Facing the Inevitable: The Effects of Coronavirus Disease Pandemic and Online Teaching on Teachers' Self-Efficacy, Workload and Job Satisfaction

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Abstract: Coronavirus disease (COVID-19) preventive measures influenced teachers directly. The sudden shift to new teaching environment emerged unknown challenges influencing teachers' work differently. As self-efficacy is a key factor of successful teaching, the goal of our study was to examine the relationship among teachers' efficacy-related experiences, work satisfaction and workload during the pandemic. 769 teachers (55 men and 677 female, 32 undefined) completed the online version of the Norwegian Teacher Self-Efficacy Scale and the Relative Self-Efficacy Scale. Findings indicated significant positive correlation between job satisfaction and self-efficacy as well as job satisfaction and the sense of competency. Kruskal-Wallis Test proved higher level of self-efficacy among teachers with more experience in online teaching in the past. According to SEM analysis, job satisfaction is predicted by efficacy beliefs concerning the sense of competence, motivation, coping and conflict resolution. Our findings indicate that experience in online teaching methods can enhance self-efficacy, which contributes to higher job satisfaction.

Keywords: *COVID-19 pandemic, job satisfaction, online teaching, self-efficacy, workload.*

Introduction

The first half of 2020 brought wide range of new challenges due to the Coronavirus disease (COVID-19) pandemic. The safety actions influenced almost every aspects of everyday life, including education. Most countries introduced restrictive measures on schools to prevent the spread of the infection. In order to reduce personal contact one of the possible reactions was to move classrooms online. Although the idea of digital education is not unprecedented as online teaching is getting more prevalent (Allen & Seaman, 2014), different barriers made the transition from real school classes to fully online surfaces more complicated. The goal of our study was to explore teachers' job satisfaction, workload and teaching-related self-efficacy beliefs during the online teaching period compared to everyday classroom experience.

Self-efficacy and teaching

Self-efficacy as a central concept in Bandura's (1986) social cognitive theory is defined as the beliefs about one's capabilities to be successful in a given action or situation. Self-efficacy is not a general trait as it can vary across different areas of competences (Bong & Skaalvik, 2003). Self-efficacy is proved to be an important factor of behavioral outcomes in wide range of contexts, including education (Bandura, 1997). Students' self-efficacy is linked to higher academic achievement and study engagement (Olivier et al., 2019). Teachers' self-efficacy is linked to psychological well-being and self-esteem (Harun, 2017), autonomy and engagement (Skaalvik & Skaalvik, 2014) and job satisfaction (Caprara et al., 2006; Perera & John, 2020; Türkoğlu et al., 2017). Teachers reporting higher self-efficacy tend to think that they are more capable of classroom management, motivating students and helping their learning processes (Tschannen-Moran & Hoy, 2001). On the other hand, teacher self-efficacy is negatively related to symptoms of job burnout, such as emotional exhaustion (Skaalvik & Skaalvik, 2014).

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Although teacher self-efficacy is modified by individual psychological traits, it is also associated with various benefits on behalf of the students. Students are reported showing higher engagement and academic achievement (Perera & John, 2020) when having teachers with high self-efficacy. Moreover, students perceive their teachers more effective in classroom management if their self-efficacy is higher (Burić & Kim, 2020). These effects can be explained by behavioral differences between low- and high self-efficacy teachers. While teachers with low self-efficacy are less likely to implement innovative teaching methods (Ghaith & Yaghi, 1997; Guskey, 1988), teachers reporting higher self-efficacy tend to encourage the autonomy of their students (Kanadli, 2017).

