

Providing Inclusive Primary School Education for Children with Special Educational Needs in Wartime Ukraine: Challenges and Current Solutions

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Abstract: Since 2011 primary school students with special educational needs (SEN) in Ukraine have been allowed to study alongside mainstream students in the inclusive education program established by the Ministry of Education and Science. The Russian invasion of Ukraine in February 2022 challenged the possibility of maintaining inclusive education for children with SEN, which required providers to find new solutions.

This paper focuses on the first response of inclusion providers in the Ukrainian primary school education system to the challenges of working in wartime from February to May 2022, using teachers in the city of Kryvyi Rih as a case study.

A quasi-experimental study (n=495) involved a group of inclusion providers (n=92) in comparison to mainstream primary school teachers (n=403). The research included: collecting data on the professional qualifications and experience of the teachers; questions on changes in the educational process and the number of students; the Psychological Stress Measure; Oldenburg Burnout Inventory; Brief Resilience Scale; and Miroshnyk Teacher's Roles Self-Assessment Scale (MiTeRoSA), designed as an online survey.

The inclusion providers faced numerous challenges due to the war, namely, (a) the enormous workload of preparing for classes ($\varphi^*=8.7$, $p<.01$), the extended non-educational work assignments ($\varphi^*=5.5$, $p<.01$), working with students ($\varphi^*=2.9$, $p<.01$) and their parents ($\varphi^*=3.5$, $p<.01$), (b) volunteering at school, and (c) the changed composition of student groups, i.e., students who left school and fled the area (in 64.1% of responses) and incoming students displaced from combat zones (27.2%). Struggling with stress and burnout (self-reported by 48.91% of inclusion providers), using psychological self-care skills and social resilience capacity through the support of the student's parents and colleagues, primary school teachers invented and implemented seven ways to maintain education for the students with SEN, the kind of which depended on the teacher's professional role structure and available social support.

Keywords: Inclusive education, inclusion providers, primary school students, primary school education, war in Ukraine, Russian invasion.

1. INTRODUCTION

After a period of less successful attempts to re-organize the special education system of Ukraine, hindered by post-Soviet resistance [1], in 2010, Ukrainian schools finally implemented 'The Introduction of Inclusive Education' designed by the Ministry of Education and Science. Based on this, in 2011, 2017, and 2021, the Cabinet of the Ministries of Ukraine revised and approved new 'Orders for the organization of inclusive education in schools', which regulated the rights, opportunities, and specific solutions for the implementation of inclusion in the school education system. During these past thirteen years, numerous studies have been carried out in Ukraine on various inclusion issues and their solutions. The early history of

this advance was described in detail by T. Bondar [2], and further years were outlined by M. Leshchenko and Y. Nosenko [3]. Among the most discussed topics were the general educational strategy for inclusion [4, 5], core concepts [6], specific steps and interfering factors of the inclusive education implementation [7-9], social consequences of inclusive education on the quality of life of people with disabilities [10], adjustment of inclusion to international norms and standards [11], and policy influences on the fate of inclusion in a specific country [12-14]. No less important were studies devoted to parents' experiences when their children were inclusive students [15, 16] and access to inclusion for children with special educational needs (SEN) from mother-only families [17]. An essential part of the research was devoted to the necessary changes in teacher training in inclusive education [18, 19], investigation of the teachers' understanding [20] and acceptance of inclusion [21, 22], including prejudices

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and reasonable concerns among primary school teachers [9]. International collaboration projects have also contributed to understanding the prospects for further inclusive education in Ukraine [23-25].

A new wave of studies devoted to inclusion in education appeared due to the COVID-19 pandemic and related lockdowns in the Ukrainian school system. For instance, Trofimov *et al.* [26] found psychological factors of teachers' adaptation to the provision of remote inclusive education, namely the teacher's level of tolerance for uncertainty and novelty, generosity, and orientation toward their achievements. The methods of aiding students and the children's breadth of learning difficulties were observed as non-psychological contributors to the success of digital education for students with disabilities. After the Russian invasion of Ukraine on the 24th of February, 2022, many primary school students fled, seeking education abroad [27]. At the same time, most students, whether they stayed in their hometowns in Ukraine or were evacuated to other regions, continued their education online with their initial primary school teacher and assistant. To date, several preliminary studies devoted to the issue of primary education [28], psychological support for primary school students [29], and working with children with SEN [30] in wartime have been published.

This paper focuses on the first response of inclusion providers in the Ukrainian primary school education system to the challenges of working in wartime from February to May 2022.

2. MATERIALS AND METHODS

2.1. Theoretical Framework

This study used a previously elaborated theoretical framework for primary school teachers working in wartime [28] with the additional research category of the 'Provision of inclusion'. It included investigating the general school settings due to the war, implemented changes in educational processes, and the psychological states of primary school teachers (Figure 1).

2.2. Survey Development

Upon the theoretical framework, we created a survey for primary school teachers using the model proposed for such type of research [31]. The survey included nine groups of questions (n=80) as follows:

- general data about the respondent (gender, years of professional experience);
- the composition of students (grade; changes in the number of students because of the war, outgoing and incoming evacuated students);
- questions about the changes in the educational process and the work setting as a whole due to the war (including satisfaction with the changes);
- questions 'Do you have students on an inclusive education program in your class group?' and 'How do you provide inclusion to the students with special educational needs during wartime?';

