



Recovering lost learning opportunities in Ukraine: Key education policy strategies

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Key messages

- School destructions, population displacement or school closures mean that children in Ukraine have experienced varied disruptions in their education experience. Interventions that seek to reduce the variation in student learning levels need to accompany efforts to resume learning and deliver high-quality education for all.
- Assessing learning gaps is a critical first step in designing any recovery strategy for lost learning opportunities. While a range of assessment options exist, the choice of a specific assessment measure depends on its feasibility during the war acknowledging that students' own teachers are often the best-placed to conduct skill level assessments.
- Policy and research evidence on academic strategies to address learning gaps put forward a various solutions Ukraine could introduce to recover students' lost learning opportunities. A range of practices (e.g. small group tuition, adaptive instruction) and tools (e.g. intelligent tutoring systems) can enable more differentiated learning. In all cases, curricular flexibility and fluid pathways in the education system need to accompany any targeted instruction measures.
- In the long term, a range of policy responses can enhance the effectiveness of learning recovery strategies for students in Ukraine, including ongoing monitoring and assessment of needs to allow for strategy adjustment and evolution, embedding teacher support and capacity building in learning recovery strategies, and addressing the multifaceted challenges faced by learners in Ukraine, particularly those from disadvantaged backgrounds.

Background and key issues

Russia’s war of aggression against Ukraine has shattered the functioning of the Ukrainian education system, with potentially considerable long-term negative consequences on human capital development. School destructions, population displacement or school closures mean that children in Ukraine have experienced varied disruptions in their education. While online learning platforms and the reopening of schools in some regions have enabled children to continue learning and resume formal education, gaps in the knowledge and skills of most children have likely risen. In 2019, Ukraine performed on par with its neighbours with respect to students’ learning outcomes (Angrist et al., 2022^[1]). However, the combined effects of the pandemic and of Russia’s war against Ukraine have likely translated into considerable lost learning opportunities for students in Ukraine for which the education ministry will need to carefully consider the design of strategies for learning recovery.

Violent conflict has heterogeneous impacts on education, depending on the conflict type and events, but also on the education outcomes examined (Angrist et al., 2022^[1]). In addition, given the potentially different exposure of students to school disruption, destructions and internal displacement in Ukraine, the variation in students’ opportunity to learn and resulting skills is likely to have increased. Interventions that seek to reduce the variation in student learning levels need to accompany efforts to resume learning and deliver high-quality education for all. The potentially wider variation in learners’ skills (relative to the pre-war period) requires more personalised support and adaptive learning methods.

This policy brief puts the focus on academic interventions for learning recovery (for a detailed review of learning recovery strategies, research evidence on their effectiveness and examples of their implementation on a large scale or at the country level, please see (Minea-Pic, 2023^[2]). It first examines strategies for assessing students’ skill levels and identifying potential learning losses the Ukrainian Ministry of Education could rely upon in the current context. It then focuses on a range of academic strategies the ministry can implement in the short and medium-term to help students recover lost learning opportunities, including adapting instructional strategies and pedagogies to individual needs, adapting the time of instruction to enable more efficient instruction, providing curricular flexibility and enabling fluid learning pathways within the school system. The brief concludes by putting forward a range of policy responses that can enhance the long-term effectiveness of learning recovery strategies in Ukraine.

Key strategies for assessing learning gaps

Assessing students’ skill levels is a key step for determining the learning remediation needs and thereby the most appropriate learning remediation type for students. While a range of assessment options exist (e.g. direct diagnostic assessments, surveys of parents or teachers, national or international tests) (UNESCO, 2020^[3]), the choice of a specific assessment measure will likely depend on its feasibility during the war acknowledging that students’ own teachers are often the best-placed to conduct skill level assessments.