Teachers' self-efficacy can change over time. Novice teachers report elevated self-efficacy at the end of their student teaching practice, but it decreases as they start working as teachers (Hoy & Spero, 2005). As novice teachers gain experience, their perceived self-efficacy increases, especially as they receive support during their teaching practice. On the other hand, when the first years of work pass such support is often withdrawn, resulting a decreased sense of efficacy. Such 'reality shock' among novice teachers is described in other studies as well, indicating that changing work environment, decreasing support and difficult challenges can lead to reduced self-efficacy (McCormack & Thomas, 2003; Mintz et al., 2020). More experienced teachers tend to report higher self-efficacy highlighting the role of professional experience in the development of self-efficacy (OECD, 2020b).

Job Satisfaction and Workload Among Teachers

Job satisfaction is an important area of research in occupational psychology, as it is highly associated with perceived well-being. Higher job satisfaction is linked to self-esteem (Liu et al., 2017), job commitment (Molero-Jurado et al., 2019) and lower burnout (Skaalvik & Skaalvik, 2007, 2010). Job satisfaction is also associated with lower rates of turnover intentions, which is mediated by organizational commitment (Brunetto et al., 2012). Several factors have been identified as affecting job satisfaction in previous studies, where workplace factors such as perceived autonomy (Skaalvik & Skaalvik, 2009) and self-reported employee creativity are reported as associated with higher job satisfaction (Wang et al., 2021). On the other hand, increased level of job stress is associated with lower job satisfaction among teachers (Heyder, 2019) explaining the negative link between burnout and job satisfaction (Skaalvik & Skaalvik, 2007). Moreover, teachers who report higher physical exhaustion and impaired relationships with colleagues are less satisfied with their job (Molero-Jurado et al., 2019). Increased time pressure is also linked negatively to job satisfaction among teachers (Skaalvik & Skaalvik, 2009).

Workload is another important factor of job satisfaction. Increased workload is linked to higher burnout and lower job satisfaction (Bottiani et al., 2019; Greenglass et al., 2001; Hakanen et al., 2006; Yürür & Sarikaya, 2012). Teaching is generally described as a profession undergoing severe intensification, including the administrative demands from external sources, such as policymakers (Kelchtermans, 2005; Van Droogenbroeck et al., 2014). This process results in increased workload, especially in non-teaching related tasks. Hungarian teachers generally report high workload, as they teach 22-26 classes per week, resulting 652 classes per year on average (OECD, 2020a).

Characteristics of Online Teaching

Online teaching methods has been flourishing in the last decade, as the availability of the necessary technological background have become more widespread (Allen & Seaman, 2014). Although online education may provide teachers possibilities for innovation and personal development, the transition to digital teaching methods can be quite a challenge. Teachers need to take on a new role and get accustomed to the reduced quantity of face-to-face interactions. Uncertainty may arise due to the teachers' own doubts regarding their digital competences, especially as their students are often perceived more proficient in IT-competences. In addition, the technological background of online teaching is often insufficient, as specified hardware and software solutions are needed both for students and teachers. Studies show that older teachers have more negative attitude towards online teaching. Teachers often use their own school experiences as students to find solutions for classroom-related problems. As the majority of present-day teachers have never participated in online learning as students, they are in urgent need of important experience and models. Overall perceived digital competence is a decisive factor, as teachers with higher level of digital skills tend to be more motivated to teach online, and even to help and mentor their colleagues in the process (Shea, 2007).

The transition to digital teaching brought teachers a complex challenge as they had to adapt to new teaching methodologies while paying attention to students' experiences, figuring out how *they* might feel in *their* new learning environment. Teachers often perceived it demanding to get accustomed to the increased amount of workload due to online teaching, the acquisition of online teaching tools and software and adapting teaching materials to the online environment (Liu et al., 2007). Voluntariness seems to be an important factor in creating personal motivation to teach online, as teachers who are required to use digital teaching methods are less enthusiastic than those who do it by their own choice (Shea, 2007)

Online teaching offer both bridges and barriers to teachers (Shea, 2007). Teachers think online teaching is advantageous because it offers a convenient lifestyle (e.g. family needs, less commuting) and it enables them to try innovative teaching methods. On the other hand, teachers are often afraid of not getting enough compensation and

recognition for their effort, and they fear that students will not have sufficient access to the online materials (Shea, 2007).