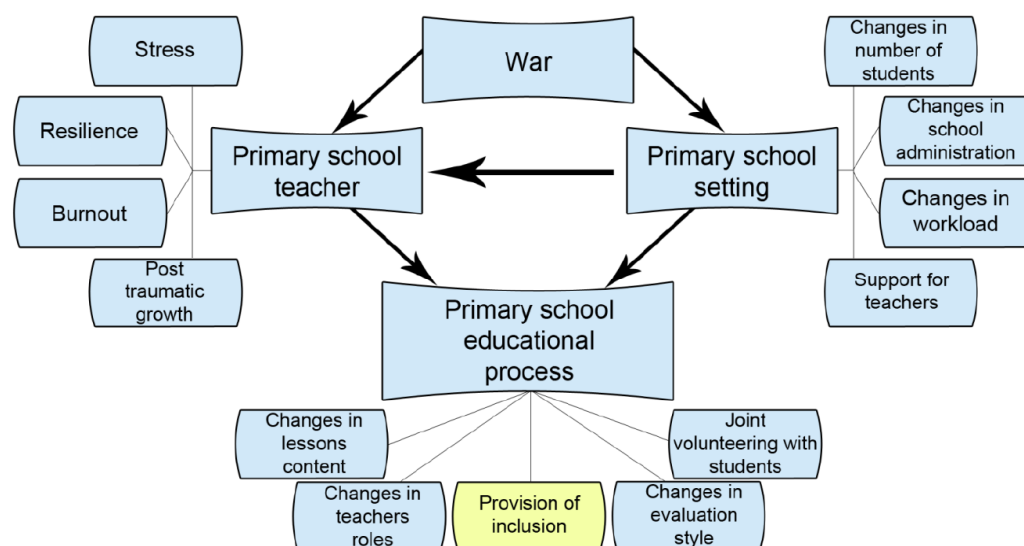


Figure 1: The theoretical framework of the study.

- Miroshnyk Teacher's Role Self-Assessment Scale, MiTeRoSA [32] (an English version see in Appendix A);
- Psychological Stress Measure, PSM-9 [33];
- Oldenburg Burnout Inventory, OLBI [34];
- Brief Resilience Scale, BRS [35];
- Post-Traumatic Growth Inventory, PTGI [36].

PSM-9, OLBI, BRS, and PTGI were adapted to the Ukrainian language through the double translation process involving professional interpreters. One interpreter was a native English speaker, and the second was a native Ukrainian speaker experienced in translations into English; after the translation process, the reliability of the scales was approved with Cronbach's alpha calculation presented in Table 5.

Ethical Approval

The ethical approval of the research project was provided by the Faculty of Psychology and Pedagogics Ethics Board, Kryvyi Rih State Pedagogical University.

2.3. Procedure

The researchers collaborated with the Kryvyi Rih Center of Innovations in Education to recruit the survey respondents. Kryvyi Rih is a large city in the central part of Ukraine, which was within 50 km of the territories temporarily occupied by Russian troops and attacked daily (but with no direct strikes due to the air defense) while we conducted our study. Invitations to participate were sent directly via email to all 145

schools in Kryvyi Rih city. Each invitation letter asked for anonymous and volunteer participation in the research aimed at studying war-related changes in providing inclusion in the educational process at primary school. We gathered written consent for research participation and the survey responses via Google Forms from the 16th to the 20th of May 2022, almost three months after the Russian invasion. During the research period, all schools have been working remotely (online).

2.4. Participants

We gathered responses from 495 primary school teachers (493 female and four male) from Kryvyi Rih. The sample size was satisfactory because, following the rule of thumb, the minimum number of participants for a survey with 80 questions is 400. Moreover, reaching the confidence level of 99% with a margin of error of 5% required a minimum of 415 primary school teachers from the total number of about 1100 employed in Kryvyi Rih.

From the total sample, only 92 respondents confirmed that they had students with SEN in an inclusive education program in their groups. Thus, we divided the initial sample into experimental (n=92) and control (n=403) groups (see Table 1). It allowed the data to be studied from inclusion providers separately in comparison to other primary school teachers.

Data analysis of the two group samples confirmed their general similarity. However, compared to the control group, the group of primary school teachers who were inclusion providers had fewer years of

Table 1: Experimental and Control Groups Composition

Variable		Experimental group (Inclusion providers)		Control group (Not inclusion providers)	
		Number (n)	Number (%)	Number (n)	Number (%)
Gender	Female	92	100	399	99.01
	Male	0	0	4	0.99
Students' grade	First	26	28.26	102	25.31
	Second	22	23.91	96	23.82
	Third	20	21.74	104	25.81
	Fourth	24	26.09	101	25.06
Teacher's work experience (years)	Maximum	47		56	
	Minimum	1		1	
	Average	17.39		21.18	
	Standard deviation	13.14		12.85	

professional experience ($U=15350$, $p<.01$) and did not include any male teachers. Nevertheless, in the study results, nothing correlated with gender and the two variables related to professional experience.

2.5. Data Analysis

Data analysis of this study included descriptive statistics, content analysis of short narrative responses, rank correlations, percentiles, sign tests, and comparison of ordinal data and frequencies by non-parametric criteria using IBM SPSS Statistics 23 software. For every closed question with the responses 'yes' or 'no', the total sample was divided into two groups (group 'yes' and group 'no') and compared by the Mann-Whitney U-test in ordinal data or the Pearson

Chi-square χ^2 -test in the case of frequencies. Similarly, the total sample was divided into relevant groups by three or four response options in other closed questions and compared by the Kruskal-Wallis H-test or the Pearson Chi-square χ^2 -test. The comparison of percentages was counted with Fisher's angular transformation ϕ -criterion.