During the pandemic, countries have relied on a range of options to assess learning needs, including: large-scale assessments (e.g. France), direct assessments performed by teachers, school-level identification of students’ in need (e.g. in the United Kingdom for the National Tutoring Programme), combined teacher-parent-student evaluations of learning needs (e.g. in France, to determine students’ participation in “learning vacations”) or parents’ own assessments (e.g. in Luxembourg, for students’ participation in Summerschools) – see (Minea-Pic, 2023^[2]) for a detailed overview of these programmes. Evidence from the implementation of programmes that relied on school-based decisions or parental assessments during the pandemic illustrates that students benefitting from the programmes may not have

always been the ones who needed them the most, particularly when they were not specifically aimed at or included concrete targets for disadvantaged students (Lord, Poet and Styles, 2022^[4]; OCDE, 2022^[5]).

While system-level skill assessment would provide the ministry with an understanding of the scale of learning gaps and of the most affected students, and thereby guide resourcing decisions to where they are most needed, classroom assessments enable teachers to personalise and adapt instruction to students' specific needs (World Bank et al., 2022^[6]). In addition, the time and resource constraints associated with the war in Ukraine may hinder the organisation of larger-scale assessments sufficiently rapidly.

In such an environment, supporting teachers in conducting local student assessments remains critical. Some countries have thus focused their efforts on building capacity to assess learning at the local level. For instance, during the pandemic, Chile designed the “Comprehensive Learning Diagnosis” (*Diagnóstico Integral de Aprendizajes – DIA*), an online formative assessment tool that schools could use on a voluntary basis that provides online or paper tests and questionnaires, results reports (at the course and school level) and guidelines for the analysis and use of the results (World Bank et al., 2022^[6]; Agencia de Calidad de la Educación, n.d.^[7]). The tool enables monitoring the learning of students at different times throughout the school year. It relies on: i) a diagnosis phase that involves providing information on the status of prior learning and performance in academic and socioemotional areas, ii) a monitoring phase and iii) an evaluation phase. It equally informs Chile's Education Quality Assurance Agency about students' performance. In the United States, the MAP growth personalised digital assessment has been used in schools (accounting for more than 20% of public schools) to assess student achievement and growth in reading, language usage, mathematics and science throughout the school year (UNESCO, 2020^[3]; NWEA, 2022^[8]). It provides teachers with evidence to inform instructional strategies and identify students in need for intervention, and education system administrators with higher-level reports. The tool is also associated with professional learning opportunities for teachers, instructional coaches and school leaders to enable them to make the most of the collected data.

The war in Ukraine may not facilitate the identification of students' learning needs evolution when both teachers and students have been displaced, and students are taught by new teachers. Teachers may be even less familiar with the previous academic progression and skill level of their students than usual, or they may even be unable to assess students directly due to the ongoing war. While diagnostic tools may provide insights on students' skill levels at time t , they are less powerful for informing how students' learning evolved relative to the pre-war period (when students are taught by different teachers) and will continue to evolve due to the war-related school disruptions (unless monitoring is done on a regular basis). In addition, once learning recovery or remediation measures are introduced, monitoring how students' skills and knowledge change matters for the continuous adjustment of measures and efficient allocation of resources to those most in need.

In such a context, further leveraging smart digital technologies may provide an innovative and cost-efficient approach to assess students' skills in time and acquire an aggregate perspective on the evolution of skills gaps and resource needs. Intelligent tutoring systems can be part of the solution allowing to combine assessment and learning remediation at the individual level, and potentially also to aggregate this data to obtain a system-level perspective of learning needs. Such tutoring systems can assess the skills gaps of students at the individual level, suggest steps to move forward and address learning gaps based on an individual diagnosis, while enabling students to work autonomously. In addition, the use of intelligent tutoring systems could also enable the ministry to more easily aggregate data on students' learning needs and skills, identify inequalities in learning outcomes and trends, and thereby adjust its learning recovery strategies to changing needs.

