UNITY

(Ukraine National Identity Through Youth)

Youth-Led Secondary Education Needs Assessment Report

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Visit UNITY landing page - https://mriemotadiemorazom.org/

UNITY program overview - https://www.irex.org/project/ukraine-national-identity-through-youth-unity

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INTRODUCTION

Background on status of secondary education[1] system

Since the full-scale Russian invasion of Ukraine on February 24, 2022, there have been widespread negative effects on education delivery and learning outcomes among Ukrainian youth and teachers, with an estimated 5 million children experiencing education disruptions.[2] For 2 full weeks after the onset of the invasion, all schools in Ukraine suspended education activities.[3] In the summer of 2022, 131 schools operated in-person, 12,224 schools—attended by 75 percent of students in Ukraine—operated exclusively online, and 111 schools delivered hybrid education.[4] Teachers and students alike were displaced. More than 665,000 students and 25,000 teachers moved abroad and 8 million moved elsewhere in Ukraine.[5] By August 2022, an estimated 30 percent[6] of schools met requirements to provide in-person education in the fall, including access to a bomb shelter. In October 2022, it was estimated that 1,300 schools in Ukraine were located in Ukrainian territories occupied by Russian forces.[7]

Shifting forward, 6 months from the summer months into late 2022 and early 2023, challenges with consistent access to quality education persisted. Approximately 2 million students attended school exclusively online and 1.3 million learned in a hybrid setting. Ability to meaningfully engage in education activities in schools was exacerbated by regular air raids (68%) and blackouts (60%) and critical infrastructural gaps, including no internet access (57%), lack of heating (17%), and available teachers (8%).[8] Other physical infrastructure damages have affected the ability of schools and teachers to establish safe spaces for students with resources needed to support learning, including destruction of roofs, floors, walls, sewage, heating, water, and electricity systems, and meeting rooms.[9] Ukrainian youth living with disabilities and their families felt these issues particularly deeply, including 30,000 students with disabilities[10] residing in facilities destroyed by the war.[11] As of February 2023, 2,730 educational institutions experienced physical infrastructural damage, 415 were destroyed, and 3,145 were exposed to bombing and shelling.[12] Currently, 13,000 schools in Ukraine are considered operational,[13] 1.1 million students attend classes in-person, 1.6 million attend classes exclusively online, and 1.2 million participate in hybrid classes.[14]

While schools have gained experience providing education remotely during the COVID-19 pandemic and can apply what they have learned about the necessary adaptations during this prior crisis, access to technological devices, electricity, and internet connectivity continue to create barriers to teachers' and students' meaningful engagement in online education.[15]

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[1] Secondary education is defined as grades 5–11 in Ukraine.
[2] Ukraine tries "creative solutions" for school during war (Axios, February 2023).
[3] Ukraine Impact of Conflict on Education (Acaps, August 2022).
[4] Hybrid classes refer to schools that offer "mixed" mode courses, which are a combination of in-person and online activities.
[5] Education: Impact of the War in Ukraine (Reliefweb, May 2022).
[6] Ukraine Impact of Conflict on Education (Acaps, August 2022).
[7] War in Ukraine has another front line: The classroom (Politico, January 2023).
[8] Percentages represent the proportion for schools in Ukraine as reported by Ukrainian mothers of students who participated in survey conducted by Ukraine Children's Action Project and experienced noted access issues.
[9] War & Education. How a year of the full-scale invasion affected Ukrainian schools (savED, 2023)
[10] Over 45,000 Ukrainian students living with disabilities were estimated to be engaged in specialized schools as of February 2022 (Ukraine Impact of Conflict on Education [Acaps, August 2022]).
[11] Ukraine Impact of Conflict on Education (Acaps, August 2022).
[12] Ministry of Education and Sciences of Ukraine (MOES, March 2023).
[13] As of September 2021, 13,991 schools were considered operational in Ukraine (New Ukrainian School, 2021).
[14] Ukraine tries "creative solutions" for school during war (Axios, February 2023).
[15] War & Education. How a year of the full-scale invasion affected Ukrainian schools (savED, 2023).

Smartphones are the most commonly used electronic device to support students' learning, followed by laptops. Members of the same household often share these devices.[16] Among a sample of mothers of students whose children use smartphones for schooling activities, 40 percent that noted smartphone access was not sufficient to support their children's full engagement in learning, which had decreased along with their performance and the quality of education.[17] Education experiences have been further negatively affected among students who have changed schools and are adjusting to new teachers and classmates. Students and their families have also had to grapple with challenging and traumatic experiences, such as having a close relative in the armed forces (41%), separation from friends and family (28%), moving to another region (25%) or abroad (8%), exposure to shelling and bombing (24%), death of relatives or other loved ones (6%), loss of homes (5%), and food and/or water insecurity (5%).

Students have been psychologically affected as a result of living in an unstable environment with frequent exposure to events of war. Observed effects include fear of loud noises, irritability, lack of enjoyment from school or hobbies, increases in emotional regulation issues, and projection of traumatic experiences in game-playing or creative expression activities.[18] Despite these challenges, perceived need for psychological support among parents for their children (13%) and engagement (5%) is low, although receipt of support systems among those requesting access is high (98%).

The compounding effects of the invasion on the secondary education system, including the abilities of Ukrainian teachers to support students and their learning, is a continually evolving situation. To better understand the needs of Ukrainian students, teachers and key education system stakeholders, further research, monitoring, and evaluation are needed.

Background on the UNITY program and the youth-led secondary education needs assessment

Effects of the Russian invasion are researched under the Ukrainian National Identity through Youth (UNITY) program. UNITY (Mriemo ta diemo) is funded by the United States Agency for International Development (USAID) and implemented by IREX in partnership with Building Ukraine Together (BUR), Center for Corporate Social Responsibility (CSR Ukraine), Making Cents International (MCI), International Republican Institute (IRI), and Zinc Network. The UNITY program is a movement based on a core proposition: empowering Ukraine's young dreamers and doers to think big and turn their hopes for Ukraine into a reality. As part of the program's research activities on youth-related trends and learning in Ukraine, UNITY sought to better understand current barriers and facilitators of learning in Ukraine's secondary education system to inform future youth education policy and programming. The participants of focus for this study were Ukrainian youth and teachers, because engaging in, delivering, and supporting learning activities within the education system during the Russian invasion is their daily lived reality. To make sure the research study had a locally-, youth--, and Ukrainian-led approach, UNITY Team selected youth researchers to join the research team, while senior research specialists provided capacity-strengthening, quality-assurance, and technical

[16] Ibid.
[17] Problems of Ukrainian children in conditions of war (January 27—February 1, 2023) (Rating Group, 2023).
[18] Ibid.

support, and ensured that do-no-harm[19] and trauma-informed[20] approaches were integrated into study activities. UNITY Team members identified youth researchers via an online advertisement and scored applicant submissions based on candidates' interest in joining the research team and any past experience in research activities as a study team member, supporting a research project, or as a research participant. Two male and four female youth ranging in age from 14 to 25 years old were invited to join the research team and trained in social science and mixed-methods research design, implementation, and analysis to engage in study activities.

METHODS

Overview

Due to the lack of available research regarding the war's impact on the Ukrainian secondary education system at the time of the assessment activity's design, the study team chose a qualitative approach for conducting the assessment. This methodology allowed for in-depth exploration of challenges and enabling factors in the secondary education system. Study activities included demographic surveys and focus group discussions (FGDs) with teachers and students, focused on the overarching research questions highlighted in *Table 1*. FGDs lasted 90 minutes and demographic surveys collected participants' background information including region, gender identity,[21] and grades taught/enrolled.