3. RESULTS

3.1. Changes in the Work Setting

Questions regarding changes in the work setting were devoted to changes in the composition of students, changes in workload, being involved in volunteering, satisfaction with how school

Table 2: Groups Comparison by the Changes in the Work Setting Due to the Russian Invasion

Item	Experimental group	Control group	Comparison (ϕ^*)	
	Percentage (%)	Percentage (%)		
Number of students	Did not change	35.9	38.2	0.415
	There are new (evacuated) students	27.2	28.5	0.251
	There are students who have fled	64.1	61.8	0.415
Workload	Work with students	-27.2	-21.6	1.125
		26.1	26.8	0.138
		46.7	51.6	0.848
	Work with students' parents	-22.8	-23.1	0.061
		26.1	27	0.182
		51.1	49.9	0.208
	Preparing for lessons	-15.2	-10.7	1.168
		13	13.6	0.147
		71.7	75.7	0.788
	Professional contacts with colleagues (meetings, councils, supervision, etc.)	-33.7	-37.5	0.684
		34.8	37.5	0.485
		31.5	25.1	1.229
Other non-educational work assignments		-22.8	-16.6	1.359
		19.6	29.8	2.06*
		57.6	53.6	0.692
	Organized by the school	37	31	1.099
	On their own initiative	15.2	9.4	1.541
	Both types	39.1	54.3	2.648**
Volunteering	None	8.7	5.3	1.195
	Satisfaction with how school administrators set the work in wartime	67.4	72	0.865
	Satisfaction with teacher's solutions to re-organize their work in wartime	93.5	94.3	0.286

Notes. In rows on 'Workload' «-» means «workload decreased», «=» - «workload did not change», «+» - «workload increased»; * Significance $p<.05$; ** Significance $p<.01$

administrators set the work in wartime, and satisfaction with teachers' solutions to re-organize their work in wartime. The summary of the data from the experimental and control groups is presented in Table 2.

Table 2 shows that the main differences in the work setting between inclusion providers and other primary school teachers in wartime were changes in workload with non-educational work assignments and volunteering. The respondents from the experimental group reported they could not combine volunteering organized by their schools with volunteering based on their own initiative as often as their colleagues from the control group. Simultaneously, it was less common for inclusion providers to maintain their previous amount of work with non-educational activities compared to other respondents, i.e., they reported more frequently that their workload with this category had changed (either increasing or decreasing).

The teachers evaluated changes in their workload according to five categories, with each category having five choices: 'much fewer', 'fewer', 'no changes', 'more', and 'much more' (see Table 3).

Table 3 shows that four of the five evaluated categories of inclusion providers' workloads increased significantly due to the Russian invasion. Most respondents (i.e., more than 50%) indicated excessive preparation for lessons, non-educational work assignments, and work with students' parents as the main changes in their workload caused by wartime.

The respondents from the group of inclusion providers who claimed that they were satisfied with how they had managed their work in wartime were also more satisfied with how the school administrators had set the school work in general (U=113.5, p<0.05).

Dissatisfaction by these teachers with their own efforts to re-organize education after the Russian invasion corresponded to an increase in workload with non-educational work assignments (U=113.5, p<0.05). Primary school teachers from the experimental group who thought they got enough support from their colleagues and administrators spent more time preparing for lessons (U=323.5, p<0.05) and with non-educational work assignments (U=146, p<0.05).

3.2. Changes in the Educational Process

To evaluate changes in the educational process, we analyzed changes in the teacher's role utilization, vocabulary (i.e., the militarization of teaching material), joint volunteering with students, and specifics of evaluating students' academic performance. For teachers' roles, we asked the respondents to evaluate themselves twice on a scale of 1 to 5 utilizing the MiTeRoSA (Appendix A), identifying the roles used before and after the Russian invasion. Data comparison showed no significant differences in changes in the teacher's role utilization between the experimental and control groups (see Table 4).

Within an experimental group, the tendency to use the teacher's role of 'Facilitator' (r=0.37, p<0.001) and 'Partner' (r=0.386, p<0.001) before the invasion moderately correlated with a larger workload with students in wartime (Appendix B, Table B.1). Those who used to be 'Partners' in the pre-war period also tended to spend more hours preparing for lessons after the invasion (r=0.386, p<0.001). Utilization of the role of 'Nanny' before the Russian invasion corresponded to an increasing workload with professional contacts (r=0.365, p<.001).

Regarding teachers' roles in wartime, the role of 'Proficient in child psychology' (r=0.311, p<0.01)

Table 3: Changes in Inclusion Providers' Workload Due to the Russian Invasion (by Categories)

Category of workload	No changes, %	Fewer hours		More hours		Average mean, M***
		%	φ*	%	φ*	
<i>Work with students</i>	26.09	27.17	0.17	46.74	2.937**	0.446
<i>Work with students' parents</i>	26.09	22.83	0.515	51.09	3.534**	0.533
<i>Preparing for the lessons</i>	13.04	15.22	0.427	71.74	8.695**	0.978
<i>Professional contacts with colleagues (meetings, councils, supervision, etc.)</i>	34.78	33.7	0.156	31.52	0.475	0.185
<i>Other non-educational work assignments</i>	19.57	22.83	0.536	57.61	5.467**	0.728

Notes. % were counted as n of specific respondents from the total number (n=92); *φ was counted as a difference compared to 'no changes'; ** Significance p < .01; *** Response 'fewer' was counted as -1 and 'much fewer' as -2. Response 'more' was counted as +1 and 'much more' as +2. No changes were counted as 0.

Table 4: Groups Comparison by the Changes in the Teacher's Roles Usage Due to the Russian Invasion

Teacher's role	Experimental group			Control group			Chi-square
	negative changes, n	no changes, n	positive changes, n	negative changes, n	no changes, n	positive changes, n	
Didact	26	55	11	82	271	50	2.84
Nanny	40	43	9	162	178	63	2.07
Proficient in child psychology	20	55	17	99	240	64	0.41
Facilitator	31	47	14	137	216	50	0.55
Mentor	28	47	17	108	235	60	1.67
Partner	34	51	7	128	241	34	0.92

Note. 'Negative change' means that the role use was less pronounced in wartime than in the pre-war period. 'Positive change' means that the role use was more pronounced in wartime than in the pre-war period.

corresponded to a more significant load of inclusion providers' work with students. The tendency to use the teacher's roles of 'Mentor' and 'Partner' in wartime also correlated with a more significant workload of working with students ($r=0.308$, $r=0.352$, $p<0.01$) and also with students' parents ($r=0.331$, $r=0.276$, $p<0.01$) and with preparing for lessons ($r=0.265$, $p<0.05$; $r=0.336$, $p<0.01$).