Implementing learning recovery strategies in the short and medium term

Policy and research evidence on academic strategies to address learning gaps put forward a range of solutions Ukraine could introduce to recover students' lost learning opportunities (see Table 1, (Minea-Pic, 2023^[2]) for a detailed review of the strategies presented in this section, evidence on their cost-effectiveness and country-level or large-scale implementation examples). A first type of learning recovery strategies thus includes adapting instructional strategies and pedagogies to individual needs, by tailoring instruction to students' needs, providing instruction in small groups (e.g. through tutoring or peer tutoring), leveraging technologies for personalised learning (e.g. through online tutoring or intelligent tutoring systems) and keeping students engaged, particularly in a context of remote learning. A second type of learning recovery strategies countries have relied upon, particularly in the context of the COVID-19 pandemic, focuses on the adaption and extension of instruction time (e.g. through longer and/or more diversified school days, summer schools), although their effectiveness varies widely by context. Providing curricular flexibility (e.g. by prioritising fundamental skills and knowledge and adapting the curriculum) and facilitating vertical transitions within the school system (e.g. by favouring conditional promotion over grade repetition or automatic promotion) can equally support learning catch-up and facilitate smooth transitions within the school system.

Table 1. Learning recovery strategies: types and examples of large-scale implementation

Type of strategy	Sub-type of strategy	Example of implementation at a large-scale
Adapt instructional strategies and pedagogies to individual needs	Tailor instruction to students' learning needs	Escuela Nueva Learning Circles – Colombia (and other countries) Teaching at the Right Level – India (and other countries)
	Provide instruction in small groups: tutoring	National Tutoring Programme – United Kingdom Reading Recovery tutoring programme – United States
	Provide instruction in small groups: peer tutoring	Peer-Assisted Learning Strategies – United States
	Leverage technologies for personalised and more accessible learning	ASSISTments intelligent tutoring system – United States Tutoring Online Programme – Italy Menttores Online Tutoring – Spain
Adapt and extend the time of instruction		Longer and more varied school day – Denmark Learning vacation – France Summerschools – Luxembourg
Provide curricular flexibility and enable fluid learning pathways within the system	Adapt the curriculum to prioritise fundamental skills and knowledge	Curriculum Prioritisation – Chile New Curriculum Framework by Cycle of Education and Adjusted Objectives of Education – Slovak Republic
	Facilitate vertical transitions across school years	Remedial instruction in upper cycle or high school – Austria

Source: (Minea-Pic, 2023^[2]).

In the immediate term, online tutoring programmes appear as a cost-effective learning recovery strategy to consider in Ukraine. Such programmes can enable students to remain engaged with learning, benefit from more personalised instruction that accounts for their specific needs and potentially build a close relationship with a tutor which might also support their socio-emotional well-being. During the pandemic, online tutoring programmes were introduced in Italy (Carlana and La Ferrara, 2021^[9]) and Spain (Gortazar, Hupkau Claudia and Roldan, 2022^[10]), and displayed positive effects on students' academic learning and aspirations (Box 1). An ongoing evaluation in the Dominican Republic, based on the online tutoring programme introduced in Italy, seeks to examine the conditions and formats under which online tutoring can be delivered at scale and supported through an online platform that could be made accessible to other countries further on (AEA RCT Registry, 2022^[11]). While the availability of volunteers for online tutoring programmes may not be always guaranteed (despite increasing initiatives from non-governmental

organisations since the start of Russia's war of aggression against Ukraine), Ukraine could also seek to connect with refugee teachers who have fled Ukraine and who may wish to continue to be engaged in the Ukrainian education system. Such online tutoring programmes could be an option for all students, but depending on cost considerations, they may also be targeted or provided in priority to specific categories of students (e.g. based on students' learning and socio-emotional needs, or time students have been out of school in case of school destructions or internal displacement).

Box 1. Online tutoring programmes: Italy and Spain

Italy: Tutoring Online Programme

The "Tutoring Online Programme" (TOP) was designed by researchers in response to school closures during the COVID-19 pandemic and targeted middle-school students struggling in Italian, English and/or mathematics (Carlana and La Ferrara, 2021^[9]). Tutors were volunteer university students who received training and support from pedagogical experts and provided tutoring for around 3 hours per week (with a median programme length of 5 weeks). The programme was proposed for free to schools and reached 530 students among the 1 059 applications. TOP improved academic outcomes, resulting in increased time devoted to homework and attendance to regular online classes, higher performance in standardised tests and teachers' assessment of learning, and increased educational aspirations. Differences in the type of digital equipment (e.g. smartphone, PC or tablet) students relied upon to access online tutoring did not translate into heterogeneity in students' outcomes, although the quality of Internet connection appeared to play some role.

