

Stress Factors Among Grade 2 Teachers: Links to Classroom Activities and Teacher Interaction Styles

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Abstract. This study involved a comparison of the prevalence of two work-related stressors (job-related issues and information and communications technology [ICT] use) and three situational stress factors (COVID-19, geopolitical concerns, and economic conditions) among 40 Grade 2 teachers in Lithuania. Also investigated were associations between the stress factors, the frequency of classroom activities (literacy and mathematics), and teacher interaction styles (affection, behavioral, and psychological control). A total of 40 Grade 2 teachers answered online questionnaires in April–May 2022, a period defined by the ongoing COVID-19 pandemic and the recent (2–3 months prior) start of the Russo–Ukrainian war. The results showed that, of the five stress factors examined, the highest levels of stress expressed by teachers were related to the geopolitical situation, which scored significantly higher than work-related stress factors (job-related issues and ICT use). The results also indicated that all stress factors except geopolitical situation were associated with behavioral and psychological control, suggesting that teachers who report higher levels of stress apply more controlling interaction styles when teaching their second graders. Moreover, the findings revealed that the frequency of classroom activities and the positive dimension of the interaction style of teaching (i.e., affection) were not related to any of the stress factors.

Keywords: teacher stress, COVID-19, geopolitical situation, teachers, stress factors.

Antrojų mokytojų streso veiksniai: ryšiai su klasės veiklų dažnumu ir mokytojų bendravimo su klase stiliumi

Santrauka. Tyrimė tirti du su darbu susiję streso veiksniai (streso dėl darbo ir streso dėl informacinių ir ryšių technologijų naudojimo) ir trys situaciniai streso veiksniai (streso dėl COVID-19, geopolitinės situacijos ir ekonominės situacijos), taip pat kiek iš 40 Lietuvoje vertintų mokytojų patiria stresą dėl šių veiksnių. Be to, įvertintas ryšys tarp streso veiksnių, klasės veiklų dažnumo (lietuvių kalbos ir matematikos) ir mokytojų bendravimo su klase stiliaus (emocinės paramos, elgesio ir psichologinės kontrolės). Antros klasės mokytojos ($n = 40$) internetines anketas užpildė 2022 m. balandžio–gegužės mėnesiais. Šį laikotarpį apibrėžė besitęsianti COVID-19 pandemija ir besitęsiantis Rusijos ir Ukrainos karas. Pirma, rezultatai parodė, kad iš penkių streso veiksnių mokytojai kaip didžiausią nurodė

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stresą dėl geopolitinės situacijos, kuris buvo kur kas didesnis už su darbu susijusį stresą. Antra, įtampa dėl visų streso veiksnių, išskyrus stresą dėl geopolitinės situacijos, buvo susijusi su mokytojų elgesio ir psichologine kontrole. Tai rodo, kad aukštesnio lygio stresą patiriantys mokytojai taiko labiau kontroliuojantį bendravimo su savo klase stilių. Trečia, mokymo veiklų dažnumas ir pozityvaus santykio dimensija (emocinė parama) nebuvo susiję su mūsų tirtais streso veiksniais.

Pagrindiniai žodžiai: mokytojų stresas, COVID-19, geopolitinė situacija, mokytojai, streso veiksniai.

Introduction

The teaching profession is extremely demanding and often recognized as highly stressful compared to other professions (Johnson et al., 2005; Kyriacou et al., 2001; Pöysä et al., 2021). Teachers typically report being stressed about job-related issues, such as their workload and classroom management (Klassen & Chiu, 2010, 2011). Furthermore, situational factors not directly related to their job that represent wider societal influences may appear as additional factors causing stress in teachers' work. This situational stress can be even stronger and more impactful than everyday work-related stress (Pöysä et al., 2021). In spring 2022, such situational stress factors among Lithuanian teachers included the COVID-19 pandemic and the Russo–Ukrainian war. Two years earlier, in the spring of 2020, teachers around the world faced unexpected challenges in their work due to the outbreak of the COVID-19 pandemic and the social distancing measures put in place globally to limit the spread of the virus, which necessitated a shift to online learning for students around the world. Since then, the pandemic has gone through multiple phases, as teachers adjusted to the new reality of working and teaching remotely, live, or in hybrid mode. The pandemic continued during the 2021–2022 academic year, and teachers were expected to react and adjust their mode of teaching based on the virus-related state of affairs in society in general and in their specific classroom/school. The pandemic outbreak and the uncertainty of the situation for the two years that followed arguably increased stress levels among teachers worldwide (Pöysä et al., 2021). Moreover, the Russo–Ukrainian war started on February 24, 2022. As a result, due to the geographic location and political position of Lithuania, many Lithuanian citizens felt threatened/unsafe, and their economic and emotional well-being was affected. The unresolved and ongoing COVID-19 situation and the uncertain geopolitical situation together may have contributed to the stress levels and well-being of Lithuanian citizens at large and Lithuanian teachers specifically. Thus, we investigated the prevalence of the following stress factors among Grade 2 Lithuanian teachers: work-related (job stress and stress about ICT use) and situational (COVID-19, geopolitical concerns, and economic conditions).