Table 1. Study Research Questions

Participants	Research Questions
Teachers	1. How has the full-scale invasion in Ukraine affected teachers' abilities to provide regular access to quality education and deliver quality learning activities to Ukrainian students? 2. To what extent do teachers feel equipped to provide appropriate additional support to students experiencing learning challenges? 3. How has the full-scale invasion in Ukraine affected teachers' abilities and capacity to appropriately assess students' performance and learning progress?
Students	1. How has the full-scale invasion in Ukraine affected the ability of Ukrainian youth attending secondary school **to engage in quality learning opportunities and access relevant resources** and systems?

[19] "Doing no harm means taking care not to put program participants, staff, and community members at physical or emotional risk, whether intentionally or unintentionally. The four core principles of [this approach include] safety, respect, confidentiality, and nondiscrimination." (How to Implement a Survivor-Centered Approach in GBV Programming [CARE-GBV 2022, 4]).

[20] A trauma-informed approach "recognizes trauma, including primary and vicarious trauma, and responds with policies, procedures, and practices that seek to actively prevent re-traumatization. A trauma-informed approach [...] includes physical, psychological, and emotional safety for all [...] It also assumes that everyone, regardless of their personal experiences, can benefit from this approach." (How to Implement a Survivor-Centered Approach in GBV Programming [CARE-GBV 2022, 6]).

[21] Gender identity response options included "man" and "woman."

To support a do-no-harm approach, including minimization of risk for physical harm, and expand opportunities for eligible individuals across Ukraine to participate in the assessment, all activities with youth researchers and participants were remotely delivered. To be eligible to participate in the study, teacher participants had to be currently teaching and student participants had to be currently enrolled in Ukraine's secondary education system. The assessment originally sought to engage participants from regions with high rates of internally displaced persons (IDPs), specifically Lviv and Vinnytsia regions.[22] However, due to the widespread effects of blackouts across Ukraine during study activities, eligibility criteria were expanded to all regions of the country. This modification in study design was adopted to meet target sample sizes of 20 individuals for each participant group and increase the likelihood that all unique or region-specific challenges Ukrainian students and teachers experienced were represented in study findings.

Timeline, contingency planning, and study limitations

The UNITY Team conceptualized the assessment activities in June 2022, with the goal of completing all stages of research by October of that year. However, escalations in the invasion and related impacts on identifying and engaging youth researchers and participants resulted in significant changes to the study timeline, whereby data collection and analysis activities were completed in March 2023. Given the research and timeline pivots, the study team developed a contingency plan to support research participants' engagement. The team employed the following options to promote meaningful and sustained participant engagement, including in situations of disrupted internet connectivity:

- **Option 1**: Conduct live FGDs with participants via Zoom and/or phone, based on participants' connectivity bandwidth.
- **Option 2**: For participants unable to join live FGDs at the scheduled time, reschedule and have participants join a future discussion.
- **Option 3**: Employ asynchronous communication strategies to share FGD questions with participants. Based on participants' preference and connectivity, solicit responses via audio messages, emails, and/or Telegram or other mobile texting platform.

The team used the above engagement strategies as needed in all cases where participants were unable to join live discussions in their entirety.

While the results of this study provide important insights into the experiences of Ukrainian youth and teachers in the secondary education system during the Russian invasion, there are some limitations. The study did not engage a representative sample of Ukrainian students or teachers thus study findings should not be generalized. In addition to low sample sizes, not all regions of Ukraine were represented among participants and other regions were overrepresented. Internet connectivity and electricity barriers sometimes created challenges for some engaged participants and study team members in Ukraine, who did not have the appropriate bandwidth to connect for the duration of study activities. Due to these same challenges, it is possible that students and teachers, including from more marginalized and geographically isolated groups, who may have engaged in study activities were not aware of the opportunity to participate in the study.

[22] 14 *oblasts* were represented in the final study dataset: Chernihiv, Dnipropetrovsk, Donetsk, Ivano-Frankivsk, Kharkiv, Kirovohrad, Kyiv, Lviv, Poltava, Rivne, Sumy, Volyn, Zaporizhzhia, and Zhytomyr.

RESULTS

Participant demographics

In total, 21 teachers and 40 students participated in assessment activities. Select demographics are included in *Table 2* of the Annex. Among all participants, most self-identified as girls/women. More than one-third of participating teachers and 17 percent of students resided in Dnipro region, and nearly a third of students and 10 percent of teachers resided in the Kyiv region. Most teachers (85%) had completed master's degree programs and their experience in the education system ranged from less than 2 to more than 30 years of experience. Their areas of focus included teaching (85%), education administration (10%), and specialized school education for youth living with disabilities (5%). Almost half of teachers (48%) were solely working in this role and not looking for a second job, and more than half of teachers were either looking for a second job or already working a second job. About half of teachers (52%) delivered education online, an additional 43 percent taught hybrid, and 5 percent taught offline. In contrast, 37 percent of students received education in a hybrid setting, while 23 percent participated in education exclusively online. All teachers provided education to multiple grades of students, with almost two-thirds teaching Grade 11, 48 percent teaching Grade 9 and/or 10, 43 percent teaching Grade 5 and/or 6, and 38 percent teaching Grade 7 and/or 8. In comparison, more than a third of student participants were in Grade 9 (36%) and 23 percent were in Grades 10 and 11 each. Ukrainian language and literature was the most commonly taught course (33%), and an additional 29 percent of participants taught world and/or Ukrainian history. As a result of supporting multiple grades in their schools, the range of students supported by one teacher varied greatly, with one-third supporting 25–29 students (33%), but one teacher each was responsible for teaching their subject to 200 and 400 students, respectively.

Differences and similarities in learning modes during the COVID-19 pandemic and the Russian invasion

Students and teachers both reflected on differences in educational processes and experiences during the COVID-19 pandemic and the war, often citing from a positive perspective that **the pandemic gave them the opportunity to pilot remote approaches and platforms to support and engage in learning that they then adapted and applied to the current context.**

> *"The difference between war…? Well, you know, look, in the beginning, when there was a coronavirus pandemic, we were all on distance learning. Of course, it was a big bonus, probably, because we were prepared for the fact that we very quickly went to wartime and returned to work already at the beginning of April."* – Teacher of Ukrainian language and literature, Chernihiv region

Teachers and students noted that the **education atmosphere was calmer during the pandemic,** because it was understood that the situation was temporary.

> *"For me, the key difference between a pandemic and a war is that during the pandemic, we understood that it was a quarantine, and we would be out literally in almost a month when it all subsided … Here, it is completely unclear when we will return to normal training again … It's a little scary." – Student of Grade 10, Dnipro region*

Other students expressed frustration with being isolated from their friends and missing opportunities to connect in-person with classmates.

> *"A pandemic would have a sense of quarantine. Now, I will stay at home for three weeks … there is no such feeling that it is about to end … I'm tired of sitting at home, I want to go to school." – Student of Grade 11, Zaporizhzhia region*

Teachers and students also noted experiencing and observing among other students and teachers more mental health-related challenges when engaging in education during the invasion, which affected their ability to meaningfully engage in learning activities.