32.61% of inclusion providers and 23.82% of other primary school teachers reported they began to use military terms in their lessons, e.g., as metaphors to explain something or as examples for actions in mathematics, for which there was no significant difference between groups ($\chi^2=3.05$, $p>0.08$). Among the teachers who worked with students with SEN, the use of military metaphors tended to be more common amongst more seasoned professionals ($U=668.5$, $p<0.05$) as well as for those who reported more frequent use of the teacher's role 'Proficient in child psychology' after the invasion ($U=597.5$, $p<0.01$).

34.37% of inclusion providers and 39% of other primary school teachers involved children in joint volunteering. Those respondents from the experimental group who engaged in joint volunteer activities with their students reported an increased workload with professional contacts ($U=727$, $p<0.05$).

3.3. Psychological Effects of the War

The summary and comparison of the psychological conditions of the surveyed primary school teachers of both groups, as measured in a range of inventories, are presented in Table 5. According to the data, the group of inclusion providers did not differ significantly from the control group in the inventories. However, 48.91% of the respondents from the experimental group were aware that they felt burnout, while it was reported by

only 33.25% of teachers from the control group ($\chi^2=7.96$, $p<0.01$). Inclusion providers who said that they felt burnout did indeed have higher scores of burnout measured by OLBI ($U=712.5$, $p<0.01$) as well as higher levels of stress ($U=688$, $p<0.01$).

Similar to the control group, the group of inclusion providers' use of all the teachers' roles negatively correlated to disengagement, exhaustion, and general burnout (see Appendix B, Table B.2). It was especially significant in the case of the roles of 'Proficient in child psychology', 'Facilitator', 'Mentor' and 'Partner'. In the experimental group, the higher levels of resilience corresponded to lower levels of stress ($r=-0.434$, $p<0.001$), while stress levels correlated to exhaustion ($r=0.322$, $p<0.01$).

All PTGI scale scores of inclusion providers correlated with the expression of the roles of 'Facilitator', 'Mentor', and 'Partner' in wartime (see Appendix B, Table B.2). Furthermore, those who began to work more with students tended to have higher levels on the PTGI scales 'Relating to others' ($r=0.309$, $p<0.01$) and 'New possibilities' ($r=0.314$, $p<0.01$).

Turning to the question of sources of psychological support that helped primary school teachers maintain their work, inclusion providers most often indicated their belief in Ukraine's victory, support of loved ones, successful cooperation with students' parents, work experience, skills in psychological self-care and self-support, patriotism, and support from colleagues (see Figure 2). However, compared to a control group (see Appendix C), inclusion providers felt less supported by the instructions on working in wartime sent by the Ministry of Education and Science of Ukraine ($\phi^*=2.53$, $p<0.01$), their colleagues ($\phi^*=2.09$, $p<0.05$) and students' parents ($\phi^*=1.8$, $p<0.05$). At the same time,

Table 5: Average Means of PSM-9, OLBI, BSR, and PTGI of the Primary School Teachers

Inventory Scale	Experimental group		Control group		Reliability	
	Average (M)	Standard deviation (SD)	Average (M)	Standard deviation (SD)	Chronbach's alpha	
Psychological Stress Measure-9 (PSM-9)	32.57	11.02	31.95	11.25	0.742	
Oldenburg Burnout Inventory (OLBI)	Disengagement Scale	16.3	3.2	15.73	3.3	0.679
	Exhaustion Scale	18.92	3.08	18.33	3.55	0.705
	Full burnout level	35.22	5.63	34.06	6.12	0.803
Brief Resilience Scale (BRS)	3.02	0.53	3.08	0.53	0.627	
Post-Traumatic Growth Inventory (PTGI)	Scale 'Relating to other'	23.37	9.19	24.28	7.95	0.912
	Scale 'New possibilities'	15.6	7.22	16.17	5.96	0.886
	Scale 'Personal strength'	13.97	5.49	14.4	4.66	0.867
	Scale 'Spiritual enhancement'	6.77	2.96	7.1	2.59	0.65
	Scale 'Appreciation'	12.07	3.93	12.76	3.2	0.849