In their work, teachers engage students in a variety of activities to promote the students' reading and mathematics skills (LR Ministry of Education, Science and Sports, 2008, 2017). In Grade 2, such literacy activities may include practicing to read accurately and fluently, to understand spoken and written word, and to spell or write words, sentences, and texts (LR Ministry of Education, Science and Sports, 2017). As for math, mathematics activities for Grade 2 students may include practicing basic mathematical concepts

(e.g., equal, length, weight, time), addition, and subtraction (LR Ministry of Education, Science and Sports, 2008). Literacy and mathematics teaching activities for the whole classroom are designed to enhance children's academic development; thus, the frequency and variety of such activities are important subjects to investigate (Silinskas et al., 2017). In the context of our study, teachers may experience stress related to their approach to their everyday work, which can diminish the variability and frequency of their instructional activities. In contrast, due to high investment in variability and frequency of instructional activities at work, teacher may become susceptible to stress. Thus, an investigation into the frequency and variety of those activities can uncover such conditions.

Studies also show the importance of teachers' style of interaction while delivering classroom activities (Kiuru et al., 2012). Interaction style of teaching can be defined as a constellation of attitudes and behaviors that characterize the nature of relationship between the teachers and their students (Kiuru et al., 2012). Research on teachers' interaction styles has relied on a traditional parenting style paradigm and adopted either a dimensional or a typological approach. In the dimensional approach, the two most widely investigated dimensions were proposed—affection (e.g., responsiveness, acceptance) and behavioral control (e.g., maturity demands, limit setting) (Baumrind, 1989). The third dimension—psychological control—has also been often included to represent behaviors that are intrusive and manipulative of children's thoughts and feelings towards the adult (Barber, 1996). Dimensions of interaction styles have been shown to impact the development of children's academic skills and behavior (Aunola & Nurmi, 2004, 2005; Kiuru et al., 2012; Silinskas et al., 2020). Importantly, being stressed can affect teachers' classroom behavior, including their interaction style (Pöysä et al., 2021; Silinskas et al., 2016). For instance, more stressed teachers may demonstrate less affectionate or emotionally supportive behavior and exhibit more controlling behavior toward their students (Bartholomew et al., 2014; Moe et al., 2022). The opposite can also be true. Thus, investigation of teachers' style of interaction is important in teachers' stress research.

Despite general expectations that higher levels of teacher stress would be related to instructional activities being offered less frequently and more negative interaction styles, different stressors (e.g., work-related or situational) may differentially relate to teachers' classroom practices and interaction styles. This nuanced picture has not been investigated in prior research. Consequently, the aim of the present study was to investigate and compare the prevalence of several work-related and situational stress factors among Lithuanian Grade 2 teachers. We also investigated which Grade 2 teachers' stress factors were associated with the frequency of their literacy and mathematics classroom activities and their interactional style of teaching.

Method

Participants and Procedure

Forty Grade 2 teachers participated in the study “Get involved! Learning in primary school” (Silinskas & Raiziene, 2021–2024). Ethical approval was issued by the University of Jyväskylä.

kylā (December 17, 2020; approval number 1599/13.00.04.00/2020). Teacher participants signed online consent forms before completing the online questionnaire: questionnaires were submitted between April 21 and May 30, 2022 (*median* = May 5). All questionnaires were presented in Lithuanian language. This measurement point was the second measurement of the longitudinal data collection (the first measurement point took place in the first half of the academic year 2021–2022 [in autumn semester]). Therefore, in the present measurement point, teachers were asked to answer questions concerning the second half of the academic year 2021–2022 (spring semester, since Christmas). The teachers were all female, spoke Lithuanian in their homes, and ranged in age from 22 to 68 ($M = 50.08$, $SD = 10.69$). At the time of data collection, 2 teachers (5%) were pursuing bachelor's degrees, 26 (65%) had earned bachelor's degrees, 11 (27.5%) had master's degrees, and 1 (2.5%) had obtained higher than a master's degree. Their experience as primary school teachers ranged from 1 to 40 years ($M = 20.80$, $SD = 12.84$). The classroom size ranged from 16 to 26 students ($M = 21.80$, $SD = 2.61$) and included 0 to 3 students with special needs (*mode* = 15 classrooms with 0 and 15 classrooms with 1 special needs student).