> *"During the pandemic we had no anxiety…we knew that we had a schedule. We work according to the schedule. Children come to us, we communicate with them and so on. Our studies may be interrupted now. Let's put it this way, an alarm signal – we all know that we need to pack up and quickly run away…you still need to get together quickly. And in these minutes, which should be, a couple of minutes and already be in the shelter. That is, it has already become a little more difficult here." – Teacher of math, Zhytomyr region*

Additionally, teachers and students shared that ongoing blackouts and their effect on internet connectivity are a barrier unique to their education experiences during the invasion.

Providing equitable access to quality education: Differences and preferences in engaging in education activities online and offline

When discussing benefits, challenges, and preferences of engaging in education activities online and offline, most teachers and students shared a preference for offline education, noting that the quality of education was better.

> *"When we see the child's eyes in real life, we understand whether they orient themselves [sic] in this topic or not. And that's the only way we can really evaluate them and give them tests, exams, and everything else. This is how we see the result." – Teacher of Ukrainian language and literature, Kyiv region*

Students also felt **the ability to connect in-person with teachers to discuss a challenge or question was critical to engaging in the learning process.**

> *"Offline learning is … better, because online, you don't have such a strong contact with the teacher. Offline, you can chat with him, maybe disagree with something, but online you sit … and now, there are also problems with the mobile Internet." – Student of Grade 11, Kirovohrad region*

> *"I think the way teachers explained there [online] has changed. Because of connectivity issues, there is no Internet … It happens very often that there are no lessons, and you either figure it out yourself or go to your parents. In general, teachers do not explain much online." – Student of Grade 5, Poltava region*

However, most teachers and students also recognized the benefits of supplementing offline activities with online activities. Teachers in particular **reported that remote approaches had the potential to increase equity in access to education.**

> *"The most important advantage of distance learning is that, regardless of where the student … is now, whether in the occupied territory or … outside the borders of his region, permanent residence, or even outside the borders of his country, our educational institution can provide education to every participant … regardless of the security situation." – Teacher of chemistry, Sumy region*

Some teachers also shared that a few subjects were better suited for teaching online, while others were critical to teach offline.

> *"I am not talking now about Ukrainian or foreign literature, where you can just read the texts, and yet you can study a lot of materials on the topics on the Internet. And such exact subjects as geometry, algebra, chemistry, physics, biology: these are quite complex disciplines, where a professional is needed." – Teacher of Ukrainian language and literature, Kyiv region*

Although many students preferred offline courses, most students also shared the perspective that remote education was easier, and they had less work to complete when engaging in schooling online.

> *"Before the war, I probably spent twice as much time. We were given more homework, more algebra and geometry numbers. Since we have quite a few teachers changed now, and with the war starting, they have also improved a bit and, therefore, give us less work." – Student of Grade 10, Dnipro region*

Teachers and students also openly stated that **cheating was common in remote education settings and could be hard to recognize and prevent. Students reported that they selectively joined remote classes they perceived as the most important or interesting to them.** Some students also engaged in schools where teachers simultaneously taught lessons to students present in-person and online. The few who received education through this approach agreed that teachers were not able to fully engage with both groups and online students in particular felt left out and forgotten. One student reflected how as a younger student, they may have preferred in-person schooling, but as they now prepared for graduation and prioritized which classes to attend, they preferred engaging online because they had more control of their schedule and shorter days of class. Several students who attended in-person classes in shifts raised this as a cause for late commutes home after a day of schooling. **Several students noted having more control of which classes they attended as a** key **benefit** of **online** education.

> *"Probably, in the ninth, tenth grade, I was more inclined to offline learning, because … you go to school … you speak … and you are with the teacher … There is a blackboard, and … it's even easier to ask questions or understand this … subject … it doesn't work out very well online. But now, in the eleventh grade, I am inclined to go offline: Fewer lessons, less time spent on subjects that I don't like, that I don't want to learn, and it's easier to write it off somewhere … what's more, you can focus more on exactly those subjects that you are going to write for National Multi-subject Test and devote more time to additional ones." – Student of Grade 11, Ivano-Frankivsk region*

Several students shared a **preference for online education because of past experiences of in-person bullying.** One student reported their preference for online classes due to bullying and the long commute for in-person classes, an additional challenge some students shared. The student also noted the challenges of being in front a screen for long periods of time.

> *"I live in one end of the city, and my school is located … on the other side of the city … in order to get to school, I have to get up at six in the morning. This if offline training [sic] … this is a plus of online education, that you can sleep in … Another advantage of online education is that you won't get caught by your classmates. As a bullied survivor myself, it's simple … The disadvantages of online learning are that you have to sit in front of a tablet or monitor for eight*

hours, or even more. This is a complete minus." – Student of Grade 11, Zaporizhzhia region

Several teachers who worked in specialized schools or supported youth living with disabilities also highlighted that online education eliminated access barriers that were exacerbated due to the invasion (e.g., wheelchair access, including to bomb shelters). **In contrast to students' experiences of online education being easier and requiring less work, teachers consistently highlighted that they experienced a higher workload and longer hours when preparing and delivering education online.**

"If we talk about children who are online or homeschooled … we do not have such an opportunity to respond to this work qualitatively, even quickly. Suppose a child sends a photo of a notebook. Yes, there they completed the exercise, so that the teacher could properly check this exercise, they should print out the mistakes that the child made and correct these mistakes in the text version for this child. It is very difficult, because we spend too much free time, which we would like to just rest and restore our strength." – Teacher of Ukrainian language and literature, Kyiv region

Teachers also shared frustration with how **current government requirements created extra work for education staff and students** to satisfy a standard that did not seem to promote students' learning and felt unnecessary during a time of war.

"The education system is still currently … in such a form, or rather in such a vacuum, as if there is no war … the requirements for teachers are so high … the requirements given by the Ministry of Education and Science are too high … the same competitions … we need to make certain reports, perform Olympiads [sic], take part in them without fail. I don't understand why this experience is required … children should not be forced to take part in Olympiads at any time – war or no war … why should we necessarily participate in the competition? To squeeze, excuse me, out of nothing some kind of work, just to take part? … Then … they turn to the people from the education department of a particular city … and say: 'So you didn't manage. You did not meet … this standard, you did not pass this number of papers … you didn't participate, you're bad.' And then the teachers are accused of the fact that they … during the air raids, during the various conditions that we have … did not squeeze out of these children competitive works … you sometimes want to look these people in the face and ask them: How can you demand this now? The main task now is to work normally with children as best we can." – Teacher of Ukrainian language and literature, Kyiv region

Students also **shared frustration with system requirements that inform education evaluation standards,** noting a desire to change current assessment approaches.

"If I associate myself with something now in the education system, I feel like a dog in a competition where everyone evaluates me for my skills, for what I do, for what I have learned. They give me medals, and some dogs that can't do the same as I do … that's how I see it. Some have a knack for learning, some don't … we want to change something. We play a role. We are here to change this system." – Student of Grade 9, Kirovohrad region

Although some government requirements provide guidance on promoting students' learning, teachers shared they were outdated and did not take into account the current

context of teaching online or the barriers and facilitators that had emerged since the COVID-19 pandemic.