The Influence of the Pandemic on Education

The COVID-19 pandemic safety measures created an unprecedented situation in which distance education methods were not only an opportunity for innovation any more, but obligatory and inevitable requirement for everyday teaching for all teachers. This sudden change in teaching conditions forced teachers to use online tools and methods regardless of their motivation, experiences or competences. Although previous researches had studied online learning under traditional conditions, it was also important to explore how teachers reacted to rapid and obligatory changes. As little time has passed since the outbreak of the COVID-19 pandemic, only a limited number of studies have focused on this transition. Israeli university researchers found that lecturers reported increased stress levels when switching to online teaching during the COVID-19 pandemic (Besser et al., 2020), while another study indicated high risk of mental health problems among young people who were affected by the COVID-19 outbreak or if their anxiety problems were caused by the viral threat (Huang & Zhao, 2020). These results suggest that deeper exploration of pandemic effects is much needed.

The COVID-19 pandemic reached Hungary in March 2020 with the first case detected on the 4th of March. As new cases were confirmed in the following days, a week later all higher education institutions were obligated to suspend classes and switch to online education. On 16 March the decision was extended to all primary and secondary schools, which meant that all teachers immediately had to start completely online teaching. The transition to online teaching affected teachers differently, as online teaching methods were not widespread in Hungary before the pandemic. Most primary and secondary schools were in lack of virtual classroom facilities, with the exception of the electronic system used for administrative tasks and tools for online communication with students and parents. The use of online teaching methods depended on the teachers' individual intentions and possibilities. Due to significant differences between Hungarian schools in terms of technical conditions and available facilities, huge discrepancy has been developed between schools in their preparedness and the availability of online teaching methods at the time of the transition to distance learning (Molnár, 2015).

Methodology

Research Goal

The goal of the present study was to explore the consequences of the sudden changes of school life caused by the pandemic safety measures. Our aim was to reveal how teachers perceive the obligatory and sudden transition to online teaching as opposed to their previous teaching experience, in the context of teachers' self-efficacy and job satisfaction. Although there was no example of a similar situation before, we established the following hypotheses based on the literature on self-efficacy and job satisfaction.

H1: teachers' satisfaction with their job is positively correlated to teachers' self-efficacy, experienced during the online teaching period

H2: teachers' satisfaction with their job is positively correlate to their sense of workload and sense of competence experienced during the online teaching period

H3: teachers with more experience of digital teaching methods report higher job satisfaction than less experienced teachers.

H4: the reported working hours positively correlate to job satisfaction

H5: teachers who have more experience with digital teaching methods report higher self-efficacy compared to less experienced teachers.

H6: Moreover, we assumed that the measures of job stress and self-efficacy would be significant predictors of the symptoms of job satisfaction.

In the absence of similar research, we formulated an exploratory question about how certain elements of teacher effectiveness were experienced in the compulsory digital education; which aspects they felt the most and the least effective, and how certain factors of effectiveness affected job satisfaction.

Sample and Data Collection

A total of 769 Hungarian teachers participated in this online research (55 men and 677 females, 32 people did not answer this question; (Mean (M)age = 46.3 years, Standard Deviation (SD)age = 9.39). As the convenience-collected sample was not balanced by gender, this aspect was not taken into account in the analysis. The research was not representative, but completed questionnaires were returned from all over the country. In terms of jobs, 42% (318 people) of the sample are primary school teachers, 29.2% (221 people) are upper primary school teachers and 28.8% (218 people) are secondary school teachers. Nobody was excluded from the analyses due to outliers. The participation

in the study was anonymous and voluntary, and participants did not receive any benefit for completing the questionnaires.