An adaptation of TOP has also been implemented in the Dominican Republic, targeting disadvantaged students in public secondary schools paired with tutor volunteer students from local universities. In a second phase of the implementation of this programme by J-PAL Latin America and the Caribbean and the Ministry of Education, an evaluation seeks to examine the conditions and formats (e.g. paired vs individual tutoring, tutor profiles) for effectively delivering tutoring at large scale. The project also seeks to develop an online platform that can become available across countries (AEA RCT Registry, 2022^[11]).

Spain: Menttores

Menttores was implemented in Madrid and Catalonia towards the end of the 2020-2021 academic year, in a context where schools had already reopened Spain (Gortazar, Hupkau Claudia and Roldan, 2022^[10]). It was designed by researchers and implemented in partnership with an NGO specialised in training young teachers in schools with high shares of disadvantaged students. During an 8-week period, tutors provided three tutoring sessions of 50 minutes per week to secondary school students in groups of two. Tutors were selected through a recruitment process, were paid and benefitted from training. The programme targeted mathematics and the provision of psycho-social and emotional support. It resulted into positive effects end-of-year math grades and results in a standardised test, grade retention, self-reported effort and student educational aspirations. Internet connection issues appear to have affected the effectiveness of the tutoring intervention (e.g. for final math grade), in line with the results of TOP in Italy.

Source: (Mineia-Pic, 2023^[2])

More generally, tailored instruction strategies need to be supported to address the increased variation in skill levels Russia's war of aggression against Ukraine is likely to have triggered. Accounting for the need to address learning gaps of various degrees does not imply that the Ukrainian education system should necessarily strive to build individual pathways for each student. A range of practices (e.g. small group tuition, adaptive instruction) and tools (e.g. digital technologies) can enable

more differentiated learning (see (Minea-Pic, 2023^[2]) for a detailed overview and implementation examples of such practices). In Colombia, the Escuela Nueva Learning Circles (ENLC) seek to provide quality education for children displaced by conflict, natural emergencies or for hard-to-reach children through personalised attention. Students learn in smaller groups, benefit from socio-emotional support and from strong relations with local community institutions (Cerdan, Velez Bustillo and Colbert, 2020^[12]). The use of digital technologies can equally support personalisation of instruction, with intelligent tutoring systems (e.g. ASSISTments mathematics software) providing a promising approach for enhancing student academic outcomes. Procuring such intelligent tutoring system where possible (particularly if external aid enables the acquisition of such tools at large scale) would be a particularly effective solution for bridging learning gaps while also being able to assess students' learning needs continuously and thereby adapt strategies or approaches to changing needs.

When instruction is possible in in-person formats, face-to-face tutoring, whether as one-on-one or small-group instruction, remains one of the most effective academic interventions to reduce learning gaps between students with various skill levels – see (Nickow, Oreopoulos and Quan, 2020^[13]; Dietrichson et al., 2017^[14]; Pellegrini et al., 2021^[15]; USAID, 2020^[16]) and (Minea-Pic, 2023^[2]) for a review and implementation examples. A range of strategies can enhance the cost-effectiveness of tutoring programmes, including the use of paraprofessional tutors or the adaptation of the tutoring format (one-on-one or small group) to students' age (Nickow, Oreopoulos and Quan, 2020^[17]; Guryan et al., 2023^[18]; EEF, 2021^[19]). One recent example of large-scale tutoring programme comes from the United Kingdom. The National Tutoring Programme was introduced in response to the pandemic, for students in primary, secondary, Alternative Provision and special educational needs and disability schools. Students are expected to benefit from 15-hour tutoring packages over an academic year and tutor/pupil ratios going from 1:1 to 1:6 (Lynch et al., 2022^[20]). The programme comprises three routes and schools can access all or a combination of them: “Academic mentors” (relies on salaried staff members for tutoring), “Tuition Partners” (schools choose among preapproved tuition providers) and “School-led Tutoring” (schools can choose among existing staff or external tutors familiar with the school). Tutoring can be provided in person or online. Non-qualified teacher staff acting as tutors benefit from online training. The programme has been adapted and has evolved since the pandemic in light of its implementation challenges, with schools being granted increased autonomy in the selection of the best tutoring options for students. It has already shown positive outcomes on students' learning (Lord, Poet and Styles, 2022^[4]).