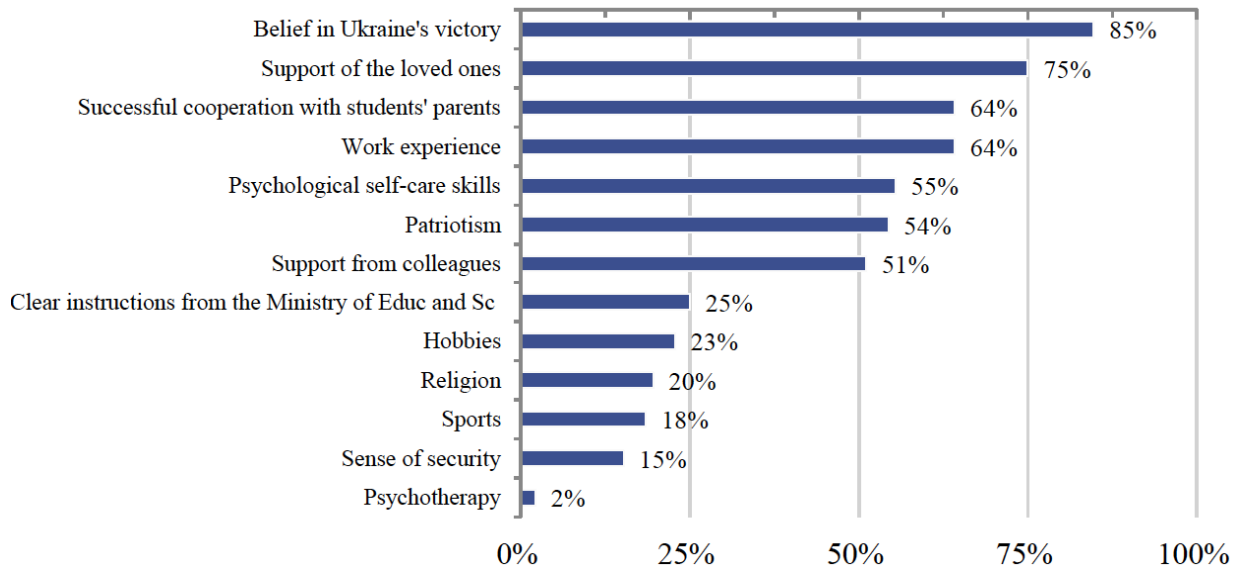


Figure 2: Distribution of inclusion providers' responses to the question, 'What supports you psychologically in your work as a primary school teacher in wartime?'

Note. This question allowed respondents to make multiple unranked responses indicating items if they thought they supported them.

they indicated their work experience as a source of support significantly more often ($\phi^*=2.93$, $p<0.01$), which was also more marked in more seasoned respondents ($U=90.5$, $p<0.01$). Interestingly, those who reported an increased engagement with professional colleagues through meetings, councils, consultations, and supervision ($U=801$, $p<0.05$) and used the roles 'Didact' ($U=614$, $p<0.01$; $U=565.5$, $p<0.01$) and 'Mentor' ($U=625.5$, $p<0.01$; $U=713$, $p<0.01$) less in pre-war and war circumstances, were more likely to indicate that they felt support from colleagues.

The respondents from the experimental group, who reported that their psychological self-care skills supported them, had higher scores of resilience measured on BRS ($U=701.5$, $p<0.01$) and were more satisfied with their school administrators ($U=755.5$, $p<0.01$). Those who thought they were supported by efficient cooperation with students' parents also had higher scores of resilience ($U=635.5$, $p<0.01$) and, additionally, lower scores on the OLBI scale 'exhaustion' ($U=657$, $p<0.01$). Interestingly, those who mentioned hobbies as a supportive source had lower

levels of utilization of the teacher's role 'Didact' in the pre-war period ($U=485.5$, $p<0.01$). Inclusion providers who indicated their belief in Ukraine's victory were more satisfied with school administrators ($U=324$, $p<0.01$) and showed a decrease in contact with students' parents ($U=274.5$, $p<0.01$). A sense of security as a supportive source corresponded to lower scores on the OLBI scale 'exhaustion' ($U=310$, $p=0.01$).

3.4. Provision of Inclusion

Eighty-five survey respondents from the experimental group provided narrative responses about the specifics of providing inclusion in wartime. Content analysis of these responses allowed us to distinguish seven core topics (see Figure 3) as main content categories.

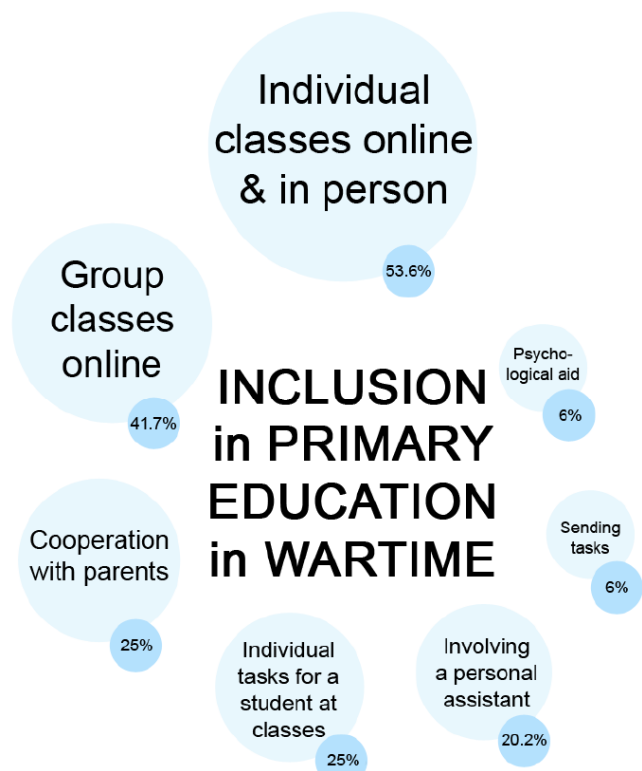


Figure 3: The specifics of providing inclusion in primary education in wartime Ukraine are mentioned in narrative responses.

Note. 100% is $n=85$ narrative responses.

As we see from Figure 3, the most common way to work with students with SEN in wartime was to organize individual classes for them (53.6% of responses). Teachers reported that they met students with SEN individually online via Zoom and Viber, at school, and even in students' homes. Interestingly, this was more commonplace in those who used the

teachers' role of 'Partner' more significantly before ($U=699.5$, $p<0.01$) and after ($U=730.5$, $p<0.01$) the invasion. This tendency was also observed among those who used the teacher's role of 'Proficient in child psychology' before ($U=801.5$, $p<0.05$) and after ($U=762$, $p<0.05$) the Russian invasion.