The teachers were informed about the nature and the goal of the research. We specifically drew attention to the fact that their answers should have been related to the educational situation at the time (digital education). The research was approved by the Hungarian United Ethical Review Committee for Research in Psychology.

The participants completed an online questionnaire that lasted 20 minutes on average. Data were collected during May 2020.

Measures

First, we asked demographic questions: gender, age, years of teaching experience, geographical location (county) and type of workplace, highest level of education.

Job Satisfaction

Teachers evaluated the sense of satisfaction about their job on a 10-point Likert-scale with higher numbers indicating greater satisfaction (1- Not satisfied at all, 10 - Completely).

Relative Self-Efficacy Scale

In addition to demographic data and sense of satisfaction, teachers completed a questionnaire evaluating their experiences of relative self-efficacy. The obligatory transition to digital education provided an opportunity to explore teachers' relative self-efficacy compared to subjective self-efficacy as perceived during the traditional or digital education. The items are rated from 1 ("strongly disagree") to 5 ("strongly agree"). This two-dimensional questionnaire (workload, sense of competence) includes 8 items, the factors can be interpreted independently: higher score on the workload scale indicates higher load perception, and higher score on the competence scale indicates stronger efficiency experience.

Prior research showed acceptable psychometric properties and the CFA yielded a good fit to the data (($\chi^2(17) = 50,8$, $p < 0.001$; $\chi^2/df = 2.98$; $RMSEA = 0.05$; $0.04 \leq 90\%$ $CI \leq 0.07$; $CFI = 0.99$; $TLI = 0.98$, $SRMR = 0.04$) and confirmed the strong factor structure underpinning the instrument (Kóródi et al., 2020). The scale is also reliable from an internal consistency perspective (Subscales Workload Cronbach's α = .859, Sense of Competence Cronbach's α = .773).

Norwegian Teacher Self-Efficacy Scale

For measuring teacher self-efficacy, we used a translated and validated version of Skaalvik and Skaalvik's (2007) Norwegian Teacher Self-Efficacy Scale (NTSES). The Hungarian version of the questionnaire consists of a total of 17 items separating the different areas of teacher self-efficacy on 5 subscales (Teaching, Classroom management, Motivation, Conflict-Management and Coping). Participants use a 7-point Likert-scale to indicate how well they can accomplish the listed teacher assignments in (digital) educational settings. All questionnaire items could be adapted well to digital education.

Prior research showed acceptable psychometric properties and the CFA yielded a good fit to the data ($\chi^2(53) = 222$; $p < 0.001$; $\chi^2/df = 4.18$; $RMSEA = 0.06$; $0.05 \leq 90\%$ $CI \leq 0.07$; $CFI = 0.97$; $TLI = 0.96$, $SRMR = 0.03$) and confirmed the strong factor structure underpinning the instrument (Kóródi et al., 2020). Reliable internal consistency was found. The mean scores of the subscales and the mean score of the entire questionnaire can also be interpreted. The reliability index of the questionnaire is excellent (Cronbach's α = 0.944).

Previous Experience in Digital Teaching Methods

Teachers rated their experience with digital teaching methods by estimating how often they gave their students tasks that required digital platform. They answered on a 4-point Likert-scale, with higher numbers indicating greater experience (1 = Never, 4 = Regularly).

Statistical Analysis

Data were analyzed using Jamovi 1.2. (Jamovi Project, 2019) and JASP (JASP Team, 2020). First, descriptive statistics were computed for separate factors, based on prior results (BLINDED). Next, correlational relationships were tested between the study variables, and differences were examined between groups formed on the bases of previous digital educational experience. Finally, structural equation modeling (SEM) was conducted with JASP program to examine the structural relationships between the job stress and self-efficacy.

The study examined common method bias (CMB) adopting Harman's single factor test. Principle component analysis was launched without rotation (Podsakoff et al., 2003). The analysis revealed that the first factor accounted for the

39.5% of variance, below the cutting-off point of 50% (Harman, 1976). We concluded that the common method bias was not an issue for our data.