In all cases, curricular flexibility and fluid pathways in the education system need to accompany any targeted instruction measures. The Ukrainian Ministry of Education can envisage a more condensed curriculum that prioritises the key knowledge and skills all students should acquire, particularly in a context in which schools' in-person activities are likely to continue experiencing disruptions and online learning will be the norm for many students. For instance, during the pandemic, the Ministry of Education of Chile designed Curriculum Prioritisation to replace the regular curriculum for all subjects and levels of education, giving priority to curricular objectives considered as essential for the continuity of students' educational process. The implementation of Curriculum Prioritisation was extended until the end of 2022 and has been maintained and adjusted for the 2023-2025 period in response to a diagnostic review performed by the Ministry of Education. In Ukraine, adapting the curriculum necessarily implies including social and emotional skills among the fundamental skills students should continue to be developing or strengthening given the traumatic experiences many have lived due to Russia's war of aggression against Ukraine.

Beyond curricular flexibility, facilitating fluid pathways across school years is crucial to reduce dropout and maintain student engagement in learning. While Ukraine displayed a low share of grade repetition in 2018 (1.6% vs. 11.4% on average across the OECD) (OECD, 2020^[21]), grade repetition should not become an option for addressing widening learning gaps due to the war. In a similar vein, automatic promotion to the next learning level without mastering the necessary skills and knowledge is also likely ineffective, although potentially less harmful than grade repetition (UNESCO, 2020^[3]). The Ukrainian

Ministry of Education could consider options for conditional promotion as well as accompanying promotion to the next level with remedial instruction in specific subjects or areas where students experience gaps that would prevent them from keeping pace with the material at the next level. In the mid- and longer-terms, and depending on the evolution of the war, such remedial instruction activities could also be provided by adapting the time of instruction (e.g. through after-school activities or summer programmes), with careful consideration, however, for their design (Minea-Pic, 2023^[21]). In response to the pandemic, France a free “learning vacation” (*vacances apprenantes*) remediation programme that has evolved into several schemes, from open schools, to summer camps and academic success courses provided during school holidays throughout the year to consolidate learning and facilitate transitions across education levels (Ministère de l’Education Nationale et de la Jeunesse, 2022^[22]).

Introducing any such measures for reducing learning gaps triggered by Russia’s war of aggression against Ukraine requires addressing a range of challenges which are amplified by the uncertainties associated with the length and intensity of the war in the future. The unstable security situation and difficulties in ensuring access to quality Internet connection across all locations, together with access to digital devices will continue to affect the ability of the education system to plan remediation measures. In addition, difficulties persist in assessing the number of students in need for learning remediation support and the type of needs students have, given that internally displaced students may not have registered in their new place of residence (Ministry of Education and Science, 2022^[23]) and the capacity to identify struggling students or assess student needs may remain limited. Ensuring teachers are available and well-prepared (whether for online education or provision of psycho-social support) also remains a key challenge, particularly since many teachers are likely to have relocated.

Finally, while increasing donations targeting the education system, particularly in the shape of digital infrastructure and associated teacher training, may help address some of these issues, introducing effective learning recovery strategies will require fine-grained cost-benefit analyses and careful consideration of how external aid can be effectively used and channelled. Indeed, some of the most effective solutions highlighted by policy and research evidence (Minea-Pic, 2023^[21]), such as in-person tutoring or intelligent tutoring systems, remain relatively costly. The long-term availability, importance and type of external aid will therefore guide the type of strategies the ministry of education can adopt to bridge learning gaps between students and help them recover lost learning opportunities. At the same time, there is a range of options to consider for bridging students learning gaps (Minea-Pic, 2023^[21]), and a mix of regulatory, pedagogical, and technology-based solutions can be envisioned in the short and medium terms.