41.7% of respondents reported that the students with SEN joined their regular group classes online, which was more typical when no new students were displaced from other regions ($\chi^2=4.24$, $p<0.05$). Teachers who mentioned this category more often confirmed that they perceived support from their colleagues ($\chi^2=8.21$, $p<0.01$).

Primary school teachers who wrote that they cooperated with students' parents (25%) to set educational processes (including, for example, launching online meetings, delegating educational functions, and providing supervision to the parents to undertake some classes) indicated a larger workload for preparing for lessons ($U=431$, $p<0.01$) and for working with students' parents ($U=501.5$, $p<0.05$). In contrast, they worked with students less ($U=461.5$, $p<0.05$). At the same time, these respondents reported that cooperation with students' parents supported their work more often ($\chi^2=7.43$, $p<0.01$). The decision to cooperate with parents and even to delegate to them the teacher's function (to conduct individual classes for a student with SEN) was more inherent to those who used the teacher's role of 'Facilitator' in wartime more ($U=106$, $p<0.05$) and of 'Mentor' less ($U=468$, $p<0.05$).

The teachers' practice of preparing individual tasks for a child with SEN with that of educating them in group classes (25%) or setting homework (6%), as well as the teacher's efforts to provide students with psychological assistance (6%), did not correlate to any other studied variables. The survey participants who responded that they mainly involved a personal assistant for a child with SEN in wartime (20.2%) tended to mention the perceived support from colleagues more often ($\chi^2=6.38$, $p<0.05$).

In contrast with the data on teachers' roles and supporting tools, the implemented solutions for working with students with SEN did not correlate with the respondents' psychological state caused by the war. Of equal importance was that there was no significant difference in any measured variables between those who mentioned only one way or several ways of providing inclusion in wartime.

4. DISCUSSION

Up to two-thirds of the surveyed inclusion providers faced various challenges in their work setting in response to the Russian invasion of Ukraine, similar to other respondents among primary school teachers. The abrupt increase in workload, the extended work assignments, and the changed composition of students' groups, along with their personal psychological response to the war, contributed to the situation of uncertainty and the upheaval in the usual course of life, requiring urgent searches for new forms of activity, sense, values, social interactions [37] and ways to cope, including regaining the ability to plan [38]. Compared to the control group, fewer inclusion providers succeeded in maintaining their usual pre-war workload of non-educational assignments or managed to combine volunteering organized by their schools with personally initiated volunteering. Although the largest increase in workload in wartime was associated with preparing for lessons, the increased time spent on non-educational work assignments was correlated with dissatisfaction with teachers' own efforts to re-organize the educational process after the 24th of February 2022. Nevertheless, the majority of the surveyed inclusion providers evaluated their attempts to teach and school administrators' efforts to re-organize the work setting in wartime as satisfactory.

Though the psychological state of inclusion providers was consistent with other surveyed primary school teachers who faced the war, it was notable that they admitted burnout significantly more often (indicated by almost half of the respondents). The self-reported feeling of burnout was associated with higher scores of measured burnout and stress, which, in their turn, negatively affected the utilization of all the usual teachers' roles, especially the roles of 'Proficient in child psychology', 'Facilitator', 'Mentor' and 'Partner'. The presented data on the numerous changes in the work setting, including volunteering and burnout, corresponded to the first observations of V. Vus and I. Esterlis, published in May 2022, who indicated (1) acute reactions, rapid changes, active collaboration and community cooperation, as well as (2) subsequent burnout as the second and the third stages of the mental health crisis in the general population of wartime Ukraine [37]. However, the finding that inclusion providers with higher levels of burnout used the roles of 'Proficient in child psychology', 'Facilitator', 'Mentor', and 'Partner' in less pronounced ways might also be interpreted as a sign of compassion fatigue previously forecasted by A. Jawaid, M. Gomolka and A.

Timmer [39], because the fulfillment of the listed roles implies emotional involvement.

Taking into account the data obtained from this study and the recently published evidence on the prevalence of psychological distress, anxiety, and depression among Ukrainian adults soon after the Russian invasion [38], mental health professionals reasonably insisted that it was crucial to provide war-exposed people with relevant rapid and easily accessible crisis interventions [40-42] and psychological first-aid self-care courses [39] in early months of the war. In our research, more than half of inclusion providers reported that they already supported themselves using psychological self-care skills, which was positively associated with higher resilience and satisfaction with school administrators. Similarly, higher scores of resilience and lower scores on the 'exhaustion' OLBI scale were inherent to those who experienced cooperation with students' parents as a source of support. This point is especially significant due to our finding that inclusion providers stated that they perceived support from students' parents often (64.13% of responses) but less often when compared to the control group.

The study results on the unanimously indicated sources of support (i.e., belief in Ukraine's victory, support of beloved ones, and cooperation with students' parents, in contrast to less common sources such as clear instructions, hobbies, sports, sense of security and psychotherapy) corresponded to the data of the survey conducted at the beginning of May by M. Melnyk and A. Malynoshevska [40]. The authors surveyed more than 4000 teachers throughout Ukraine and reported that the most often mentioned sources of support were their loved ones (36.47%), belief in Ukraine (31.42%), and family (17.16%) while indicating that support via friends, hobbies, and education was not widespread. Therefore, we hypothesize that in the situation of severe collective trauma, the surveyed teachers might experience an increased need to perceive themselves as a part of a group - a family, the local community, or the community of their city, country, and nation. Such emphasis on group identity, or even on a range of group identities, may allow them to access the capacity for social resilience with feelings of strengthened social cohesion, mutual solidarity, and a sense of collective efficacy [44]. Interestingly, in our research, this pronounced value of group identities did not relate to the coping opportunities afforded by religion [45], which was mentioned as supportive by less than one-fifth of the inclusion providers. However,

the patriotism mentioned by 54% of the respondents as a source of support should also be discussed in its possible association with an elevated risk for PTSD symptoms development [46].