Results

We first examined the descriptive statistical features and the means of the measured factors assumed among the participants and summarized in Table 1.

Table 1 - Descriptive statistics and intercorrelations between all measures.

Scale	1	2	3	4	5	6	7	8	9	10	11
1 - Job satisfaction	—	—	—	—	—	—	—	—	—	—	—
2 - Life satisfaction	0.396**	—	—	—	—	—	—	—	—	—	—
3 - Family life satisfaction	0.273**	0.760**	—	—	—	—	—	—	—	—	—
4 - Relative Self-Efficacy Scale - Workload	-0.107*	-0.365**	-0.473**	—	—	—	—	—	—	—	—
5 - Relative Self-Efficacy Scale – Sense of competence	0.443**	0.277**	0.201**	-0.208**	—	—	—	—	—	—	—
6 - NTSES Overall	0.586**	0.283**	0.194**	-0.050	0.395**	—	—	—	—	—	—
7 - Teaching subscale	0.566**	0.260**	0.178**	-0.065	0.385**	0.897**	—	—	—	—	—
8 - Classroom management	0.550**	0.273**	0.176**	-0.124**	0.398**	0.890**	0.797**	—	—	—	—
9 - Motivation	0.538**	0.263**	0.171**	-0.056	0.336**	0.844**	0.721**	0.711**	—	—	—
10 - Conflict-Management	0.373**	0.198**	0.154**	0.004	0.220**	0.824**	0.673**	0.642**	0.594**	—	—
11 - Coping	0.529**	0.242**	0.180**	-0.064	0.283**	0.764**	0.690**	0.676**	0.578**	0.591**	—
N	763	761	763	762	763	687	753	754	750	716	751
Range	1-10	1-10	1-10	1-5	1-5	1-7	1-7	1-7	1-7	1-7	1-7
M	6.94	6.91	6.45	3.86	2.68	4.64	4.9	4.42	4.02	5.11	5.03
SD	2.01	2.17	2.66	0.94	0.91	1.18	1.35	1.37	1.45	1.46	1.39
Skewness	-	-	-	-0.67	0.27	-0.59	-0.74	-0.37	-0.2	-0.85	-0.8
Kurtosis	-		-	-0.24	-0.42	-0.06	0.11	-0.38	-0.7	0.11	0.27

Note: *p < 0,05; **p < 0.001

Descriptive statistics above shows that respondents were relatively satisfied with their work. The lowest value was obtained in the relative self-efficacy competence subscale, which means that they felt less competent compared to the normal educational conditions, however, it was much more stressful for them than traditional education.

Job satisfaction and self-efficacy

Regarding job satisfaction, we hypothesized that it was associated with higher self-efficacy and higher relative self-efficacy. These relationships were verified by correlation analysis. The correlation of each factor with job satisfaction is shown in Table 1.

First, we hypothesized a relationship between job satisfaction and teacher self-efficacy. As skewness and kurtosis were not higher than 2, normal distribution was assumed. According to the Pearsons' correlation test job satisfaction and general self-efficacy and some of its components are strongly related. The strongest positive relationship was found between job satisfaction and the education organization subscale of self-efficacy while the conflict-management subscale showed the weakest relationship. The results confirmed our preliminary hypothesis.

Teachers' sense of workload (measured with the Relative Self-Efficacy Scale) and their job satisfaction were significantly negative correlated. There is a moderate and significant positive relationship between the competence dimension of the Relative Self-Efficacy Scale and job satisfaction. The Relative Self-Efficacy Scale's competence subscale is weakly or moderately significantly correlated with all of the Teacher Self-Efficacy Scale subscales.

Previous experience in digital teaching methods

Regarding digital teaching methods (H3) we found that teachers more experienced with digital teaching methods reported higher job satisfaction, as there was a low significant positive correlation between previous digital teaching experience and job satisfaction ($r(761) = .18; p < .001$).

