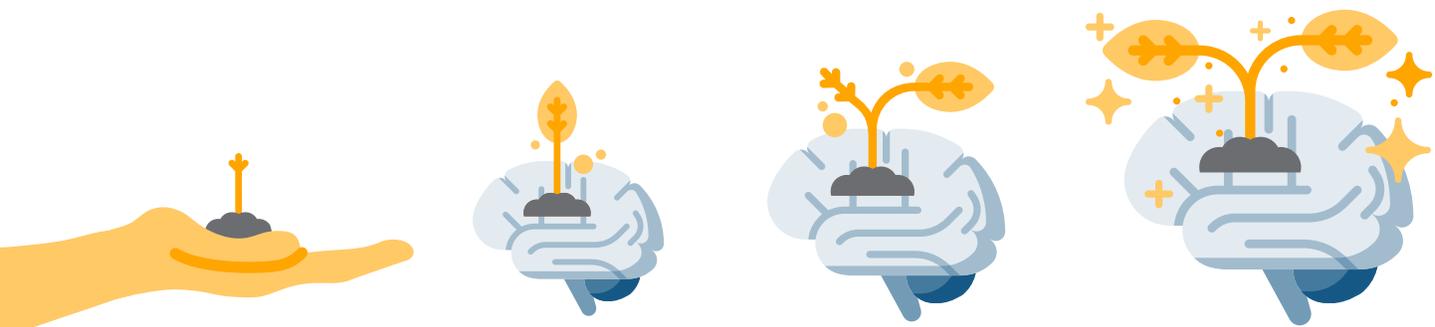# ACCELERATING LEARNING RECOVERY

FEBRUARY 2022

Taking urgent action to accelerate the recovery of learning loss is an essential element of national education responses to the COVID-19 pandemic. It is critical to ensure that this generation of students does not suffer a disadvantage in comparison to past and future generations. A coherent Learning Recovery Program at the system and school levels can help countries achieve this goal. The starting point should be to assess students' learning levels to understand the particular content areas where there are weaknesses. Next, education systems should rely on three flexible policy levers. The first lever that can be used to ensure students recover essential building blocks for learning is consolidating the curriculum across and within subjects to prioritize foundational skills and knowledge. The second lever is to increase the efficiency of instruction. The extent of learning loss is likely to vary from student to student, which is why targeting instruction to match students' learning levels will be more important than ever. Structured pedagogy is another instructional approach that has consistently led to improved learning outcomes. Tutoring programs and self-guided learning programs have also been found to improve student learning in various contexts. Finally, the third lever is extending instructional time, such as by offering summer school. Extending instructional time is effective if combined with approaches that align levels of instruction with the goals and needs of students.

Why Countries Should Prioritize Accelerating Learning Recovery

Learning Recovery Programs can help tackle the learning losses caused by extended school closures, disruptions in the academic calendar, and uneven access to remote learning opportunities. There is mounting global evidence of large learning losses precipitated by the COVID-19 pandemic, summarized in a recent World Bank, UNICEF and UNESCO report. Evidence from Brazil, rural Pakistan, rural India, and South Africa, among others, shows significant losses in math and reading. Even in countries like the Netherlands and Switzerland, where schools transitioned swiftly to online learning during school closures and student access to digital technologies is high, learning losses were substantial (Engzell, Frey and Verhagen 2021; Tomasik, Helbling and Moser 2021). World Bank simulations show that the global rate of Learning Poverty—defined as the percentage of children who are unable to read and understand a simple text by age 10—may increase to as much as 70%, compared to 53% pre-pandemic (Azevedo, Rogers, Cloutier et al. 2021).

Beyond learning, the pandemic precipitated other negative impacts. There are reports of rising dropout rates in many countries, an issue that disproportionately affects girls and vulnerable populations; up to 24 million children were predicted to drop out as a result of the COVID-19 pandemic (UNESCO 2020a). Additionally, the global prevalence of anxiety and depression symptoms among children and adolescents has soared because of social isolation, school closures, family stress and other disruptions (Racine et al., 2021). Finally, learning losses due to school shutdowns will also have economic consequences if not treated: the impact could amount to as much as $17 trillion in present value in lost future earnings (Azevedo, Rogers, Cloutier et al. 2021).