> *"In principle … during the evaluation of educational activities of students in classes, we use the order of the Ministry of Education and Science of Ukraine 'On approval of criteria for evaluating educational achievements.' As for the amount of homework, the requirements …. clearly states that … homework in the 5th grade should not exceed … one and a half hours, and accordingly, the norm of this law should also be taken into account in each grade … it is clear that these criteria and these norms were not created for distance learning. If you look at these orders … they are not from 2019, they are from 2011, we are not talking about sanitary regulations, but about evaluation criteria. Therefore, it is necessary to adapt … both the evaluation criteria and the requirements for the duration and volume of homework precisely to the conditions of distance learning, because children spend half a day behind gadgets, studying, and again half a day will spend [sic] doing homework. This is …a rather long process." – Teacher of chemistry, Sumy region*

Lack of appropriate guidance on how to best support learning activities resulted in increases in the burden of work for teachers. Setting aside additional time to carry out educational activities online was particularly challenging for **teachers who worked a second job.**

> *"I have a very busy life as a teacher. I have a part-time job, I have a main job. I also have tutoring." – Teacher of Ukrainian language and literature, Chernihiv region*

Supporting remote education activities is an additional time commitment for the shrinking teaching workforce in Ukraine, which already has limited bandwidth. Because many teachers have left Ukraine or moved to other regions of the country, leaving behind open teaching positions, those who stayed in Ukraine now support more students and they do not feel their sacrifices are reflected in their pay or benefits.

> *"I believe that a state program to support teachers of Ukraine is needed. 22,000 colleagues went abroad. And we understand that many of them, especially young people, will not return … whoever doesn't build schools will build prisons. Let's start with that. And even more so (now) wartime, the state must be rebuilt. So, let's start with supporting teachers." – Teacher of history, Dnipro region*

Students also shared that they knew teachers who struggled financially and expressed their support for increasing governmental support of teachers.

> *"The Ministry of Education … I would probably ask to raise teachers' salaries … I feel sorry for them. Once we were talking in class with the physics teacher, and she told us that her salary had been withheld. There are twenty-seven hryvnias left on the card, and she doesn't even have anything to buy food with." – Ukrainian student of Grade 9, Zhytomyr region,*

Some students also shared they no longer had the same teachers due to ongoing displacement and were upset that teachers they had developed personal connections with were gone. Interestingly, this same sentiment was not expressed in regard to students leaving their classes. Rather, students spoke positively and praised their schools for accepting student IDPs into their classes.

> *"I have had two teachers change, one of whom is my favorite … I was in pain. I was waiting for the schedule … here, they are changing two of my teachers, and it hurts. I'm holding the phone in my hands. I see a message that the schedule has arrived. I'm afraid to open it, but I did. I almost cried … because the chemistry teacher … became something close to me. I don't know how to explain it to him. And now I like chemistry purely as a subject, without a teacher. I study chemistry because I'm used to it …" – Student of Grade 11, Zaporizhzhia region*

Other students noted that teachers who were new hires were not always as skilled at explaining challenging concepts to them and their classmates. Students noted this was common among teachers who were newly hired to support teaching vacancies, some of whom were older and had come out of retirement to teach.

> *"In computer science, we had a very good teacher … He explained everything that was not clear – he would show everything. And the one that was given to us now – she just showed a video presentation … I miss them very much." – Student of Grade 10, Dnipro region*

Several students highlighted that the courses they enjoyed the most were the ones where they had the most effective teachers, which often led them to prioritize pursuing the same subjects for future professional development opportunities.

> *"My favorite subject is biology. This is due to my former teacher from my former school. He was an extremely cool teacher and successfully explained the material as accessible [sic] as possible, which is why I choose biology." –Student of Grade 11, Kirovohrad region*

Effective teaching approaches, tools, and platforms

When discussing methods and resources for supporting teaching activities and learning outcomes, students and teachers often cited interactive tools that could be used for online learning.

> *"I try to start my lessons with, for example, some kind of quiz in the classroom. It could be Kahoot. The kids look forward to the quiz, they know that the first three winners will get a high grade, so it ensures, well, if not 100 percent, then 90 percent of the students come to me on Zoom without fail … But the further I go, for example, now I warn them about the topic of the quiz, this allows me and stimulates them to repeat and remember this topic." – Teacher of Ukrainian language and literature, Chernihiv region*

Platforms teachers and students used on a daily basis included Microsoft Teams, Zoom, Google Classroom, Vseosvita, Na Urok, NZ.UA, LearningApps, Flinga, Wordwall, Padlet, Interactive Whiteboards, e-diaries, and gamified approaches such as Kahoot and Mentimeter. **Students and teachers alike mentioned the importance of being able to demonstrate concepts visually, especially for applied courses like geometry or chemistry. Teachers noted using a video camera to demonstrate these tasks, which students noted as especially helpful. Students in particular also cited YouTube as a vital resource they accessed to visually supplement learning activities for their classes.**

> *"The most important advice I learned for myself in online training is that no one can teach you better than yourself … I started to understand that I don't catch something in the lessons, that I'm missing something from the Internet, I just don't understand something. I began to study more deeply on my own. I*

started reading more about the subject. I started watching the channels I needed on YouTube." – Student of Grade 9, Kirovohrad region

Students shared that they missed interacting in person with their friends, but group work and opportunities to connect with classmates online, including through games increased their interest in engagement and actual participation. **Although teachers and students alike engaged with many platforms to support remote learning, teachers expressed feeling overwhelmed with the volume of available resources and finding time to learn how to use them effectively to apply in their teaching activities.**

"A modern teacher cannot keep up with modern information technologies … in order to encourage, I would say, our students, we have such a great opportunity. It was very difficult for me at first, because we were abandoned, our management abandoned us. They did not give us any explanations on how these lessons should be conducted … Everything I did, I found myself … now I really like preparing for lessons … I think that it is good to prepare for such a lesson online, it takes a lot of time from the teacher … Without learning himself [sic], it is impossible to give good support, a good lesson for young people. The fact that we now have a lot of technologies, I didn't study much in the summer, but I have already looked at a lot. I look, I think: God, people are already ahead, and I don't know it yet." – Teacher of history, Dnipro region

Despite these helpful tools and strategies, some students and teachers stated that they experienced online fatigue as a result of extended screen time, which also strained their vision. Some teachers noted that when students did not actively participate in remote activities and did not have the camera on, it was impossible to confirm whether they paid attention or were present for the lesson.

"It is also difficult for the teacher to contact the children because he is on Zoom. They turned off the camera, and you don't know if there is a child there or not, it's very difficult." – Teacher of Ukrainian language and literature, Chernihiv region

Some students reported that because they were off camera, they were sometimes less engaged in lesson activities.

"At our school, for example, no teacher, except for the physical education teacher, tells us to turn on the cameras, or otherwise encourages us to always be in focus. Therefore, it is somehow very lazy, that is, half a day at school is spent somewhere in bed or near it." – Student of Grade 11, Kharkiv region

Many teachers reported finding new and creative ways to maintain effective communication with students as a key priority and strategy to support both learning outcomes and students' emotional and mental well-being.

"What have I changed as a teacher? … I began to talk more with the children on various topics, in addition to the topics of the lesson, and the children perceive it very well, they need it, they are very open to contact. This was especially the case in the spring: they reduced any question you raised to the current situation, to the war and all that. They really need this psychological support." – Teacher of history, Dnipro region

In reflecting on their communication approaches since the start of the war, teachers recognized that they had shifted the way they engaged with students, and their parents, by

adopting more informal language. They cited **maintaining open communication channels, including outside of school hours, on text-based platforms as particularly critical. Some students shared that they felt more confident expressing themselves through remote channels. Teachers noticed this trend and used virtual platforms as an opportunity to further develop relationships with students to provide needed support**.