We assumed (H4) that working hours spent with educational activity (e.g., teaching, administrating, keeping in touch with children and parents) would positively correlate with job satisfaction. The results of the Spearman's correlation showed no significant relationship between job satisfaction and working hours ($r(753) = .08, p = .037$).

We hypothesized (H5) that teachers who had previously used digital platforms in education on a regular basis were more likely to transit to full online education. Therefore, we asked how often they gave students tasks on digital platforms in traditional education, before the digital transition. The frequency of the responses is shown in Table 2.

Table 2 - Frequency of using digital assignments during the traditional education period

Previously how often did you give students tasks on a digital platform?	N	%
Never	175	22.8 %
Sometimes	394	51.4 %
Often	112	14.6 %
Regularly	86	11.2 %

The majority of the interviewed teachers (74.2%) never or sometimes gave digital tasks. This points out that these platforms have not yet become part of the methodological teaching tools.

The results of the Kruskal-Wallis Test clearly supported the assumption that those for whom digital teaching was largely unknown would feel less effective than those who had used digital platforms regularly in the past (Table 3).

Table 3 - Differences between groups based on previous digital educational experience on the subdimensions of the Teacher Self-Efficacy Scale

Teacher Self-Efficacy Scale	χ^2	df	*p*	ε^2
Teaching	26.17	3	< .001	0.03
Classroom management	35.57	3	< .001	0.05
Motivation	24.26	3	< .001	0.03
Conflict-Management	13.44	3	0.004	0.02
Coping	13.58	3	0.004	0.02
Overall Self-Efficacy	31.28	3	< .001	0.05

Based on the post-hoc test (DSCP pairwise comparisons), as expected, the greatest efficiency was experienced by those who had previously given students frequent or regular assignments on digital platforms. Descriptive statistics and the exact differences between the groups are shown in Table 4.

*Table 4 - Differences between groups based on digital educational experience in the areas of self-efficacy (*p < .05)*

Teacher Self-Efficacy Scale	Previously how often did you give students tasks on digital platforms?	N	Mean (SD)	DSCF-post-hoc (*p*)			
				Never	Sometimes	Often	Regularly
Teaching	Never	171	4.60 (1.48)	-	0.353	0.03*	< .001*
	Sometimes	386	4.85 (1.3)		-	.046*	< .001*
	Often	110	5.22 (1.17)			-	0.588
	Regularly	86	5.34 (1.32)				-
Classroom management	Never	171	4.16 (1.42)	-	0.8	0.03*	< .001*
	Sometimes	388	4.30 (1.34)		-	.007*	< .001*
	Often	111	4.77 (1.18)			-	0.183
	Regularly	84	5.05 (1.34)				-
Motivation	Never	170	3.77 (1.49)	-	0.614	.003*	< .001*
	Sometimes	385	3.92 (1.46)		-	.025*	.002*
	Often	109	4.37 (1.29)			-	0.786
	Regularly	86	4.52 (1.32)				-
Conflict Management	Never	162	4.91 (1.53)	-	0.884	.046*	.032*
	Sometimes	367	5.03 (1.45)		-	0.08	.047*
	Often	103	5.41 (1.34)			-	0.997
	Regularly	84	5.44 (1.36)				-
Coping	Never	172	4.79 (1.54)	-	0.558	0.157	.006*
	Sometimes	386	5.00 (1.36)		-	0.607	.019*
	Often	110	5.22 (1.13)			-	0.336
	Regularly	86	5.40 (1.4)				-
Overall Self-Efficacy	Never	156	4.43 (1.26)	-	0.863	.001*	< .001*
	Sometimes	350	4.53 (1.16)		-	.019*	< .001*
	Often	100	4.92 (1.06)			-	0.286
	Regularly	81	5.16 (1.07)				-

The final assumption of the current study was that measures of job stress and self-efficacy would be significant predictors of the symptoms of job satisfaction. To examine which factors had a significant effect on job satisfaction Structural Equation Modeling (SEM) was applied using JASP (JASP Team, 2020). The analysis used a diagonally weighted least squares estimator, and several indices (CFI, TLI, SRMR, RMSEA, Chi-square/df) were used to determine goodness-of-fit according to Hu and Bentler's (1999) criteria. Variables that did not have a significant effect on the outcome variable were excluded from the model.