It is our duty to ensure that this cohort of students gets an education equivalent to that received by previous generations, despite lost time. To ensure this cohort of students recovers the learning lost during the pandemic, countries should prioritize accelerated education approaches to get all students to grade-level proficiency. We propose countries adopt Learning Recovery Programs, consisting of a contextually suitable mix of evidence-based policies to recover learning. Three policy levers can be leveraged to accelerate learning recovery: consolidating the curriculum, increasing the efficiency of instruction and expanding instruction time. The policy mix should be developed based on data from learning assessments that point to current learning levels and knowledge gaps, as well as the capacity of the education system. This note offers a brief overview of what such policies could look like and points to country examples from around the world.

Learning Recovery Programs

Measuring Learning

As students return to school, countries should measure student learning levels. Learning assessment — gathering and evaluating information on what students understand, know, and can do — will help educators identify the learning needs of their students and help policymakers target resources within and across schools. Measuring learning will help policymakers understand which groups might require greater attention, as the size of the losses varies across grades, subjects, social groups, and education systems. It will help identify any essential building blocks to future learning students have yet to master. It can create a baseline upon which recovery efforts can build and be monitored against. Most importantly, understanding students' learning levels will allow teachers to adjust instruction to meet students' needs. Strategies for learning recovery like targeted instruction and tutoring build on adapting instruction to students' level; to do so, teachers must

understand what students know, and what they have yet to learn.

The state of São Paulo in Brazil has continuously measured student learning, including learning losses incurred during school closures, and are using the data to help guide recovery. In Indonesia, the national assessment agency provides teachers with diagnostic assessment tools in local language for core subjects and guidelines to score and interpret results. Once countries make use of learning assessments to diagnose student learning levels and needs, they can define and implement policy responses to accelerate learning recovery. The three policy levers below constitute a **menu of options** that countries can select from and adapt according to their specific context.

Learn more about assessment in the policy note *Learning Assessment and High-Stakes Exams*.

Policy Lever 1: Consolidating the Curriculum

The first policy lever of Learning Recovery Programs involves consolidating and adjusting the curriculum to prioritize the most important skills and knowledge that students must master to succeed in their academic trajectories. Consolidating the curriculum involves prioritizing two types of content: foundational learning — key skills in reading and math that are the daily gateway to subsequent learning in an expanding number of subjects— and antecedents or prerequisites, content that must be mastered prior to learning subsequent material in the learning series. Since the onset of COVID, several countries have adopted curricular adjustments. South Africa's three-year Curricular Recovery Plan is implementing adjusted Annual Teaching Plans based on a trimmed curriculum, a focus on learning losses from previous grades, and more frequent diagnostic assessment. Guyana also has unveiled a four-year Consolidated Curriculum for grades 1-9 that streamlines curricular content. Chile's Prioritized Curriculum, introduced in 2020, makes available adjusted didactic guides and learning objectives in every subject and grade, though it does not replace the official curriculum; it is valid through the end of 2022.
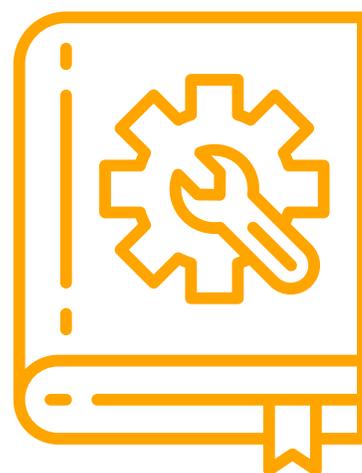
Policy Lever 2: Increasing the Efficiency of Instruction

Support Teacher Capacity

The pandemic has caused stress and anxiety for all, but teachers more than most. As education systems pivoted to remote learning, many teachers experienced increased demands and heightened job complexity. As schools have opened, teachers are working with children suffering from mental health issues and children who are far behind in learning. Teachers need support from education systems and school leaders so that they can support their students and accelerate learning. Supporting teacher capacity involves supporting teachers (1) instructionally, (2) technologically, and (3) supporting their resilience.