Instruments

Stress factors were assessed using 13 items beginning with the stem “*I am stressed by these factors,*” which were rated on a 6-point Likert scale (1 = completely disagree through 6 = completely agree). Five items related to job stress, developed by Klassen and Chiu (2010), measured teaching stress due to workload and student behavior (e.g., “Students’ impolite behavior and rudeness” and “Having too much work to do”; Cronbach’s $\alpha = .82$). The other eight items were created for the current study to reflect the situational/societal reality at the data gathering point. These items addressed stress due to ICT use (2 items; e.g., “ICT usage in teaching”; Cronbach’s $\alpha = .65$), the pandemic (2 items; e.g., “Unpredictable COVID-19 situation in society”; Cronbach’s $\alpha = .97$), geopolitical concerns (2 items; e.g., “Geopolitical situation in the world”; Cronbach’s $\alpha = .83$), and economic conditions (2 items; e.g., “Economic situation in your family”; Cronbach’s $\alpha = .86$).

Frequency of classroom activities/practices was measured with 24 items that called for responses via a 5-point Likert scale (1 = never through 5 = a few times per day), which were based on prior research (Lerkkanen et al., 2006–2016; Silinskas et al., 2017) and adapted to the Lithuanian context (LR Ministry of Education, Science and Sports, 2008, 2017). Teachers were provided with the stem “*How often since Christmas have these practices/activities occurred in your classroom?*” The subscales measured literacy activities (16 items; e.g., “Reading accuracy” and “Rewriting words, sentences or texts”; Cronbach’s $\alpha = .71$) and math activities (8 items; e.g., “Basic mathematical concepts” and “Subtraction”; Cronbach’s $\alpha = .68$).

Interaction style of teaching was measured using the Teacher Interactional Style Scale (Aunola et al., 2005), which was piloted and adapted to the Lithuanian context by the previous study (Silinskas & Ražiene, 2017–2018). Teachers were asked to evaluate 20

items using a 5-point scale (1 = completely disagree through 5 = completely agree). The three subscales were affection (10 items; “I often show the children of my class that I care about them” and “I often tell my pupils how much I appreciate it that they try to do something or achieve something”; Cronbach’s alpha = .73), behavioral control (5 items; e.g., “Children have to learn that rules are important in our group” and “Children should learn to behave well toward their teachers”; Cronbach’s alpha = .65), and psychological control (5 items; e.g., “I believe it is good for the children in my class to know all the things I do for them” and “Children in my class need to learn to respect how good their situation is”; Cronbach’s alpha = .71).

Results

For all study variables, skewness and kurtosis values were within the limits of ± 2 , except the kurtosis value for geopolitical stress (kurtosis = 2.03). Normality tests detected deviation from normality for the geopolitical factor (Kolmogorov–Smirnov [35] = .17, $p = .01$; Shapiro–Wilk [35] = .92, $p = .02$). Thus, due to the geopolitical stress variable and small sample size ($n = 40$), we ran non-parametric tests in SPSS-28 to answer our research questions.

First, to compare the frequency of the stress factors experienced by the teachers in spring 2022, we applied related-samples Friedman’s two-way analysis of variance by ranks (Figure 1). The test uncovered mean rank differences between the factors (test statistic [4] = 19.31, $p < .001$). The pairwise comparisons with significance values adjusted by

Figure 1

Mean Rank Comparisons of Five Stress Factors Among Grade 2 Teachers ($n = 40$)