> *"We shared news. We shared positive news with each other, chatted in Telegram, created memes. And sometimes, we created memes for each other … If it was someone's birthday, they created memes to congratulate in this way … They tried to distance themselves emotionally and respond emotionally, read, understand, talk only about positive news. And in many ways, you know, faith supported me. As for the needs of children, it seems to me that they should be heard more often." – Teacher of Ukrainian language and literature, Chernihiv region*

Assessing and supporting students' learning progress, outcomes, and needs

Students and teachers shared similar concerns about how the invasion affected the education system's capacity to consistently assess and promote students' learning. Although both participant groups recognized the utility of online platforms, including social media, in supporting learning outcomes, **lack of access to critical resources such as lab equipment limited students' opportunities to engage in practical lessons (e.g., applied sciences, such as chemistry)**. Teachers and students agreed that students were underprepared for upcoming graduate exams. **Students overwhelmingly cited the challenges they experienced in mathematics and several noted confusion with the expected format for the exams.**

> *"A lot of stress due to mathematics … the fact that it needs to be written on the external examination or on the National Multi-subject Test … they still cannot determine a specific format … this is also a problem, because as if yes, there is a war in our country, everything is very difficult for us, but because they cannot decide, they do not do better at all for the people who are writing this year's external examination, or rather National Multi-subject Test … I hope that this situation will improve next year, and there will be a clearer plan created from the above: what we should do, what exactly we should teach, which subjects, which specific topics and so on. Because this is actually a very big confusion, and people are probably just learning everything in a row right now, in order to be safe, probably for the future." – Student of Grade 10, Lviv region*

Many students also reported feeling concerned and discouraged by **their teachers who openly shared that they did not think students would be prepared in time to take the exams** and that they would not score well.

> *"In our country, they prepare for the external examination only from the Ukrainian language and from history. But in algebra and geometry, we are constantly told … we will not pass the external examinations … we are not prepared. They just say so that we know how insignificant we are … that we don't know anything … the fact that we go to school saves at least a little. The teacher is explaining something. I can at least see what she is saying … maybe this will somehow help me pass the exam." – Student of Grade 10, Dnipro region*

Further, issues related to electricity and internet access have created barriers that impede students from meeting deadlines and completing assignments. **Students shared that because of these challenges and lack of support and understanding from teachers about**

limitations in internet connectivity and their mental bandwidth negatively affected their ability to complete assignments satisfactorily and on time. Moreover, they did not feel they had the skills they needed to engage effectively in the workforce after completing their education.

> *"Sometimes, it seems … teachers do not understand either us or the situation in which we find ourselves. But, fortunately, there are people who understand both us and blackouts (happening), and give more time to perform certain work … Only the class teacher always tells us that we will pass everything, we will all definitely enter universities, and we should not be afraid of exams, because the most terrible thing in our life is war." – Student of Grade 11, Kyiv (city)*

Despite their perceived level of preparedness to pursue higher education or join the workforce, many students were positive when sharing their interest in going abroad, learning foreign languages, and having field trips to get out of the classroom. **Some students noted interest in pursuing a degree abroad because of perceptions that a Ukrainian diploma was undervalued on the job market. Regardless of where they preferred to pursue a degree program, most students noted a sense of commitment to engaging in a profession after graduating in Ukraine to benefit the people of Ukraine.**

> *"Many people want to go abroad, but in general, after the full-scale invasion, many of my acquaintances changed their opinion about studying in Ukraine … many decided to stay here to study … an even greater part say that they should study and, like me, return to Ukraine and continue their lives in the future, rebuilding Ukraine right here. That's why I think that everyone just says that abroad is better … And our statistics are still so deplorable. But in fact, I think that it will, on the contrary, benefit the state … we are the next generation, we are the future of our Ukraine … we just have to understand that this is a priority … some soldier gave his life so that you would rebuild this country and so that you was [sic] able to continue living in this country … it motivates me to move on, to participate in some activities, to somehow improve myself and the country." – Student of Grade 11, Kyiv (city)*

Both groups agreed that supporting students' success and achievement of learning outcomes was only possible when the mental health needs of students and teachers were met. Some students noted that recently, their teachers seemed tenser and angrier in the classroom setting, potentially due to stress. Additionally, certain students reported that they did not feel their teachers treated them with respect, with some sharing experiences of teachers reading their grades or yelling at them in front of students, which made them feel emotionally distressed. **Teachers and students recognized the need for and importance of additional mental health and psychosocial support (MHPSS) resources for both groups, including additional training for school psychologists on providing support in emergency situations.** Some students and teachers stated they were able to meet with other teachers, students, and school psychologists for support sessions or art therapy, sometimes in a special room dedicated to these activities. However, other students requested additional resources such as school-based mental health support hotlines.

> *"Our psychologist arranged such meetings for the students of our school. All of them. Whoever wanted came … and it was comfortable when you were distracted from the news." – Student of Grade 11, Zaporizhzhia region*

Unfortunately, several students reported having poor experiences with school psychologists who were not receptive to their needs. Some students also noted experiences with

psychologists who did not keep information they shared private, thus discouraging them from seeking further mental health support.

> *"She tells the problems of her students, people, children who turn to her. She tells this to other people, other psychologists, indicates all the names, shows all the information about the participant, the child who turned to her. This is privacy … this information cannot be told to anyone else … she does." – Student of Grade 11, Kirovohrad region*

Regardless of their level of confidence in providing comprehensive support for students' mental health needs, teachers consistently stated that promoting students' safety and mental health were the highest priority, higher than supporting learning outcomes.

> *"Sometimes you … put yourself in the place of a child and think: if you got up in the morning and read the news, and you are already worried, you start to feel bad, then children are in the same state, and of course, most of them at different ages are not even outwardly show[ing] it. Therefore, even if it seems that the child is emotionally unstable, it may actually be different … it is now very important to pay attention to the stressful state in which we are every day." – Teacher of history, Dnipro region*

Some students noted that they noticed a positive difference in how their teachers communicated with them, including when they had the opportunity to connect for education in-person.

> *"Teachers began to value everything more, as do, it seems, all Ukrainians in general … They became a bit more … you could say kind … they show some kindness to the students, they somehow appreciate more the fact that there is such an opportunity to see each other in person and the fact that we are all alive, we can communicate. And it is very felt." – Student of Grade 10, Lviv region*

Teachers and students both reported that patriotic activities celebrating Ukrainian culture, especially during stressful situations, lifted their mood, gave them strength, and inspired them to engage more in education activities. Patriotic activities included some that occurred during the school day with support from the school, at youth centers, or extracurricular activities, such as fundraisers and bake sales for the armed forces, making trench candles and nets, singing, holding group moments of silence for lives lost during the war, or creating Ukrainian-inspired art. Many students also noted these volunteering activities had become of greater interest to them since the start of the invasion.

> *"When we have anxiety, when the alarm siren happens, we leave quickly. We gather, we go to … the shelter, and there we also need to occupy them with something … they sit [and keep] to themselves. We are waiting, I don't know, we are talking. It happened that they also sing patriotic songs, they love it so much. Then it's as if children are organizing such a mini-concert." – Teacher of math, Zhytomyr region*

Many students and teachers also shared the perspective that they needed to stay strong and persevere in providing/engaging in education as part of their duty in honoring Ukraine, the sacrifices made during the war, and to nurture a spirit of Ukrainian resilience and victory. However, teachers felt overburdened in their responsibility to keep children safe.