First, teachers will need **instructional support** to implement strategies such as structured pedagogy and targeted instruction, including technical guidance for assessing student learning levels. Offering high-quality professional
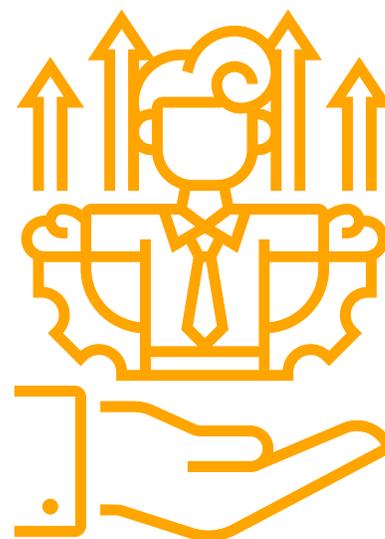
development opportunities that provide continous support to teachers is more important than ever. A program featuring frequent monitoring and coaching support to teachers improved student outcomes in the Gambia. Additionally, as schools closed globally and education systems shifted to remote education, teachers' lack of access to technology and technological skills became a barrier to effective remote learning. Hybrid learning is here to stay to enhance education delivery and prepare systems for future shocks. To support teachers **technologically**, digital skills training is essential. For example, in addition to ensuring students and teachers have access to hardware and software, Plan Ceibal in Uruguay has helped teachers build digital skills. In Turkey, Kenya and South Africa, platforms like Whatsapp and Facebook have been used to facilitate teacher peer support. Finally, education systems and schools can support teacher **resilience** by monitoring their wellbeing, limiting burnout, providing opportunities for peer learning and fostering intrinsic motivation. Stir Education partners with governments to boost teacher motivation in India and Uganda, through peer networks, action and feedback, and reflection. HealthyMinds@Work in Mexico is a pilot program that helps teachers improve their psycho-social well-being.

Explore the *Preparing and Supporting Teachers* note for more examples of how to support teachers.

Utilize Targeted Instruction

The shock of the COVID-19 pandemic has led to huge learning losses, but the impact has been heterogenous across and within countries and schools. Even within a classroom, different circumstances and personal characteristics imply widely different learning levels. Therefore, addressing the needs of every child is critical for effective learning. One approach to catering to individual students' proficiency levels is targeted instruction, which groups children by their level of proficiency, not by their age or grade. This approach includes specific activities and instruction designed to move students to the next level, with close tracking of children's progress. While there are a variety of ways to implement targeted instruction, the approach typically starts with the administration of a brief assessment of reading or mathematics ability. Then, in a dedicated period of the school day, students move from grade-based classrooms to classrooms based on level, as determined by the diagnostic assessment. In these level-based classrooms, trained volunteers or schoolteachers deliver specialized instruction designed to help students quickly advance from level to level. In India, in 50 days of focused teaching by lightly trained volunteers, this approach raised achievement levels significantly for students in grades 3 to 5 (Banerjee et al. 2016). Similar positive results were achieved using this approach under Ghana's Teacher Community Assistant Initiative (Lucas, Beg, and Fitzpatrick 2018).

Several countries have adopted targeted instruction to accelerate learning recovery. Brazil is currently piloting targeted instruction that is implemented in four, 2-week camps of 1.5 hours per day, with plans to make this intervention available to all schools with a vulnerable student population of least 70%. Uzbekistan is also rolling out remedial programs with a focus on grouping students according to learning levels. Other countries have incorporated principles of targeted instruction into new pedagogical approaches. In Cambodia, the Ministry of Education and local NGO partners developed a program that dedicates twelve hours per month to addressing learning gaps through targeted exercises. They developed "remedial learning packages" that begin with a diagnostic assessment of knowledge gaps around 5 core competencies in Khmer and Math each, and then guide teachers to group students by proficiency (based on the assessment's results) and implement active student exercises at different levels of difficulty (KAPE 2021). In Chile, the Ministry of Education launched a national program that helps schools implement a pedagogical approach that promotes mastery of key prior concepts needed for grade-level learning. For each Learning Objective, the three-part methodology consists of a catch-up or 'leveling' phase, a phase where new content is learned, and a formative assessment; the results determine if the class continues learning or returns to the catch-up phase (Ministerio de Educación de Chile 2021).

