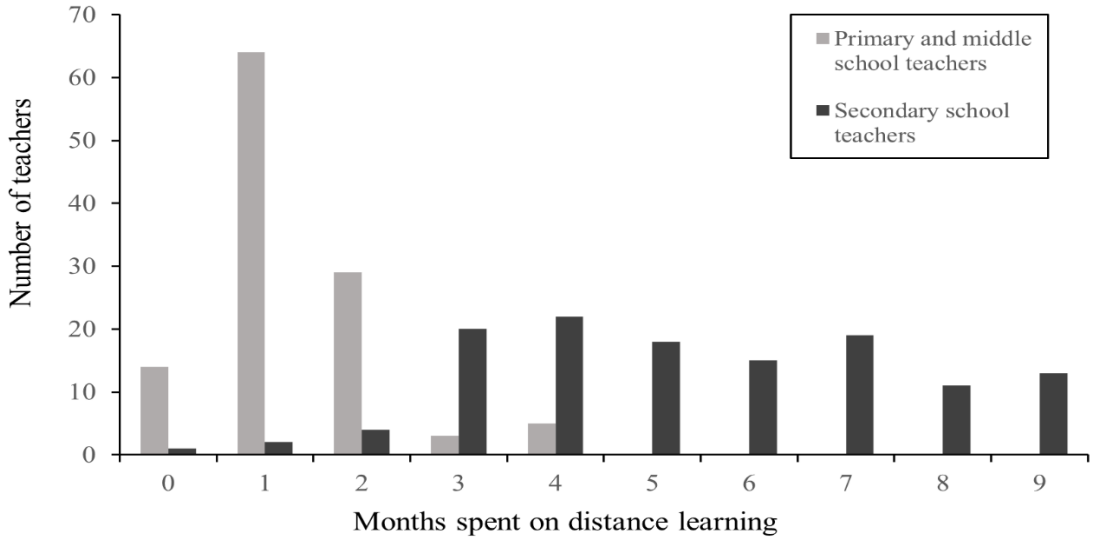
Results

Preliminary Results

First, we checked the degree of overlap between time spent on distance learning and school level. As shown in Figure 1, the distribution of time spent on distance learning between primary and middle school teachers, on the one hand, and secondary school teachers, on the other, immediately suggests a sizable difference between the two groups. An independent samples t-test confirmed a large difference in time spent on distance learning, $t(238) = -18.76$, $p < .001$, $d = -2.42$, reported by primary and middle school teachers ($M = 1.28$, $SD = 0.81$), as compared to secondary school teachers ($M = 5.36$, $SD = 2.19$). The strong interdependence between school level and time spent on distance learning resulted in low tolerance levels (tolerance = .338, VIF = 2.955). These low tolerance levels may indicate problems of multicollinearity (Alin, 2010), and they are likely to decrease the accuracy of estimated effects of the variable of interest on the dependent variable (York, 2018).

Figure 1

Frequencies of Months Spent on Distance Learning Reported Separately for Primary and Middle School Teachers, and for Secondary School Teachers



The inclusion of both variables in the model would be statistically problematic, and it would be conceptually artificial to test the contribution of one predictor while controlling for the other. Since our main hypotheses referred to time spent on distance learning and not to idiosyncratic differences due to variations in school level, we did not control for school level in the main moderation analyses. Further confirming the conceptual overlap between these two variables, additional analyses using school level instead of time spent on distance learning showed the same results (see Supplementary Online Materials).

Second, we handled missing values. The Little's MCAR test was significant, suggesting that data were not missing completely at random, $\chi^2(240) = 375.291$, $p < .001$. Among the variables, only time spent on distance learning presented 9.2% ($n = 22$) of missing data, and thus, we used Expectation Maximization algorithm in SPSS to perform a single data imputation for missing data. Although multiple imputation techniques generally outperform single imputation (e.g., Donders et al., 2006; Lin & Tsai, 2020), MEMORE does not include analytical procedure to pool multiple datasets.

Third, we tested normal distribution through levels of skewness and kurtosis of all psychometric scales, which are fully reported in Table S3 in the Supplementary Online Materials. Only work engagement resulted in a moderate violation of normality. As reported by Russell and Dean (2000), the bootstrap method represents the best way to solve the problem of violation of normality in complex moderation analyses (specifically in case of a two-instance repeated measures design where variable transformation may cause a miscalculation of difference scores). However, the macro MEMORE, used for the moderated analysis in this study, does not allow for bootstrapping. For this reason, we did not transform the variable and accepted possible estimation errors on work engagement.