Enhancing the long-term effectiveness of strategies to bridge students’ learning gaps

In the long-term, a range of policy responses can enhance the effectiveness of learning recovery strategies for students in Ukraine. The pandemic showed that the introduction of effective remediation measures can support learning recovery and bridging learning gaps. Russia’s ongoing war of aggression against Ukraine and school disruptions translate into more considerable time, resources and effort requirements to recover lost learning opportunities and bridge learning gaps. In addition, a large number of students from Ukraine have sought refuge abroad but might return to Ukraine once the war is over. The resulting variation in students’ needs, experiences and type of education they may have received during the war will likely require a longer-term reflection on the adaptation and objectives of the education system. In this context, any learning recovery strategy should be designed with a long-term perspective in mind and embedded into the longer-term vision of the education system (UNESCO, 2020^[3]).

Successful learning recovery strategies ultimately depend on accurate assessments of students’ learning needs. Such assessments are crucial both at the onset of strategy design but also as strategies

are unfolded and students' learning evolves, to be able to adjust approaches and enhance strategy delivery (OECD, 2021^[24]). Ongoing evidence gathering and data collections become crucial in the long-term to deliver feedback on the strategies and facilitate adjustments as conditions change. Assessment components should be embedded in the design of strategies for learning recovery to diagnose learning needs and assess the impact of interventions on student progress. In addition, developing data tracking systems can help better identify struggling students and students at risk of disengaging, as well as better monitor learning recovery interventions and better tailor them to students' needs.

The implementation of any recovery strategy also requires assessing resource needs. While some strategies may be less resource-intensive, most learning recovery strategies will require careful consideration to the physical and digital infrastructure needs, capacity building across the education system and financial investments required (UNESCO, 2020^[3]). School destructions due to Russia's war of aggression against Ukraine will also require further reflection on the structure and the organisation of the school network. In addition, to effectively bridge all students learning gaps, careful consideration needs to be given to how resources are allocated, particularly considering the widening variation in students' skills. School funding policies (e.g. through monetary or in-kind resource allocations) can equally promote more equitable learning opportunities and support learning recovery for all students (OECD, 2021^[25]).

Teacher quality is a powerful predictor of student achievement and teachers play a key role in students' socio-emotional development. Any strategies that seek to bridge learning gaps should put teachers, their preparedness and well-being at their core. The education ministry needs to provide guidance, resources and professional learning opportunities to teachers to enable the implementation and monitoring of strategies for learning recovery, particularly when the latter involve novel teaching approaches, a stronger focus on specific skills (e.g., social-emotional skills or psycho-social support) or require substantial adjustments to differentiate instruction. Digital technologies can also be leveraged to support teachers' access to and engagement in professional learning, and recognise teachers' skills acquired while teaching on line or in hybrid formats during the war (World Bank, 2022^[26]; Minea-Pic, 2020^[27]). Teacher communities, online courses or blended professional development activities can thus be part of the solution for supporting teachers in the implementation of learning recovery strategies.

To be effective, learning recovery strategies also need to account for the complex array of challenges faced by learners when continuing or resuming learning. Learners in Ukraine likely face multifaceted challenges, due to prolonged effects of school disruptions, socio-emotional traumatic experience of the war, as well as financial and material hardship that come as a result, and that have aggravated the situation of learners from disadvantaged backgrounds. Learning recovery strategies need to target a wider array of skills and outcomes than pure academic achievement and include a socio-emotional learning component to address the different types of challenges and disadvantages faced by learners through complementary measures. Coordination with and involvement of a range of stakeholders (parents, local communities, social services, etc.) and across governance levels are equally critical to enable flexible design and implementation of such strategies, and the development of bottom-up solutions better tailored to students' needs (OECD, 2021^[24]; OECD, 2018^[28]).

What are the key considerations for policy makers?

- Embed learning recovery strategies into the longer-term goals or vision of the education system.
- Ensure ongoing monitoring and assessment of needs, together with evaluation and adjustment of learning recovery strategies.
- Support tailored instruction strategies to address the likely increased variation in skill levels due to war.
- Assess the resources needs and consider the resource allocation strategies that are most effective for bridging students' learning gaps.
- Embed teacher support and capacity building in learning recovery strategies.
- Address the multifaceted challenges faced by learners, particularly those from disadvantaged backgrounds.

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