Establish Structured Pedagogy Programs

Structured pedagogy programs are another approach that has proven effective at improving foundational skills levels in different contexts. Structured pedagogy is broadly defined as a coherent package of evidence-based content that teachers can cover to support learning; key components of these programs involve: (1) high-quality teaching and learning materials, including scripted lesson plans, student activity books and textbooks; (2) teacher professional development, including continuous training and coaching; and (3) ongoing assessments of students to generate feedback loops. An increasing number of countries have adopted structured pedagogy in early grades and many of them have demonstrated encouragingly positive effects on student performance (Kim, Lee and Zuilkowski, 2020; Graham and Kelly 2020; Fazzio et al., 2021). Kenya's Tusome Early Grade Reading Activity, which combines teacher professional development and coach visits; literacy textbooks given on a 1:1 student-to-textbook ration; and structured teacher guides, offers several lessons for countries seeking to implement such programs.

Provide Self-Guided Learning Opportunities, Including Computer-Assisted Instruction

Similar to targeted instruction, self-guided learning programs enable students to progress incrementally towards mastery of foundational skills. These activities, which can be used with limited teacher input and guidance, can be pencil-and-paper based, or in systems where the adequate technology is available in schools or homes, remediation can occur through computer-assisted instruction. Computer-assisted instruction can illustrate a concept through interactive animation, sound, and demonstration, followed by opportunities for students to complete tasks and solve problems at their own pace while providing immediate feedback. Adaptive software programs assess students, assign practice of particular skills, and monitor student progress. Students can work asynchronously and at their own pace, which allows more flexibility. This approach operationalizes targeted instruction in a cost-effective way and can be implemented during the regular school day or after school. Examples from India and Uruguay show that adaptive computer-assisted instruction can increase learning, with evidence of positive impacts that were larger for students from disadvantaged backgrounds (Muralidharan et al. 2018; Perera & Aboal 2019). Computer-assisted instruction can be used in teacher-led classrooms, helping them tailor instruction to students' learning needs, and can also be used remotely. In Ecuador, a World Bank-funded project implemented an adaptive, computer-assisted remedial program in 2021 reaching almost 6,000 first-year students in technical institutes. Preliminary results from this remote program showed that proficiency in key math concepts increased from 25% to 69% after 16 weeks (Angel-Urdinola, forthcoming).

In Bangladesh, a paper-and-pencil self-guided learning program was found to significantly improve students' mathematical abilities. The program, which uses the Kumon method of learning, assigns each student to an initial level based on their performance on a diagnostic test. Instructors then give students a series of worksheets of gradually increasing difficulty, adjusting the worksheets based on each student's progress. The program was designed to ensure that each student works at the level that is appropriate for their individual skills, advancing and learning new concepts in small steps through hints and examples (Sawada et al. 2020). In Jordan, the blended 'Learning Bridges' program promotes learning recovery by distributing printed, self-paced activity sheets weekly to students in grades 4-9. They contain cross-curricular exercises from that week's curriculum, and QR codes through which students can select media resources for areas in which they need to build understanding from the previous school year (UNICEF Jordan 2021).

Establish Small Group Tutoring Programs

Strong evidence demonstrates that tutoring can improve student achievement significantly, especially among low-achieving students, but the efficacy of this approach depends on group size and the frequency of sessions. Therefore, scaling up tutoring programs can be a challenge. High-dosage tutoring, defined as groups of six or fewer students who meet at least three times per week (equivalent to 50 hours or more over 36 weeks), has been found to produce substantial increases in test scores (Fryer, 2017). Some evidence shows that the most successful tutoring programs happen during the school day, and when students remain with the same tutor throughout the year (Education Endowment Foundation 2018a). One-to-one tutoring can also increase achievement, but it is significantly more costly. Tutors can be college students or even high school students (for the lower grades) who receive training to follow a structured tutoring program.