Hypotheses Testing

Change in Teachers' Psychological and Work-Related Well-Being Between T1 and T2

Raw means and standard deviations of psychological well-being (i.e., emotional well-being and life satisfaction), and work-related well-being (i.e., emotional exhaustion and work engagement) are reported in Table 1. Results extracted from a series of paired-sample t-tests revealed significant time variations in both psychological and work-related well-being but in opposite directions. In line with H1, psychological well-being deteriorated over time: As compared to 2020, teachers reported lower emotional well-being and life satisfaction. Contrary to H1, however in 2021, work-related well-being improved over time: As compared to 2020, teachers reported lower emotional exhaustion and greater work engagement in 2021 (see Table 1).

Table 1

Changes in Teachers' Psychological and Work-related Well-being Between T1 and T2, Together with Observed Means and Standard Deviations

Psychometric scales		T1		T2				
	Range	*M*	*SD*	*M*	*SD*	*t*(239)	*p*	*d*
Psychological well-being								
Emotional well-being	0 – 5	3.05	0.97	2.43	1.15	-9.22	<.001	-.60
Life satisfaction	1 – 7	5.01	1.19	4.81	1.39	-3.16	.002	-.20
Work-related well-being								
Emotional Exhaustion	0 – 6	3.73	1.66	2.96	1.74	-7.89	<.001	-.51
Work Engagement	0 – 6	4.78	1.08	5.02	0.96	3.91	<.001	.25

Note: Results were extracted from a series of paired-sample t-tests for each psychometric scale separately. Effect sizes are expressed using Cohen *d'* and shown on the right-hand side of the table and represents the difference between T2 and T1.

Moderating Effects of Time Spent on Distance Learning on Changes in Teachers' Well-Being

In relation to psychological well-being, results extracted from MEMORE revealed that time spent on distance learning did not moderate the general deterioration observed between T1 and T2

of emotional well-being, $b = -0.014$ ($SE = .025$), $p = .593$, 95% CI [– 0.079, 0.052], $R^2 = .001$, and life satisfaction, $b = -0.001$ ($SE = .024$), $p = .679$, 95% CI [– 0.071, 0.051], $R^2 = .001$. Conversely as for work-related well-being, time spent on distance learning did moderate the observed decrease in emotional exhaustion, $b = 0.131$ ($SE = .036$), $p < .001$, 95% CI [0.038, 0.224], $R^2 = .053$, and the observed increase in work engagement to a lower extent, $b = -0.047$ ($SE = .023$), $p = .043$, 95% CI [– 0.109, 0.013], $R^2 = .017$.

We investigated interaction effects using the Johnson-Neyman procedure (Johnson & Neyman, 1936). Transition points (JN_1) and significance regions for conditional changes in teachers' emotional exhaustion and work engagement are reported in Figure 2 and Figure 3, respectively. JN_1 are points in the distribution of the moderating variable where confidence intervals intersect zero on the y-axis. Significance regions are those portions of the distribution of the outcome variable that differ significantly between time points. Concerning emotional exhaustion, teachers ($n = 197$) who had spent less than 6.63 months on distance learning during the school year that followed the first school closures reported lower levels of emotional exhaustion at T2 as compared to T1. This threshold level includes all primary and middle school teachers, and 65.60% ($n = 82$) of secondary school teachers (Figure 1). As for work engagement, teachers ($n = 167$) who had spent 4.68 months or less on distance learning during the school year that followed the first school closures reported greater work engagement at T2 as compared to T1. This threshold level includes all primary and middle school teachers, and 41.60% ($n = 52$) of secondary school teachers (Figure 1). Confirming H2, time spent on distance learning dampened the general improvement in work-related well-being observed over time.