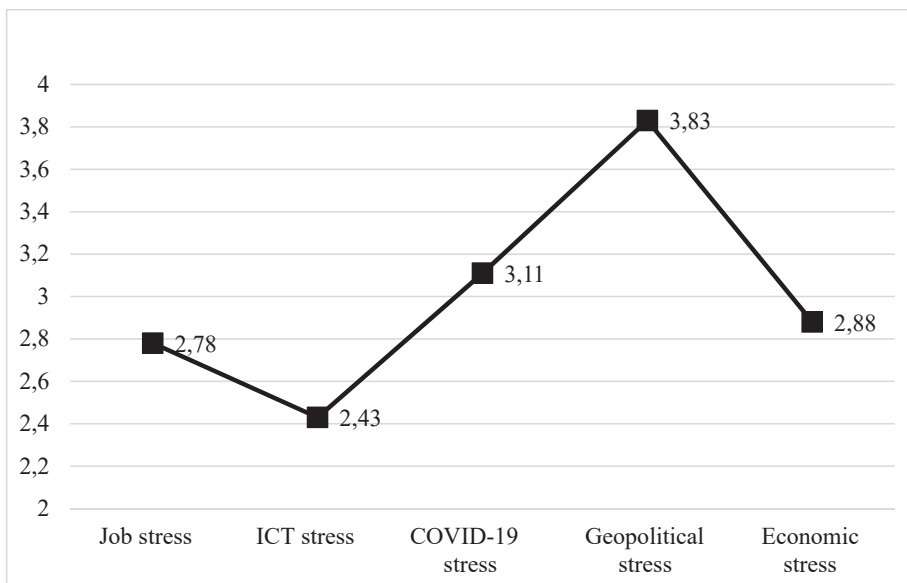


Table 1
Descriptives and Spearman Correlations Between Grade 2 Teachers' Stress Factors, Classroom Practices, and Interaction Styles of Teaching

	M	SD	Min	Max	1	2	3	4	5	6	7	8	9
<i>Stress factors</i>													
1 Job stress	3.90	1.06	1.80	5.80									
2 ICT stress	3.49	1.19	1	6	.36*								
3 COVID-19 stress	3.81	1.48	1	6	.40*	.39*							
4 Geopolitical stress	4.43	1.05	1	6	.37*	.30	.37*						
5 Economic stress	3.70	1.42	1	6	.58**	.47**	.65**	.47**					
<i>Frequency of classroom activities/practices</i>													
6 Literacy practices	3.42	0.33	2.69	4.19	.06	.11	-.06	.23	-.05				
7 Mathematics practices	3.41	0.41	2.50	4	-.09	.03	-.25	.08	-.17	.50**			
<i>Interaction style of teaching</i>													
8 Affection	4.28	0.37	3.50	5	-.07	-.03	-.12	.10	-.16	.42**	.29		
9 Behavioral control	3.47	0.51	2	4.40	.48**	.36*	.35*	.13	.51**	.02	-.08	.06	
10 Psychological control	3.05	0.55	2	4.40	.61**	.22	.34*	.21	.53**	.02	-.02	.09	.67**

* $p < .05$, ** $p < .01$

the Bonferroni correction for multiple tests indicated geopolitical stress was significantly higher among Grade 2 teachers (*mean rank* = 3.83) than job-related (*mean rank* = 2.78) and ICT use (*mean rank* = 2.43) stress. Other pairwise comparisons were not significant.

Second, to investigate associations between Grade 2 teachers' stress factors and the frequency of their classroom practices/activities and their interaction styles of teaching, we calculated Spearman correlations (Table 1). The results uncovered no relation between the frequency of literacy or mathematics practices and teachers' stress. Moreover, teachers' affection was not linked to their stress, but behavioral and psychological control was. Specifically, behavioral control significantly positively correlated with teachers' stress from their job, ICT use, COVID-19, and economic conditions, whereas psychological control significantly positively correlated with job, COVID-19, and economic stress. Based on Cohen's (1988) criteria, all significant correlations indicated medium to large effect sizes.

As supplementary analyses, we investigated correlations between the overall stress variable (all stress factors combined into one construct) and teachers' classroom activities and interaction style and found that overall stress was related to behavioral control ($\rho = .50, p < .001$) and psychological control ($\rho = .60, p < .001$), suggesting a large effect (Cohen, 1988). Further supplementary analyses revealed none of the teacher demographics or classroom characteristics (teacher age, education, primary school experience, class size, or number of special needs students) were significantly related to any of the stress factors, classroom activities, or interaction styles.

Discussion

This study was conducted to investigate the prevalence of situational and work-related stress factors among Lithuanian Grade 2 teachers during the COVID-19 pandemic and the Russo-Ukrainian war (April–May 2022). Also investigated were associations between Grade 2 teachers' stress factors and the frequency of their classroom practices and their interactional style of teaching. Three main results emerged: (1) teachers were most stressed about geopolitical concerns, but this stress did not relate to their classroom activities or their interaction style; (2) behavioral and psychological control were linked to teachers' higher stress levels concerning job, ICT, COVID-19, and economics (but not geopolitical situation); and (3) the frequency of classroom activities and positive dimension of the teacher's interaction style (i.e., affection) were not related to the stress factors examined.