Overall, the Global Education Recovery Tracker estimates that 1 in 3 countries have used tutoring to support remote learning since the beginning of the pandemic. In 2020 the United Kingdom launched the National Tutoring Program, which offers high-quality tutoring services to students in public primary and secondary schools. Subsidized or free tutoring is offered through both contracted service providers (tuition partners) and individuals (academic mentors) to provide additional instruction in six subject areas. Teachers and school leaders decide which approach best fits their needs, which partners with whom to work, and which students will benefit most from tutoring. In Latin America, two countries have leveraged their university community for tutoring. In Chile's national 'Tutors for Chile' program, students pursuing teaching degrees can complete their teaching practicums virtually by tutoring small groups of students who need extra support (Ministerio de Educación de Chile, 2020). In the Dominican Republic, J-PAL is partnering with the Ministry of Education to pilot an online tutoring program that pairs high school students from disadvantaged backgrounds with volunteer university students to receive personalized academic support through a secure platform (JPAL 2021). This is an adaptation of Italy's Tutoring Online Program (TOP), implemented in 2020, that had positive effects on academic performance (Carlana & La Ferrara, 2021). Finally, telementoring using phone calls and SMS to students and parents has emerged as a promising, low-cost alternative to virtual or in-person tutoring. Such low-tech interventions have boosted student learning outcomes in Botswana and Bangladesh (Angrist, Matsheng & Bergman, 2021; Hassan, Islam, Siddique & Wong 2021).

Policy Lever 3: Extending Instruction Time

Pre-pandemic literature shows that increasing the time spent on instruction can significantly improve learning outcomes (Cerdan-Infantes and Vermeersch 2007; Andersen et al. 2016; Hincapie 2016; Lavy 2020). Increasing instructional time can be achieved by extending the school day, week or year (see Policy Note on Restructuring the Academic Calendar).

Holding classes during the summer is one approach to providing more instructional time for remediation, and an opportunity to implement targeted approaches such as targeted instruction and small group tutoring. While summer school is a fairly common intervention, it may need to be expanded to more students due to COVID-19 disruptions, as some countries have done (Perry 2020). In the Philippines, summer schooling was offered in 2020 to students who had received a grade lower than 75% in the previous school year (UNESCO 2020b). In Madagascar, the government scaled up in 2020 an existing two-month summer 'catch-up' program for students who reintegrate into school after having left the system and is collaborating with UNICEF to integrate targeted instruction into the program (UNICEF Madagascar 2020; Angrist et al. 2021). In 2021 the United States launched the Summer Learning & Enrichment Collaborative, which provides $1.2B for states to use on educational summer programming.

Summer school programs are associated with learning gains when they are intensive, well-resourced, involve small group instruction by trained and experienced teachers, and focus on academic content (in contrast to recreational or extracurricular activities). One risk area for summer school programs is ensuring regular attendance, which is more difficult owing to the voluntary nature of summer school.

Another approach to extending instruction time involves making changes to the academic calendar. Since 2020, Kenya is implementing a two-year, accelerated "crash program" designed to help students catch up without having to repeat prior classes—adding an additional fourth term to the usual three terms per school year by shortening holidays and expanding learning time within terms. The normal school calendar will resume in 2023. Finally, Mexico extended its 2021-22 school year to include 10 additional days of school.

Useful Resources

Targeted Instruction

- Teaching at the Right Level: Strengthening Foundational Skills to Accelerate Learning
- Aligning Levels of Instruction with Goals and the Needs of Students (ALIGNS): Varied Approaches, Common Principles
- School Practices to Address Student Learning Loss

Structured Pedagogy

- Structured pedagogy: For real-time equitable improvements in learning outcomes
- Series of How-To Guides on Structured Pedagogy
- Effectiveness of teachers' guides in the Global South
- Identifying the essential ingredients to literacy and numeracy improvement: Teacher professional development and coaching, student textbooks, and structured teachers' guides

Small Group Tutoring

- Evidence summary
- Apart but Connected: Online Tutoring and Student Outcomes during the COVID-19 Pandemic