Figure 2

Conditional Change in Teachers' Emotional Exhaustion as a Function of Time Spent on Distance Learning

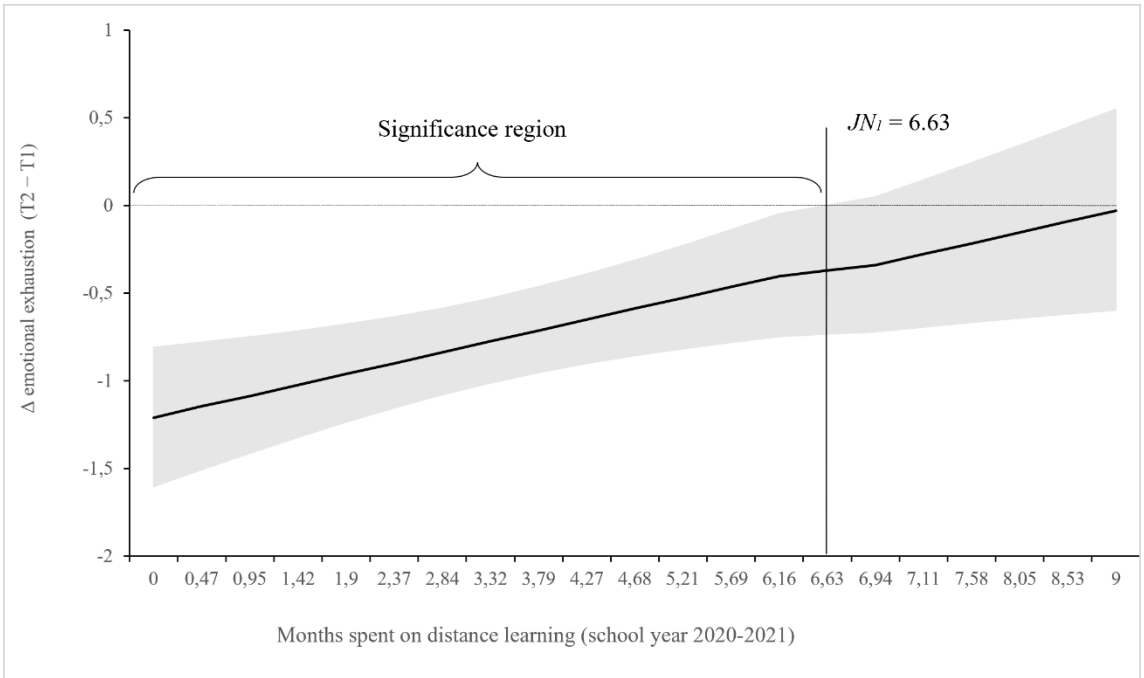
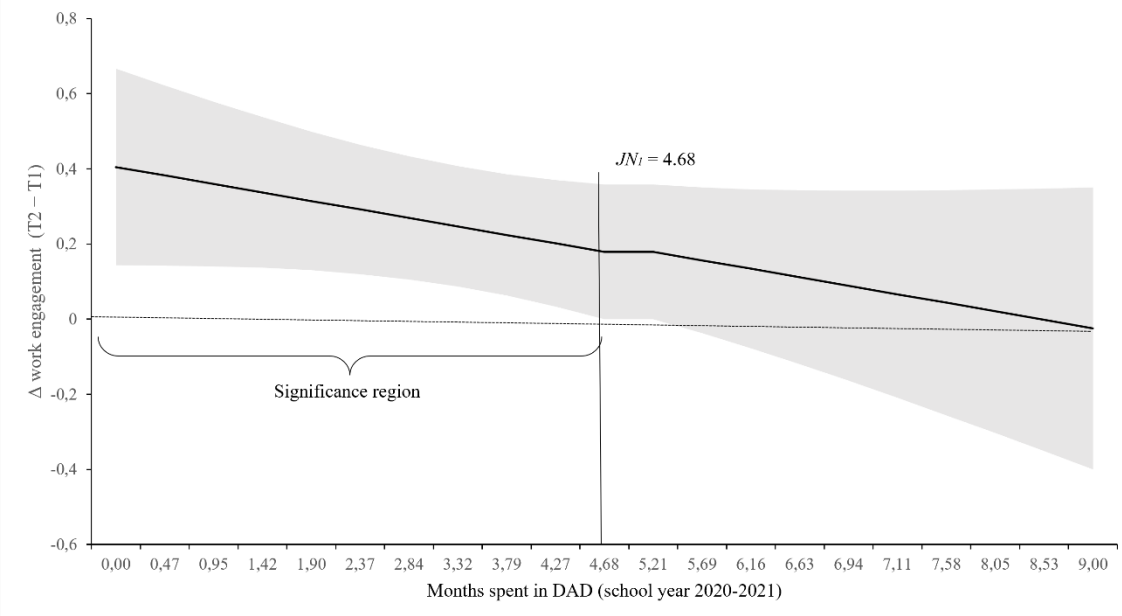


Figure 3

Conditional Change in Teachers' Work Engagement as a Function of Time Spent on Distance Learning



Discussion

The aim of this follow-up study was twofold: To monitor whether teachers' psychological well-being (i.e., emotional well-being and life satisfaction) and work-related well-being (i.e., emotional exhaustion and work engagement) changed one year after the first school closures enforced to stop to the COVID-19 pandemic; and to estimate whether time spent on distance learning during the school year that followed the first school closures moderated these changes. We collected data during the last two months of the first school closures enforced in Italy (May – June 2020, T1) and during the last two months of the school year that followed (May – June 2021, T2) through an online questionnaire administered to Italian teachers both at T1 and at T2.