Preferences of teachers' roles usage appeared to be related to how the workload and the educational process had changed due to the Russian invasion, together with any post-traumatic growth the inclusion providers had experienced. These findings may contribute to the evidence of the role structure theories [47-49], highlighting the particularities of professional roles as relatively sustainable formations which affect or even predict the teachers' decisions even in times of crisis. However, as the proposed research design did not allow testing of the hypothesis about predictors of teachers' decisions, it should be considered a research idea for further investigation.

Regarding the ways of providing inclusion in wartime, contrary to our expectations, it was teachers' roles and sources of support rather than the psychological state of the individual teacher that turned out to influence the choice of how to provide inclusive education to students with SEN. For instance, those teachers who used the roles of 'Partner' and 'Proficient in child psychology' in more pronounced ways both before and after the Russian invasion were more likely to launch individual classes during the war period. It is an important finding because conducting individual classes was the most common way of educating students with SEN in wartime, as reported by more than half of the respondents. This result itself might raise concerns that, due to the war, inclusive education was effectively abandoned and replaced by an individual form of education, the most severe option for special education needs. However, in light of teachers' specific roles utilization and their readiness to meet students online, at school, and even at the student's home, combining individual work with other options, if available, we would suggest that in at least part this is a sign of teachers' flexibility in efforts to maintain inclusive education for certain students, which we associate with their professional role identity [50].

At the same time, inclusion providers who perceived support from their colleagues were more likely to meet the students with SEN in their regular group classes (i.e., to provide 'true inclusion', which is needed for social-emotional development [51]). Interestingly, an interfering factor in using this option was the appearance of new students in the group, displaced from other regions of Ukraine, including territories

temporarily occupied by Russian troops. We suppose that in the case of newly incoming students, especially those with psychological trauma, a teacher faced additional challenges in maintaining the educational process, namely support of new students' adjustment, building contact with them and their parents, and facilitating the group process of accepting them. Therefore, new challenges required a revision of the ordinary work format, which also affected working with students with SEN.

The surveyed teachers who reported that cooperation with students' parents supported their work stated more often that they involved students' parents in their child's educational process, including delegating to the parents some teachers' functions, e.g., launching classes for that particular student. Similarly, those who responded that they mainly involved a personal assistant for a child with SEN in wartime tended to mention the perceived support from colleagues more often. Therefore, these findings might be analyzed in at least two ways. The first concerns the teachers' involvement of parents and school staff as a sign of previously effective team building for better inclusive education of students with SEN. For the Ukrainian model of inclusive education, a teacher is expected to establish a working team for the successful inclusion of a child, involving general school staff (e.g., school psychologist, speech therapist if available), a personal educational assistant when needed, and the student's parents [7]. In wartime, this well-organized working team could help maintain education and somehow balance the teachers' workload during a difficult period by distributing duties among other team members. Second, in addition to the shift to individual classes, it may highlight the risk of general rollback from inclusive education to segregated and individual schooling caused by the war, a move that should be continually monitored.

5. LIMITATIONS

This study has several limitations. First, in the research design, the authors used the model of a quasi-experimental study involving a control group of primary school teachers working in wartime who were not inclusion providers. The study comparing inclusion providers from wartime Ukraine with another group of inclusion providers from a peaceful country would result in more precise and objective features of the war-related shifts in inclusive education. Additionally, the data on the professional experience of teachers in the control group of any work with children with SEN

was not collected. Therefore, the results do not consider in detail the influence of prior experience in the field of inclusion. Second, the research design did not include an assessment of the effectiveness of inclusive education in wartime, which is regarded as necessary in this type of study [52]. Third, the presented results from a specific sample from one city describe challenges and current solutions for providing inclusion in primary education in local circumstances. As for the total sample of Ukrainian primary school educators, this study might be used only as preliminary research, i.e., a pilot study. The principal value of the proposed results is a description of the first attempts and challenges in providing inclusion by primary school teachers in wartime.

6. CONCLUSIONS

Like other primary school teachers, the inclusion providers surveyed faced numerous challenges due to the Russian invasion of Ukraine, which required urgent work changes literally 'under fire'. Namely, the challenges were the enormous workload in preparing and conducting classes online and the extended work assignments offline at schools, including volunteering, and the changed composition of student groups, i.e., students who left the school and fled to other areas and newly coming students displaced from combat zones. Our study shows that in these terrifying circumstances, the teachers attempted to invent different ways to maintain education for their students with SEN - from individual classes to involving assistants and students' parents or just sending tasks for homework - depending on the teacher's professional role structure and social support. We suggest there may be a risk of general rollback from inclusive education to segregated and individual schooling, which should be monitored later during the war and post-war periods.

The survey demonstrated that almost half of the inclusion providers felt burnout and were highly

APPENDIXES

Appendix A

Miroshnyk Teacher's Role Self-Assessment Scale (MiTeRoSA)

Instruction: Look at the list of school teachers' professional roles below. Please rate them on a scale from 1 to 5 (1 is the lowest use, and 5 is the highest) by the level you use each in your typical educational activity.

Teacher's role	1	2	3	4	5
<i>Didact</i> , i.e. someone who explains and teaches.					
<i>Nanny</i> , i.e., someone who cares for.					

stressed, which negatively affected the teachers' engagement with their work and manifested in teachers' role utilization. The results of this study also highlight the crucial role of social resilience in wartime. We found that both psychological self-care skills and the feeling of community support contributed to the resilience of inclusion providers.

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ETHICAL APPROVAL

The ethical approval of the research project was provided by the Faculty of Psychology and Pedagogics Ethics Board, Kryvyi Rih State Pedagogical University.