> *"Teachers have a really big responsibility … but how will it all happen? Will we have time to take the children to the shelter? How many minutes will we spend*

on this?... we're all working fast now ... so far so good. Thank God that it is so, and I hope that it will be so. But God forbid, if there is a situation, we really don't know how each of us will behave in this situation, whether someone can really panic ... This is not predictable ... the responsibility is great, and all the teachers in our school are ready for it, as they say ... it is difficult ... but we are working." – Teacher of math and IT, Chernihiv region

Teachers and students reported that **students** had **a greater interest in learning more about Ukrainian-specific topics and subjects since the start of the invasion.**

> *"I have almost the same desire to learn everything related to Ukraine. For example, history, geography—all this somehow became more interesting, and there was a greater desire to learn something Ukrainian." – Student of Grade 9, Dnipro region*

Providing support to address learning challenges: Awareness, provision, and utility of guidelines to promote students' safety and learning outcomes

Teachers and students shared experiences of applying standards issued by the Ministry of Education and Science (MOES) and their school administration in emergency and everyday classroom situations. **Guidelines both groups cited and used most frequently related to safety practices during air raids. Teachers and students recognized what to do during an air raid, but many participants' schools lacked bomb shelters to promote physical safety**. Even among those who had bomb shelter access,[23] teachers noted an ongoing struggle to help students regulate emotions and engage in learning activities during long periods in shelters. Teachers shared that they tried to distract students with games and conversation to pass the time.

> *"The main thing is not to return with a conversation about the air alarm at all. Even sitting in the shelter, we also try not to think about it. We talk ... it should be a conversation that would involve the whole class. What will you do when the air alert is over? Yes, let's make conditional bets, as it were: will we make it to the lesson, or will we not make it to the lesson today? Well, yes, it should still be emotionally more positive, because these are still children, and they cannot be completely suppressed by the events that are happening in our country now. They realize it themselves. They were witnesses, and history is being made before their eyes." – Teacher of Ukrainian language and literature, Chernihiv region*

Some teachers who provide education to students living with disabilities reported significant challenges in physical access limitations and identifying exercises to support these students while waiting in shelters.

> *"It is very difficult when the siren is on, they close in on themselves, they are afraid and it is us. We fight with them, we help them with this, we make sure that everything will be fine with us." – Teacher in specialized school, Zhytomyr region*

[23] According to recommendations issued by the State Emergency Service of Ukraine in June of 2022, bomb shelters in schools are required to have a flat floor, adequate lighting, including for emergencies, a bathroom, two exits, and ventilation (savED 2022). More information at: Education and War: Impact of the Russian full-scale invasion on the school education sector of Chernihiv city.

Teachers and students expressed the need for additional direction and standards beyond supporting students' safety during emergency situations, primarily to support students' engagement and appropriate assessment strategies. **Two groups of students that teachers consistently identified as needing further guidance on how to support were students enrolled in different institutions in Ukraine and abroad and students with inconsistent engagement in remote education.** Students engaged in multiple institutions may also be taking classes in multiple languages. These students often have conflicting class schedules and assignment deadlines, which affects their ability to achieve satisfactory grades in both institutions. Teachers expressed much confusion regarding how to assign grades and how to take into consideration grades from other schools. Teachers also noted the additional complication that students abroad may be placed in different grades than they were in the Ukrainian system due to their current education needs and scores.

> *"We do not have a system in the country for regulating the affiliation of students to one or another school. Even when migrating to the territory of Ukraine, children can stay in several educational institutions, because they may not receive documents in their hands." – Teacher of IT and robotics, Donetsk region*

Teachers asked for more guidance on assigning grades to students who are consistently absent or not engaged, especially in online classes. This group included students who are not responsive when they are signed into remote activities.

> *"It is not clear how, for example, to effectively evaluate students during distance learning. What to do if, for example, practical work on certain subjects is mandatory, and the student does not perform them, systematically, we know that some students simply do not perform them due to the lack of their own desire. And how to force – not to force, but to motivate – a student." – Teacher of chemistry, Sumy region*

Many teachers and students expressed dissatisfaction with the number of courses and level of detail for courses students were required to take, suggesting that this should be scaled back due to resource and internet access issues.

> *"At the moment I have … sixteen subjects … I have physics on Wednesday and Friday. I don't have electricity on Wednesday. The teacher doesn't have electricity on Friday. That is, I only attend physics lessons asynchronously,[24] watching some video and that's all, there is no explanation … When you need to do homework, when you work asynchronously, you have to do what we have to do in class and do more homework. It is twice the load, there is not as much time with electricity, there is no such thing. And, in general, it is very exhausting, both physically and mentally. Just sitting, writing, and writing, and writing. It's wrong, that is, that I, a child, should, it seems to me that I have to figure out what was supposed to be classwork on my own … and homework. It takes way too much time." – Student of Grade 11, Kyiv (city)*

[24] Courses or lessons offered asynchronously are not delivered in real time. Materials and homework related to the lesson can be accessed and completed online, often through videos or recordings of lessons and use of electronic submission forms. This approach allows the student to engage in learning at their own pace and at a time of their choosing.

Similarly, to students' feedback on relevant subjects for exams, they also shared that they found mathematics courses particularly difficult in general.

> *"I would make mathematics easier, algebra, geometry … it is not necessary, in my opinion, to delve into all this so much … it's not interesting, but you still have to pass these independent tests late r… it's hard to understand … mathematics, but they still force you to do it, memorize it." – Student of Grade 10, Dnipro region*

Although there was some variation in students' and teachers' suggestions for the exact number of courses, with some suggesting that there be a minimum number of courses to be taken, and which courses to prioritize for students' learning, they strongly agreed that classes that promoted Ukrainian culture and history should be the highest priority for instruction.

> *"It is important to know the history, the language – we live here, we speak it, and to convey to children the very understanding of our country, our mentality, our culture, why it is important. And so that when the children graduate from school, they are motivated to change our country and to encourage them to express their thoughts more" – Student of Grade 11, Ivano-Frankivsk region*

Across discussions with students from different age segments, they consistently expressed that they wanted to choose their courses, which should be offered together and equally regardless of gender identity, particularly to focus on topics or skills related to future professional goals.

> *"There is really not enough … ability to choose subjects according to the future profession … one might even say, [it] is unreasonable, given that many teenagers cannot decide which specialty they will choose in the future even before the final graduation exams. But still, some possibility … to set priorities would be convenient." – Student of Grade 9, Dnipro region*

Students also want more opportunities to take courses that could be practically applied to their everyday lives. Topics often suggested included financial literacy, psychology, and sex education, as well as courses that focused on public speaking, communication, resume writing, how to find a job, and other skillsets.

> *"I would … introduce some mandatory subjects, such as sex education, psychology, sociology … and financial literacy, and all … students would choose … you can put some kind of limit on the number, but the students would choose … which ones they like more." – Student of Grade 11, Kyiv (city)*

> *"I don't think it will ever happen, maybe in 50 years … I would like to … I decided for fun to look in books and count how much real information there is that can fit in life. Well, it seems to be only for me, not saying that for others. I calculated … I got about 32 percent. I would like it to be possible to choose, for example, the first – junior school. Everything seems to be … clear there. This is exactly what everyone should know, but then …. you can choose the subjects that you want to go to and that you want to develop as much as if there was some English … it would be three times less mathematics for you …. than English, presumably, because you want to develop English there for your future profession … so that you learn more useful material. And … it will be much easier for you in the future. And you were already on your way, as if … everything they tell you about how to pay utility bills there. This is all for us to develop, what should be done, how to start making initial money." – Student of Grade 8, Ivano-Frankivsk region*

Students shared that if given the opportunity to choose their classes, they would be more likely to engage in coursework.