Self-Guided Learning Programs, Including Computer-Assisted Instruction

- Fighting the Learning Crisis in Developing Countries: A Randomized Experiment of Self-Learning at the Right Level
- Disrupting Education? Experimental Evidence on Technology-Aided Instruction in India

Summer School

- Summer school toolkit

References

Andersen, Simon Calmar, Maria Knoth Humlum and Anne Brink Nandrup. (2016). Increasing instruction time in school does increase learning. Proceedings of the National Academy of Sciences of the United States of America,113(27): 7481-7484. https://www.pnas.org/content/113/27/7481

Angrist, Noam, et al. (2021). Building back better to avert a learning catastrophe: estimating learning loss from COVID-19 school shutdowns in Africa and facilitating short-term and long-term learning recovery. International Journal of Educational Development, 84. https://www.sciencedirect.com/science/article/pii/S073805932100050X#bib0025

Asian Development Bank. (2021). Learning and earning losses from COVID-19 school closures in developing Asia: special topic of the Asian Development Outlook 2021. Asian Development Bank. https://www.adb.org/sites/default/files/publication/692111/ado2021-special-topic.pdf

Azevedo, João Pedro, Amer Hasan, Diana Goldemberg, Syedah Aroob Iqbal, and Koen Geven. (2020). Simulating the Potential Impacts of COVID-19 School Closures on Schooling and Learning Outcomes: A Set of Global Estimates. The World Bank. https://pubdocs.worldbank.org/en/798061592482682799/covid-and-education-June17-r6.pdf

Banerjee, Abhijit, Rukmini Banerji, James Berry, Esther Duflo, Harini Kannan, Shobhini Mukherji, Marc Shotland, and Michael Walton. (2016). Mainstreaming an Effective Intervention: Evidence from Randomized Evaluations of "Teaching at the Right Level" in India. NBER Working Paper 22746. National Bureau of Economic Research. https://www.nber.org/system/files/working_papers/w22746/w22746.pdf

Benton, Tami D., Rhonda C. Boyd and Wanjiku F.M. Njoroge. (2021). Addressing the global crisis of child and adolescent mental health. JAMA Pediatrics. https://jamanetwork.com/journals/jamapediatrics/fullarticle/2782801

Brophy, Jere. (2006). Grade Repetition. International Institute for Educational Planning. https://unesdoc.unesco.org/ark:/48223/pf0000152038

Carlana, Michela, and Eliana La Ferrara. (2021). Apart but connected: online tutoring and student outcomes during the COVID-19 pandemic. Annenberg Institute at Brown University EdWorkingPaper 21-350. https://www.edworkingpapers.com/sites/default/files/ai21-350.pdf

Cerdan-Infantes, Pedro, and Christel Vermeersch. (2007). More time is better: An evaluation of the full-time school program in Uruguay. World Bank Policy Research Working Paper 4167. World Bank. https://documents1.worldbank.org/curated/en/814001468124480715/pdf/wps4167.pdf

Dahir, Abdi Latif. (2020, August 5). Kenya's unusual solution to the school problem: Cancel the school year and start over. New York Times. https://www.nytimes.com/2020/08/05/world/africa/Kenya-cancels-school-year-coronavirus.html

Education Endowment Foundation. (2018a). Repeating a Year. Last modified August 29, 2018. https://educationendowmentfoundation.org.uk/evidence-summaries/teaching-learning-toolkit/repeating-a-year

Education Endowment Foundation (2018b). Small Group Tuition. Last modified November 13, 2018. https://educationendowmentfoundation.org.uk/evidence-summaries/teaching-learning-toolkit/small-group-tuition

Engzell, Per, Arun Frey, and Mark D. Verhagen. (2021). Learning loss due to school closures during the COVID-19 pandemic. Proceedings of the National Academy of Sciences of the United States of America, 118(17). https://www.pnas.org/content/118/17/e2022376118

Fryer, Roland Gerhard. 2017. "Chapter 2 - The Production of Human Capital in Developed Countries: Evidence From 196 Randomized Field Experiments." In Handbook of Economic Field Experiments, edited by Abhijit Vinayak Banerjee and Esther Duflo, 2:95−322. Handbook of Economic Field Experiments. North-Holland. https://doi.org/10.1016/bs.hefe.2016.08.006.