The model included the subscales of the Teacher Self-Efficacy Scale and the Relative Self-Efficacy Scale as exogenous variables and job satisfaction as endogenous variable. After excluding the variables lacking significant effects on the outcome variables, the results of the analysis indicated good fit to the data ($\chi2$ 63) = 165.114, p < 0.001; $\chi2/df$ = 2.62; TLI = 0.944; CFI = 0.996; RMSEA = 0.048; 0.039 ≤ 90% CI ≤ 0.057; SRMR = 0.039). The results of the analysis are shown in Figure 1. The exogenous variables included in the model explained a significant proportion of the variance of job satisfaction scores (R^2 = 0.492). Competence subscale of Relative Self-Efficacy was positively related to Job Satisfaction (β = 0.668), just as Motivation (β = 0.708) and Coping (β = 1.264) subscales of Teacher Self-Efficacy. On the other hand, Conflict Management subscale of Teacher Self-Efficacy was negatively related to the outcome variable (β = −0.95).
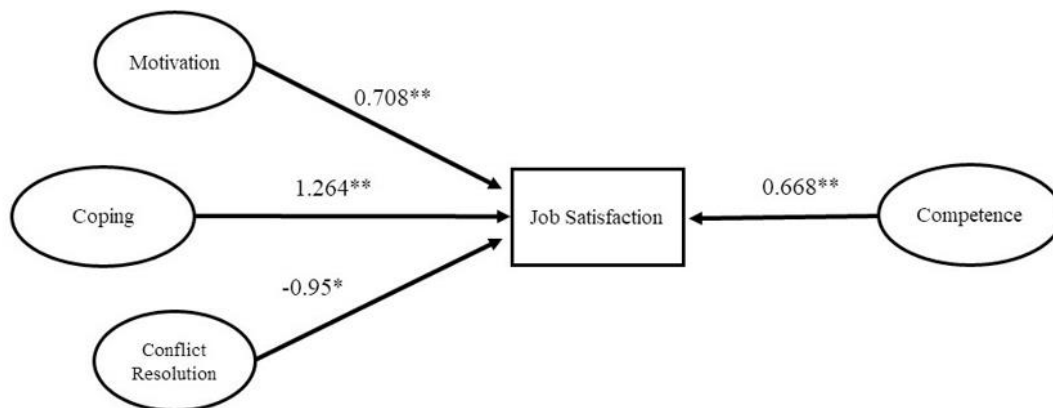

*Figure 1 - Structural model results showing standardized path coefficients between job satisfaction, teacher self-efficacy and relative self-efficacy subscales. Intercorrelations, insignificant paths, and error terms were removed for simplicity. *p < 0.05; ** p < 0.01*

Discussion

The aim of our study was to explore teachers' perceived effectiveness during the period of digital education introduced as a result of the coronavirus pandemic, and its effects on job satisfaction. As a similar situation has not yet occurred in the Hungarian pedagogical practice (and perhaps other countries neither), our research is fundamentally phenomenological. We aimed to examine the relationship of two determinants that may have influenced the sense of efficiency: (1) previous experience in digital platforms and methods and (2) job satisfaction.

As we could not compare the teachers' sense of efficiency experienced during the pandemic with previous results, we examined whether teachers experienced the loss of efficiency compared to normal education; what we called relative self-efficacy. The results suggest that teachers experienced more workload and lower level of competence. In addition, they reported low level of self-efficacy in the area of classroom management and motivation.