> *"I believe that more students would … be motivated to do well in school if they could choose." – Student of Grade 10, Lviv region*

Other students who noted that they already selectively chose what classes to attend for remote schooling based on their interests shared this sentiment.

> *"I haven't done all the homework for this year for a long time … I always tried to do everything, I studied excellently in nine grades …. Now, I just don't have enough for it … apart from school, I have other interests, there are even books, movies, something like what I want to watch, which is more interesting to me than some kind of physics … I just prioritize myself … if I did everything we were asked to do, I realize that this is all I would have, and … I don't think it's okay. We should not be loaded so much, and we should set some priorities. I think it would be better if we could choose subjects that we like more, that we want to study more deeply, instead of teaching what everyone needs to learn." – Student of Grade 10, Lviv region*

Several students also suggested having an additional lesson teachers could use as needed to focus on topics that addressed students' emerging needs and interests.

> *"It would be cool if the teacher didn't have time there … [if] we don't understand, add an extra lesson just for understanding." – Student of Grade 11, Ivano-Frankivsk region*

One student suggested this lesson could be used to provide extra support to prepare students for exams, including those who may not be able to afford tutors or courses outside of school that are prohibitively expensive.

> *"As for preparing for the exams, it should probably be added here, as well as some zero lessons … in a colloquial style … at the end of the day, so that it was some school-based courses, free of charge. Because everyone has to take the exams and they don't prepare for them at all … Not everyone has the money to prepare … there are not enough such courses at the school." – Student of Grade 11, Zaporizhzhia region*

The role of students, teachers, and parents in the secondary education system

Throughout FGDs with teachers and students, both groups shared perspectives on their current responsibilities in the education system and related changes they wanted to see from MOES and school administration. Teachers noted that they were expected to provide MHPSS beyond what they could provide with their current bandwidth and professional training experience. **Students and teachers both expressed a desire for parents to be more engaged in supporting students' learning, especially in the home, to take some of the burden off of teachers**. One student shared their perspective that parents' support was especially important for younger students.

> *"It's the most difficult for the younger classes now, because the war, they need someone … because the discipline itself is more difficult. I'm talking about elementary school … parents can somehow … starting, … from the sixth grade … up to the ninth … even in the tenth grade … it is very difficult with self-discipline, and parents are busy at work … it would be cool to interest them, to come up*

with something so that they could be involved as much as possible." – Student of Grade 10, Dnipro region

Additionally, teachers consistently reported the pressure they felt to promote students' learning outcomes beyond realistic expectations.

> *"The situation now depends on our military and on our endurance, and on the teachers' shoulders – in fact, the whole society. This is not an exaggeration, because a teacher not only provides education and knowledge, but also forms a worldview and mentality. And in general, I want to tell you that teachers today need to be very well supported – psychologically, morally, and financially." – Teacher of history, Dnipro region*

Students stated that their feedback and opinions were not taken into consideration for education processes, even when they shared them with teachers and other education professionals in their schools. **While some students noted that they participated in extracurricular activities (when offered) and clubs that could influence activities in school (e.g., government boards), they would like a greater role in guiding the direction and focus of their own educational activities and paths, including selection of education curriculum.**

> *"If we take the role of the student directly in … all schools, then it seems to me that we do not play such a big role in the education system. Students play a bigger role. This is clear, because they can already go to protests, they are of legal age, they are studying … But if we take the education system as a whole, students have the greatest influence." – Student of Grade 11, Ivano-Frankivsk region*

Some students also expressed an interest in engaging directly with the government to provide their inputs on educational processes.

> *"It would be very cool if I could influence it, because I constantly think about it … I understand how much I want future generations to feel better at school than I did … as if they somehow lived better than me … it would be cool if I … had something to do with the Ministry of Education … I could somehow … my voice, my words would be … important, and something could change with my participation." – Student of Grade 10, Lviv region*

One student already engaged on a Youth Council shared that her involvement was important to her, but she would like to have more leadership and decision-making power as a student in the secondary education system.

> *"I am a representative of the Youth Council …. communication with the department of education takes place, but … not as efficiently as we would like … I believe that regardless of your age, you can influence anything … when you are a student, it concerns your problems and the problems of your peers. So who, if not you, [who] should be listened to? Because people who studied at school 20 years ago have no idea about the problems and needs of modern schoolchildren." – Ukrainian student of Grade 11, Kharkiv region*

RECOMMENDATIONS TO PROMOTE A MORE EFFECTIVE EDUCATION ENVIRONMENT

Guidelines and training needed to support teachers and students

In FGDs with teachers and students, both groups shared experiences, insight, and suggestions for areas where more MOES' support was needed to promote learning outcomes. Certain students reported not feeling well-supported by their teachers in the current challenging educational context, because some teachers maintained strict deadlines and standards for assigning grades without taking into consideration the impact of the war on students' mental health and ability to engage in education activities. In addition to guidance on assessing and promoting learning among student IDPs and less engaged students, teachers and students alike recognized the need for additional MHPSS resources for teachers and students, including additional training for school psychologists and teachers on topics such as emotional regulation and how to address and prevent bullying. Training on MHPSS should include recognizing, responding, and providing appropriate safe and vetted referrals for youth who have experienced trauma, anxiety, depression, and other mental health challenges. Other topics to explore in training that teachers raised included IT-related subjects, platforms, and resources to support learning activities. All guidance, regardless of topic, should include different tiers of options and approaches to allow schools and teachers to contextualize approaches within the local setting and align strategies to be sustainable according to the current situation in their school and region.

Financial investment in Ukraine's teaching workforce

Teacher workload and pay was a pain point teachers and students raised, with teachers expressing that they felt overburdened, overworked, and underappreciated. Students recognized that their teachers were undervalued and underpaid. Furthermore, some students noted having no interest in pursuing education as a career because of their own negative perceptions of how Ukrainian society treated and compensated educators. This finding is particularly important to note because students reported that some of the most effective teachers they had were younger and had teaching strategies that resonated with them and a greater ability to better connect with students. While the study sample for this assessment was small, it is worth noting that more than half of teachers shared they either had a second job or were actively looking for a second job. Thus, additional financial investment is critical to support, grow, and maintain the teaching workforce in Ukraine.

Modifications to student curriculum

Teachers and students stated they wanted to see changes in the number and focus of courses for students, including those that are prioritized for students' graduate exams. Shifts in education delivery modes have affected education quality, and some students felt uncertain about how they would complete their secondary education activities, including graduate exams, and adequately prepare for higher education and economic opportunities after graduation. Students expressed a desire to choose courses based on areas they wanted to pursue after graduation, such as psychology. Students also requested more focus on practical subjects, such as financial literacy, sex/health education, and other topics related to life skills and the job search process. Both students and teachers also noted an increasing interest and motivation in offering and focusing on courses that promote Ukrainian culture and history. Teachers and students in particular shared an interest in being more involved in the education curriculum selection process.

Infrastructural resources needed to support learning outcomes

While some teachers and students resided in regions less physically affected by the war, others were less fortunate and lacked basic resources to effectively deliver or engage in education. Infrastructural resources[25] such as generators, heating, and water access were limited, but bomb shelters, electronic devices, textbooks, and consistent and reliable internet access were most often mentioned as the most common and significant barriers to delivering and participating in education. In cases where in-person education was not possible, teachers expressed frustration with the lack of electronic devices available to students, who often had to share laptops or even a single mobile phone across all household members, including parents, which created additional barriers to their engagement in remote education activities.