Global Education Evidence Advisory Panel. (2020). Cost-Effective Approaches to Improve Global Learning: What Does Recent Evidence Tell Us Are 'Smart Buys' for Improving Learning in Low- and Middle-Income Countries? World Bank and UK Foreign, Commonwealth, and Development Office. https://www.worldbank.org/en/topic/teachingandlearning/publication/cost-effective-approaches-to-improve-global-learning.

Hincapie, Diana. (2016). Do longer school days improve student achievement? Evidence from Colombia. IDB Working Paper Series No. IDB-WP-679. Inter-American Development Bank. https://publications.iadb.org/publications/english/document/Do-Longer-School-Days-Improve-Student-Achievement-Evidence-from-Colombia.pdf

Isbell, Tomas. (2020, July 22). Access to remote-education tools unequal in Kenya; radio best way to reach out. AfroBarometer Dispatch, 376. https://afrobarometer.org/sites/default/files/publications/Dispatches/ab_r8_dispatchno376_barriers_to_elearning_in_kenya.pdf

JPAL. (2021). Tutoring Online Project in the Dominican Republic. Abdul Latif Jameel Poverty Action Lab. https://www.povertyactionlab.org/initiative-project/tutoring-online-project-dominican-republic

KAPE. (2021). Work with MoEYS to build an effective response to support Cambodian student challenges in learning during the COVID-19 emergency. KAPE Cambodia. http://www.kapekh.org/en/home/10/?news=work-with-moeys-to-build-an-effective-response-to-support-cambodian-students-challenges-in-learning-during-the-covid-19-emergency

K24 TV. (2020, November 17). Kenya's education stakeholders worried about the 'crash' program in new calendar [Video]. YouTube. https://www.youtube.com/watch?app=desktop&v=2YyXYwjRLzw

Lavy, Victor. (2019). Expanding school resources and increasing time on task: effects on students' academic and noncognitive outcomes. Journal of the European Economic Association, 18(1): 232-265. https://academic.oup.com/jeea/article-abstract/18/1/232/5307899

Lucas, Adrienne M., Sabrin Beg, and Anne Fitzpatrick. (2018). The Importance of Management Support for Teacher-Led Targeted Instruction in Ghana. Innovations for Poverty Action. https://www.poverty-action.org/study/importance-management-support-teacher-led-targeted-instruction-ghana

Mariano, Louis T., Paco Martorell, and Tiffany Berglund (2018). The Effects of Grade Retention on High School Outcomes: Evidence from New York City Schools. Working paper. RAND Corporation. https://www.rand.org/pubs/working_papers/WR1259.html

Ministerio de Educación de Chile. (2020, July 9). Red Tutores para Chile. Ministerio de Educación de Chile. https://www.mineduc.cl/red-tutores-para-chile/

Ministerio de Educación de Chile. (2021). Escuelas arriba: Orientaciones pedagógicas programa Escuelas Arriba 2021. División Educación General, Ministerio de Educación de Chile. https://escuelasarriba.mineduc.cl/wp-content/uploads/sites/125/2021/03/Orientaciones-pedagogicas-EA-0203.pdf

Muralidharan, Karthik, Abhijeet Singh and Alejandro J. Ganimian. (2018). Disrupting education? Experimental evidence on technology-aided instruction in India. American Economic Review 109(4), 1426-1460. https://econweb.ucsd.edu/~kamurali/papers/Published%20Articles/Disrupting_education_AER.pdf

Muyoki, Tendekai, Molly Curtiss Wyss, and Jenny Perlman Robinson (2021). A year later: reflections on learning, adapting, and scaling education interventions during COVID-19. Brookings Institution. https://www.brookings.edu/blog/education-plus-development/2021/04/02/a-year-later-reflections-on-learning-adapting-and-scaling-education-interventions-during-covid-19/

Nabwile, Tracy. (2020, November 17). Learners to undertake crash programs starting January 2021. Kenyan News. https://kenyannews.co.ke/news/learners-to-undertake-crash-programs-starting-january-2021/