CONSENT

The written consent for research participation was gathered online along with the survey responses.

RESEARCH ETHICS AND POLICIES

The presented study was developed and conducted per Ukrainian law and international requirements for studies involving people.

CONFLICT OF INTEREST

We have no conflicts of interest to disclose.

Proficient in child psychology, i.e., an acute observer of the child’s behavior and personality traits.					
Facilitator, i.e., someone who supports and facilitates practical activities of each student and a whole group.					
Mentor, i.e., someone who gives pieces of advice and provides patronage.					
Partner, i.e., someone who organizes and maintains joint activities with their students.					

Note. MiTeRoSA has a Ukrainian (Miroshnyk, 2013) and an English version (Velykodna, et al., 2023).

Appendix B

Table B.1: The matrix of intercorrelations between teachers’ roles typical for the pre-war period and OLBI, BRS, and PSM-9 scales (among inclusion providers)

scale	MiTeRoSA						OLBI			PSM-9	BRS
	Didact	Nanny	Proficient in child psychology	Facilitator	Mentor	Partner	Disengagement	Exhaustion	Full scale		
	1	2	3	4	5	6	7	8	9	10	11
1	-	0.592**	0.492**	0.524**	0.654**	0.524**	-0.107	-0.044	-0.095	0.121	0.045
2	0.592**	-	0.485**	0.304**	0.392**	0.282**	-0.002	-0.018	0.022	0.071	0.05
3	0.492**	0.485**	-	0.707**	0.580**	0.617**	-0.201	-0.125	-0.169	0.188	0.001
4	0.524**	0.304**	0.707**	-	0.677**	0.723**	-0.245*	-0.108	-0.206*	0.065	0.082
5	0.654**	0.392**	0.580**	0.677**	-	0.556**	-0.209*	-0.165	-0.214*	0.092	0.151
6	0.524**	0.282**	0.617**	0.723**	0.556**	-	-0.293**	-0.036	-0.199	0.093	0.068
7	-0.107	-0.002	-0.201	-0.245*	-0.209*	-0.293**	-	0.585**	0.899**	0.094	-0.199
8	-0.044	-0.018	-0.125	-0.108	-0.165	-0.036	0.585**	-	0.863**	0.322**	-0.321**
9	-0.095	0.022	-0.169	-0.206*	-0.214*	-0.199	0.899**	0.863**	-	0.223*	-0.298**
10	0.121	0.071	0.188	0.065	0.092	0.093	0.094	0.322**	0.223*	-	-0.434**
11	0.045	0.05	0.001	0.082	0.151	0.068	-0.199	-0.321**	-0.298**	-0.434**	-

Notes: * - p<0.05; ** - p<0.01.

Table B.2: The matrix of intercorrelations between the use of teachers’ roles in wartime and OLBI, BRS, and PSM-9 scales (among inclusion providers)

scale	MiTeRoSA						OLBI			PSM-9	BRS
	Didact	Nanny	Proficient in child psychology	Facilitator	Mentor	Partner	Disengagement	Exhaustion	Full scale		
	1	2	3	4	5	6	7	8	9	10	11
1	-	0.503**	0.528**	0.504**	0.566**	0.528**	-0.226*	-0.042	-0.163	0.025	0.153
2	0.503**	-	0.563**	0.641**	0.598**	0.602**	-0.293**	-0.238*	-0.305**	-0.073	0.135
3	0.528**	0.563**	-	0.811**	0.783**	0.787**	-0.430**	-0.252*	-0.397**	0.001	0.122
4	0.504**	0.641**	0.811**	-	0.815**	0.788**	-0.408**	-0.310**	-0.426**	-0.141	0.119
5	0.566**	0.598**	0.783**	0.815**	-	0.806**	-0.342**	-0.208*	-0.318**	-0.041	0.099
6	0.528**	0.602**	0.787**	0.788**	0.806**	-	-0.390**	-0.218*	-0.348**	-0.047	0.088
7	-0.226*	-0.293**	-0.430**	-0.408**	-0.342**	-0.390**	-	0.585**	0.899**	0.094	-0.199
8	-0.042	-0.238*	-0.252*	-0.310**	-0.208*	-0.218*	0.585**	-	0.863**	0.322**	-0.321**
9	-0.163	-0.305**	-0.397**	-0.426**	-0.318**	-0.348**	0.899**	0.863**	-	0.223*	-0.298**
10	0.025	-0.073	0.001	-0.141	-0.041	-0.047	0.094	0.322**	0.223*	-	-0.434**
11	0.153	0.135	0.122	0.119	0.099	0.088	-0.199	-0.321**	-0.298**	-0.434**	-

Notes: * - p<0.05; ** - p<0.01.

Appendix C

Group Comparison by the Indicated Sources of Support that Helped Maintain Working in Wartime

Item	Experimental group	Control group	Comparison (φ^*)
	Percentage (%)	Percentage (%)	
Support of colleagues	51.09	63.03	2.086*
Clear instructions from the Ministry of Education and Science	25	38.46	2.527**
Work experience	64.13	47.39	2.925**
Psychological self-care skills	55.43	57.32	0.329
Support of the loved ones	75	80.65	1.168
Successful cooperation with students' parents	64.13	73.7	1.8*
Psychotherapy	2.17	3.47	0.675
Hobbies	22.83	25.31	0.502
Patriotism	54.35	61.54	1.264
Belief in Ukraine's victory	84.78	90.32	1.445
Religion	19.57	24.31	0.987
Sense of Security	15.22	21.34	1.367
Sports	18.48	14.64	0.909

Notes: * - $p < 0.05$; ** - $p < 0.01$. This question allowed respondents to make multiple unranked responses indicating items they experienced as being supportive.

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