Of the five stressors under study, the Grade 2 teachers were most stressed about their geopolitical situation. This is understandable, given data collection occurred in April–May 2022, 2–3 months after the Russo–Ukrainian war started, and at the time, Lithuanian media and society were expressing serious concerns over the safety of Lithuania and demonstrating strong support for Ukraine. Interestingly, Grade 2 teachers' stress concerning their geopolitical situation was significantly greater than their daily work-related stress, such as stress about workload, classroom management, and ICT use. This supports our expectation that situational/societal stressors, such as those triggered by war, the pandemic, or economic decline, were worrying teachers more than everyday work life issues. This may

suggest these teachers were self-efficacious and confident as teachers in managing their everyday work situations (Klassen & Chiu, 2010, 2011).

Another finding was that work-related and situational stress were not associated with the frequency of teacher-reported classroom literacy and mathematics activities but were related to teacher interactional style. Specifically, higher stress levels were associated with higher levels of behavioral and psychological control approaches to students. The connection between teacher stress and controlling behavior towards students can be explained by the self-determination theory. Based on the theory, teacher stress prohibits teachers from satisfying their basic psychological needs (autonomy, competence, and relatedness) (Bartholomew et al., 2014), which may decrease teachers' internal resources to be responsive to their students' needs. Thus, in order to change students' behavior and help them learn, teachers may choose controlling strategies (Moe et al., 2022). Our results are particularly notable because controlling practices have been shown to affect children's academic skill development (Aunola & Nurmi, 2004; Kiuru et al., 2012) and behavior (Aunola & Nurmi, 2005). Whether behavioral control represents a positive (e.g., structuring, setting clear norms and expectations) or a negative (e.g., restricting children's autonomy, competence) form of control and, accordingly, enhances or undermines children's learning and behavioral outcomes has been debated (Aunola & Nurmi, 2004, 2005). In contrast, psychological control is consistently identified as a detrimental factor in children's learning and behavioral development (Aunola & Nurmi, 2004, 2005). Thus, in line with previous research (Pöysä et al., 2021), teacher stress was shown to enhance both forms of controlling behavior, but the impact of those forms of behavior on student outcomes requires further study.

Although we assumed situational stressors (geopolitical situation, COVID-19, economic conditions) would link to classroom practices and teacher interaction styles in Grade 2 classrooms, our expectations were only partly supported. Surprisingly, the most prevalent stress factor (i.e., geopolitical stress) was not associated with any classroom activities or interaction styles. Furthermore, none of the stress factors covaried with teachers' frequency of literacy and mathematics activities or expression of affection toward students. These null results can be interpreted positively: Situational stressors are less likely to affect teachers' work than work-related stress, and stress factors, overall, do not relate to teachers' instruction (classroom activities) or to the classroom emotional climate. Teacher demographics and classroom characteristics were also not related to the main variables, so they were omitted from the analyses, but they suggest that teachers are equally likely to experience certain types and levels of stress and that demographics do not trigger significant variations in the frequency of classroom activities or in teachers' interaction style.

A few limitations must be acknowledged. First, cross-sectional data were used in this study, which is appropriate for investigating a situation at a particular point; however, longitudinal studies are needed to draw stronger conclusions based on the tendencies described herein. Second, only 40 Grade 2 teachers participated in the study, which precluded obtaining more results and conducting more complex statistical analyses. Third,

the results were based only on one informer—the teacher—which is not optimal for collecting data due to common-method and social desirability biases. Overall, although the measures we used did not deviate from normality (except for geopolitical stress), and because we used non-parametric tests to obtain reliable results, the tendencies observed need to be replicated and expanded upon in future research. Consequently, future studies need to collect longitudinal data to address the issue of tentative direction of prediction between teacher's stress factors and their classroom instruction and interaction styles. Larger samples need to be employed. In addition, estimating the effects of teacher stress on the variables reported by other informants (e.g., children's academic and behavioral outcomes) remains the challenge for future research.

In conclusion, our study investigated stress factors among Grade 2 teachers in Lithuania in April–May 2022. The results suggest teachers were most stressed about geopolitical conditions in Lithuania (in comparison to, e.g., job-related or ICT use stress). However, this stress was not related to teachers' self-reported classroom behavior. Furthermore, stress factors were not linked to the positive dimension of teacher interaction style (affection or emotional climate in the classroom), but they did relate to negative dimensions of teacher interaction style—behavioral control and psychological control. From the practical viewpoint, schools and professionals working with teachers should acknowledge that both the frequency of instructional activities and the interaction styles with which they are delivered (interactional styles of teaching) contribute to children's learning, and these teacher interactional styles are sensitive to teachers' work-related and situational stress. Consequently, as situational stressors are difficult to control, emphasis should be placed on minimizing teachers' work-related stress.

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