Peixoto, Francisco, Vera Monteiro, Lourdes Mata, Cristina Sanches, Joana Pipa, and Leandro S. Almeida (2016). "'To Be or Not to Be Retained … That's the Question!' Retention, Self-esteem, Self-concept, Achievement Goals, and Grades." Frontiers in Psychology, 7: 1550. https://doi.org/10.3389/fpsyg.2016.01550

Perera, Marcelo and Diego Aboal. (2019). The impact of a mathematics computer-assisted learning platform on students' mathematics test scores. UNU-MERIT Working Paper Series NO. 2019-007. United Nations University and Maastricht University. https://ideas.repec.org/p/unm/unumer/2019007.html

Perry, Andre. (2020, April 28). Every student needs summer school this year to combat coronavirus learning loss. Hechinger Report. https://hechingerreport.org/every-student-needs-summer-school-this-year-to-combat-coronavirus-learning-loss

Racine, N., Brae Ann McArthur, and Jessica E. Cooke. (2021). Global prevalence of depressive and anxiety symptoms of children and adolescents during COVID-19: A meta-analysis. JAMA Pediatrics. https://jamanetwork.com/journals/jamapediatrics/fullarticle/2782796

Sawada, Yasuyuki, Minhaj Mahmud, Mai Seki, An Le, and Hikaru Kawarazaki. (2020). Fighting the learning crisis in developing countries: A randomized experiment of self-learning at the right level. Working paper, SSRN. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3471021

Tomasik, Martin J., Laura A. Helbling and Urs Moser. (2020). Education gains of in-person vs. distance learning in primary and secondary schools: A natural experiment during the COVID-19 pandemic school closures is Switzerland. International Journal of Psychology, 56(4): 566-676. https://onlinelibrary.wiley.com/doi/10.1002/ijop.12728

UNESCO. (2020a). UN Secretary-Genreal warns of education catastrophe, pointing to UNESCO estimate of 24 million learners at risk of dropping out. UNESCO Press Release No. 2020-73. https://en.unesco.org/news/secretary-general-warns-education-catastrophe-pointing-unesco-estimate-24-million-learners-risk

UNESCO. (2020b). COVID-19 response – remediation: helping students catch up on lost learning, with a focus on closing equity gaps. UNESCO COVID-19 Global Education Coalition. https://en.unesco.org/sites/default/files/unesco-covid-19-response-toolkit-remediation.pdf

UNESCO. (2021). UNESCO COVID-19 Education response: Education sector issue notes. Issue Note no. 7.4, June 2021. https://unesdoc.unesco.org/ark:/48223/pf0000377841

UNESCO, UNICEF and World Bank (2020). What Have We Learnt? : Overview of Findings from a Survey of Ministries of Education on National Responses to COVID-19. UNESCO, UNICEF, World Bank. https://openknowledge.worldbank.org/handle/10986/34700

UNICEF (2021). COVID-19 and school closures: one year of education disruptions. UNICEF. https://data.unicef.org/resources/one-year-of-covid-19-and-school-closures/

UNICEF Jordan (2021). UNICEF Education: Reimagine Education Case Study – Jordan. UNICEF Jordan Country Office. https://www.unicef.org/media/93806/file/Recovering%20and%20accelerating%20learning%20for%201%20million%20children%20in%20Grades%204%20to%209%20through%20the%20Learning%20Bridges%20Programme.pdf

UNICEF Madagascar (2020). Humanitarian Situation Report No. 4. UNICEF Madagascar Country Office. https://reliefweb.int/sites/reliefweb.int/files/resources/UNICEF%20Madagascar%20Country%20Office%20Humanitarian%20Situation%20Report%20No.%204%20-%201%20January-31%20December%202020.pdf

Valbuena, Javier, Mauro Mediavilla, Álvaro Choi, and María Gil. (2020). "Effects of Grade Retention Policies: A Literature Review of Empirical Studies Applying Causal Inference." Journal of Economic Surveys 35(2): 408–51. https://onlinelibrary.wiley.com/doi/10.1111/joes.12406