These can be explained by the fact that both the teacher-student relationship (Little & Kobak, 2003) and the classroom atmosphere also play a key role (Hughes & Kwok, 2007) in the students' motivation, due to the strong influence of personal presence. Unfortunately, the classroom environment does not appear in virtual space and the role of personal relationship and motivation is presumably limited. In the field of Classroom management, proficiency in the use of digital technology and methods seems to be a determining factor. More than 70% of the participant teachers never or very rarely gave digital assignments before. Therefore, the sudden transition understandably made it difficult for them to organize education. This explanation is supported by the fact that teachers, who were more proficient in using digital technology in education, experienced significantly higher self-efficacy in all dimensions than those who had not or rarely used these opportunities previously. Respondents experienced higher-than-average workload and lower sense of competence, during the online teaching period compared to traditional education, which shows a clear correlation with job satisfaction and its decrease. This result is consistent with previous research findings (Liu et al., 2017), confirming it even in this extreme situation. Previous study has proved that perceived stress is also associated with job satisfaction (Heyder, 2019).

Examination of relative self-efficacy proved that teachers felt more stressful than average and less competent. The concept of efficacy refers to the relationship between investment and return. We found that teachers felt less success in this forced digital education at the cost of more investment, so they have experienced a decline in relative self-efficacy. This confirms the result that shows no correlation of higher workload and higher level of satisfaction. Even more, we did not even find a relationship between the working hours and satisfaction: though teachers worked more, they did not feel that this investment was worth it. This is presumably due to the fact that part of the work-related pressure was related to the acquisition of digital technology, which has not yet resulted in better educational performance itself, especially for those who used these methods and tools this period at first. Even with a lot of work and learning, teachers unfamiliar with Information and Communication Technology (ICT) could only master basic skills and did not feel that they could do a good enough job with them. The analysis of latent variables showed that job satisfaction is determined by the competence subscale of the relative self-efficacy, which also highlights the importance of digital literacy. The success in motivation and the ability to cope with the changing circumstances also played a significant role in satisfaction, as did the conflict management.

Conclusion

Despite all the limitations of our research, we pointed out that the sudden and obligatory digital transition in education was mostly associated with a decrease in teachers' self-efficacy which related to a decrease in job satisfaction. However, this effect was shown to be reduced by the ability to use digital devices. The research also drawn attention to the fact that emphasis should be placed on the use of ICT tools and the introduction of online teaching methods in teacher training and in-service training; briefly the development of teachers' digital competence. Our findings indicated that there was no clear relationship between job satisfaction and invested working hours. The feeling of efficiency proved to be more determinant, as it was related to its result.

The most important factors of satisfaction were coping and successful conflict management. The unusual educational situation may also have brought new types of conflicts to the surface. Collaborating with colleagues, parents, and students became more difficult, so teachers 'success in dealing with new types of conflicts was of outstanding importance (Hagemeister & Volmer, 2018). Our results indicate the importance of developing conflict management strategies in teacher education, including how to handle specific online cases. Considering the current situation may be repeated (the epidemic is not yet over), it is conceivable that although the online form of teaching may later only occur in crisis situation, it will also be integrated into the traditional pedagogical practice.

Despite the negative consequences of the coronavirus pandemic, teachers have recently developed a number of online tools and teaching methods, which can be well applied in traditional educational situation as well. During the period of digital education, teachers' digital competence probably developed much, and the generational gap in digital literacy may be reduced.

Limitations

Our research has numerous limitations. First, the sample was not representative and the data collection was done by a non-randomized procedure. An additional difficulty in interpreting the results was the lack of information about the participant teachers' effectiveness in non-digital (traditional) education, our results could not be compared to previous data.

Authorship Contribution Statement

Szabó: Concept and design, writing, supervision. Kóródi: Statistical analysis, writing. Szél: Writing and review. Jagodics: Statistical analysis and writing.

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