Future research

Based on findings from assessment activities, there is a need to conduct further research on the emerging needs of teachers, students, and other stakeholders in the education system (e.g., parents). Teachers in particular shared the experiences of vulnerable groups of young students, including youth living with disabilities, and students emphasized the importance of supporting youth mental well-being in the classroom. Both groups of participants also noted the need to engage parents more meaningfully in education processes. Further research on parents' participation in supporting children's education, including related outcomes for youth with parents who are serving in the armed forces, have relocated, or died as a result of the invasion is critical to understanding and addressing their needs.

LESSONS LEARNED

Modifications to activity approaches

During assessment activities, modifications to research strategies and communication were incorporated to support assessment's completion. Creating a study contingency plan to promote connections with youth researchers and participants was necessary to facilitate study progress and secure a shared understanding of how research activities would be conducted as rolling blackouts, air raid alarms, and escalations in the invasion fluctuated during the study. Due to the evolving situation of the war, timelines shifted multiple times, with data collection being delayed and rescheduled because of persistent electricity and internet connectivity issues. This resulted in the need to schedule a higher volume of FGDs with smaller numbers of participants. Subsequent follow up and data collection via text-based platforms for those who were unable to join the entirety of live discussions eased some of the burden of scheduling additional FGDs and allowed those who were previously unable to participate in live discussions an opportunity to share their responses to study questions. Connectivity issues also created challenges in obtaining signatures on research documents (e.g., consent forms, receipts of payment). Providing confirmation of consent and receipt of payment via text messages was employed as an alternative for documentation purposes, as needed.

Recruitment and engagement

Despite use of multiple outreach strategies and activities over several months, identifying both youth researchers and research participants for the study was a challenge. Developing a system and documented processes to provide additional coordination and promotion support

[25] Other basic resources mentioned included access to fire extinguishers, first aid kits, and paramedics or other medical personnel to provide health support services in the school setting.

with other key stakeholders, including in external networks, may ease the recruitment burden for future research and programming activities.

In prior research activities, the UNITY program identified that there was a lack of programs and opportunities to promote research-related skills among Ukrainian youth. Perspectives shared by youth researchers and youth participants also seemed to support the idea that Ukrainian youth may not be aware of research opportunities and their benefits. Youth researchers and youth participants reported after they engaged in research activities that they were initially uncertain about what participation involved and intimidated and doubtful that they could make valuable contributions to study activities. This was articulated most often among younger youth (e.g., 15 and under). These reflections suggest the need for future research and program opportunities to continue to be advertised in a youth-friendly way. Finally, while the study engaged youth researchers across different age segments, younger team members on the project were more engaged and active than older youth participants. Older youth often had competing responsibilities, including exam preparation. This suggests the need for engaging youth of younger age segments in program activities, including leadership roles, because they may be more motivated if they have not had prior opportunities to build leadership skills. Other approaches may involve having team "buddies" with whom each team member can check in independently in addition to more senior team members for support, as well as to promote accountability on research tasks.

Capacity strengthening and applying do-no-harm and trauma-informed approaches

Making sure that study activities incorporated a do-no-harm and trauma-informed approach both for research team members and participants was a critical consideration at all stages of the assessment. All research team members stayed in communication via Telegram from the time of their onboarding, with senior team members checking in between study activities and meetings to provide support. Weekly research meetings focused on research skill-building to support youth researchers' capacity strengthening.

Regardless of the level of background experience in research activities, all youth researchers were encouraged to engage in and lead activities at each stage of the assessment after completing training activities. While youth researchers were engaged to some degree in the protocol design, participant recruitment, data collection, and analysis activities, senior research team members deferred to youth researchers to determine when they felt ready to lead study activities. Although this translated to a slower pace of study activities in some instances, senior research team members felt this approach was vital to support a do-no-harm and trauma-informed approach to youth researchers' engagement and to make sure their personal bandwidth and well-being were prioritized throughout the study cycle.

Senior team members provided capacity strengthening in research meetings and while youth researchers led study activities. For example, by providing guidance via Zoom's chat function during the data collection. Youth researchers noted this approach was helpful and especially supportive because they could discreetly receive direction while leading the implementation process.

Data analysis

Engaging youth researchers in completing the qualitative data analysis process was the most time-intensive task that required ongoing support and follow-up training with youth researchers. Regular check-in meetings frequently focused on reviewing analysis codebooks and live demonstrations of coding. Initiating coding with notes files before transitioning to full-

length transcripts was a helpful approach in guiding youth researchers, who were new to qualitative research activities before participating in assessment activities.

Annex

Table 2. Teacher FGD Participants

Participant Demographics	Teachers (n=21)
Gender identity	Woman (86%) Man (14%)
Age (years)	20-24 (5%) 25-29 (10%) 30-34 (10%) 35-39 (14%) 40-44 (14%) 45-49 (14%) 50-54 (10%) 55-59 (23%)
Region	Dnipro (38%) Sumy (18%) Chernihiv (14%) Kyiv (10%) Zhytomyr (10%) Rivne (5%) Volyn (5%)
Highest education level	Master's degree (85%) Bachelor's degree (5%) Diploma of Junior Scientist (10%)
Job in addition to teaching	No, and not looking (48%) No, but looking (33%) Other, official (14%) Other, informal (5%)
Education mode	Online (52%) Mixed (43%) Offline (5%)

Participant Demographics	Teachers (n=21)
Grades taught[26]	Fifth (43%) Sixth (43%) Seventh (38%) Eighth (38%) Ninth (48%) Tenth (48%) Eleventh (62%)
Courses taught[27]	Ukrainian language and literature (33%) History (29%) English (14%) Health, safety, welfare (14%) Defense of Ukraine (10%) Civic education (10%) Art (10%) Chemistry (10%) Jurisprudence (5%) Ethics (5%) Foreign literature (5%) Musical art (5%) Geography (5% Computer science (5%) Mathematics (5%)
Number students supported	15-19 (14%) 20-24 (14%) 25-29 (33%) 30-34 (19%) 45-49 (5%)

[26] Percentages reflect the proportion of teacher participants who taught each grade. Most teacher participants taught multiple grades.
[27] Percentages reflect the proportion of teacher participants who taught different courses. Several teacher participants taught multiple courses.

Participant Demographics	Teachers (n=21)
	90-94 (5%) >100 (10%)

Table 3. Student FGD Participants

Participant Demographics	Students (n=40)
Gender identity	Girl (80%) Boy (20%)
Region	Kyiv (30%) Dnipro (17%) Kirovohrad (8%) Rivne (8%) Chernihiv (5%) Zaporizhzhia (5%) Donetsk (5%) Lviv (5%) Poltava (5%) Zhytomyr (3%) Volyn (3%) Kharkiv (3%) Ivano-Frankivsk (3%)
Involvement in informal education	Yes (12%) No (63%) Missing (25%)
Involvement in extracurricular activities	Yes (43%) No (32%) Missing (25%)
Education mode	Hybrid (37%) Online (23%) Offline (15%) Missing (25%)

Participant Demographics	Students (n=40)
Employment status	No, and not looking (33%) No, but looking (17%) I can't work (20%) Other, informal (5%) Missing (25%)
Grade enrolled	Fifth (5%) Sixth (5%) Seventh (3%) Eighth (5%) Ninth (36%) Tenth (23%) Eleventh (23%)