Concerning psychological well-being, results were in line with previous studies that reported a gradual deterioration of teachers' well-being across the pandemic weaves (Jakubowski & Sitko-Dominik, 2021; Lizana & Lera, 2022; Nabe-Nielsen et al., 2021). However, our results showed that teachers' work-related well-being increased over time: Compared to T1 (March – June 2020), at T2 (May – June 2021) levels of work engagement increased, and emotional exhaustion decreased. This result differs from findings from previous studies that reported low levels of teachers' work-related well-being even during the school year following the first school closures (Kotowsky et al., 2022; Klusmann et al., 2023; Raducu & Stanculesku, 2022). However, it is important to note that these studies were cross-sectional and did not measure a change between two different moments of the pandemic in the same teachers.

Because we measured multiple aspects related to both psychological and work-related well-being, this study contributed to the existing literature by showing that psychological and work-related well-being evolved differently during the school year that followed the first school closures. Indeed, previous studies focused only on aspects of psychological well-being (e.g., depression or anxiety, Lizana & Lera, 2022), or work-related well-being (e.g., Klusmann et al., 2023) without analysing them together. According to our results, besides the psychological fatigue cumulated after

one year of the pandemic, teachers adjusted positively to new working conditions and gained a new sense of engagement in their job.

Nuancing these promising findings, and partially in line with our second hypothesis, the general improvement in work-related well-being was moderated by the amount of time spent on distance learning during the school year 2020-2021. Accordingly, the longer teachers implemented distance learning, the less their work-related well-being increased. This moderating effect of time spent on distance learning was particularly strong in relation to teachers' emotional exhaustion. In line with other findings collected during the first phases of the pandemic (e.g., Soncini et al., 2021; Mseleku, 2020), distance learning remained a major stressor that led to negative consequences for teachers' emotional adjustment. This result is in line with stress-related theories (i.e., Lazarus & Folkam, 1984) which posit that the impact of potential stressors on well-being is determined by people's perceptions. Most likely, distance learning was experienced as a challenging aspect of the jobwork by the teachers even during the school year that followed the first school closures. Consequently, spending more time on distance learning became a challenge to be faced rather than an opportunity to be seized.

This study has some limitations that should be noted. First, although teachers included in the two subsamples did not differ on most of the key socio-demogrphic variables, attrition in the follow-up study was quite high (only 23.10% of the total sample participated in T2), reducing therepresentativeness of our sample. In addition, the results may have been influenced by a self-selection bias (Heckman, 2010) that caused only the most distressed teachers to participate in the follow-up study. Second, the scale used to measure time spent on distance learning was based on a subjective evaluation given by teachers, rather than the actual time spent on such activity as reported on class registers. This self-reported scale brings endogeneity in the model because it relies on teachers' perceptions and memories, which may differ according to their level of psychological and work-related well-being. In addition, given the Italian regulations on distance learning, school level was closely overlapping with the time spent on distance learning, making it impossible to

properly disentangle the two factors and their unique relation with work-related and psychological well-being. Third, work engagement at T2 was not normally distributed and this may have reduced the accuracy of effects estimation. Finally, we did not measure other possible moderating factors, such as social or technical support received from schools (e.g., Soncini et al., 2022). Overall, future investigations should tease apart the potential benefits of hybrid forms of distance learning and identify conditions under which distance learning is viewed as an opportunity by teachers, as well as propose a detailed investigation which encompasses more variables.

Despite these limitations, this follow-up study highlighted the need to disentangle the psychological and work-related well-being of teachers and to monitor both aspects at regular intervals. In addition, it pointed out that distance learning represented a major stressor for teachers even after the first school closures. Taken together, our findings may help the development of tailored programs aimed at supporting teachers' well-being, a key factor to recover educational losses and manage long-term teaching transformations caused by the COVID-19 pandemic (UNESCO, 2021).

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