ACCELERATING LEARNING RECOVERY

Taking urgent action to accelerate the recovery of learning loss is an essential element of national COVID-19 response education strategies. It is critical to ensure that this generation of students does not suffer a disadvantage in comparison to past and future generations. There is a large number of policy options at the system and school levels to achieve this goal. Given that the extent of learning loss is likely to vary across individual students, teaching at the right level will be more important than ever to help students catch up to grade-level standards. Tutoring programs, individualized self-learning programs, and computer-assisted instruction have also been found to improve student learning in various contexts, although countries will face the challenge of implementing them at scale. Extending instructional time, such as by offering summer school, can be effective if combined with approaches that align levels of instruction with goals and needs of students. Grade retention by itself has limited effectiveness as a remediation strategy unless combined with other targeted interventions.
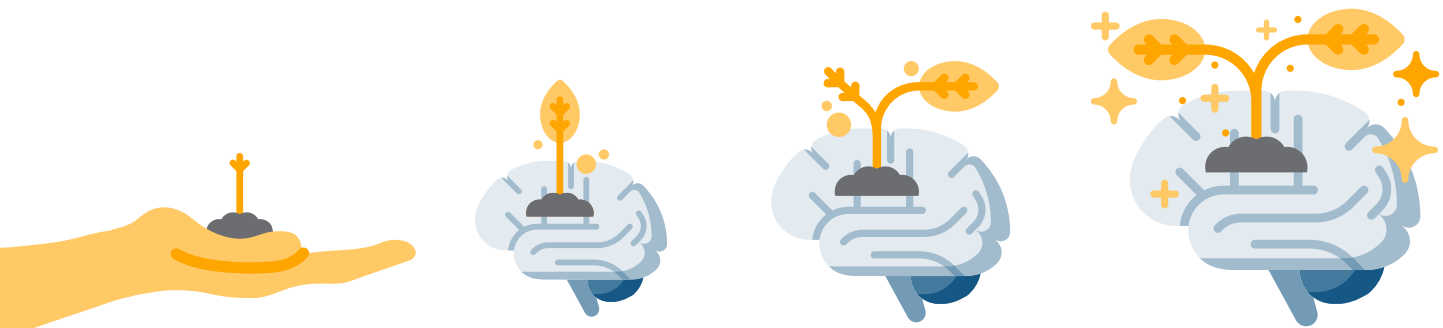
Why Countries Should Prioritize Accelerating Learning Recovery

Remedial or accelerated education services can help tackle the learning losses caused by extended school closures, disruptions in the academic calendar, and uneven access to remote learning opportunities (Azevedo et al. 2020). There is mounting global evidence of large learning losses precipitated by the COVID-19 pandemic, summarized in our Policy Note on School Reopening. For example, low- and middle-income countries in Asia had lost an estimated 29% of a year's worth of learning by March 2021 (Asian Development Bank 2021). A study of five sub-Saharan African countries which modeled short-term learning losses in oral reading fluency during COVID-19 estimated a loss equivalent to half

a year to over one year (Angrist et al. 2021). 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 Verhafgen 2020; Tomasik, Helbling and Moser 2021). Overall, the World Bank estimates 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—increased from about 53% to approximately 63% since the beginning of the pandemic.

In addition to these effects on learning, the pandemic also 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 as a result of social isolation, school closures, family stress and other disruptions (Racine et al., 2021), which has prompted school systems to expand psychosocial supports and prioritize socioemotional skills development. Finally, learning losses due to school shutdowns will also have economic consequences if not treated: early predictions from 2020 estimated that a five-month school shutdown could cause learning losses that could translate over time into US$10 trillion in lost earnings, representing a loss of 16 percent of public investment in basic education for this cohort of students (Azevedo et al. 2020).

It is critical to ensure that this generation of students does not suffer a disadvantage in comparison to past and future generations. To ensure that this cohort of students fully recovers learning lost during the pandemic, countries should prioritize remedial or accelerated education approaches to address these challenges and get all students to grade-level proficiency. It is necessary to promote greater efficiency in our education systems through actions such as consolidating the curriculum within and across subjects, increasing instructional time, and implementing effective pedagogies for remediation, including teaching at the right level, tutoring and others. Different approaches to remedial education for learning recovery are possible; examples for countries to consider, depending on local context and needs, are provided below. The evidence presented in this section comes from both pre-pandemic and current experiences, and elements can often be combined as part of a national remediation strategy.

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Potential Country Response

Establish Programs for Teaching at the Right Level

The shock of the COVID-19 pandemic has led to huge learning losses and missed learning opportunities, but the impact has been highly 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 known as 'teaching at the right level'; the fundamental principle underlying this approach is that children are grouped 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. These learning activities typically focus on foundational skills in language and mathematics and are not exclusively linked to the curriculum. The approach starts with the administration of a brief assessment of reading or mathematics ability. In an extra dedicated hour of the school day, students move from grade-based classrooms to classrooms based on level or proficiency, 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. (Students continue in regular schooling while participating in these programs). When used in India, in 50 days of focused teaching by lightly trained volunteers, this approach raised achievement levels for students in grades 3 to 5 from close to the lowest achievement levels to the level of learning of the third-highest achieving state (Banerjee et al. 2016). Similar positive results were achieved in Ghana using this approach under Ghana's Teacher Community Assistant Initiative (Lucas, Beg, and Fitzpatrick 2018).

In Botswana and Zambia, programs that group children by their level of ability have been adapted in response to COVID-19 to support learning recovery. In Botswana, where a Teaching at the Right Level (TaRL) program supported by J-PAL had been a core intervention since before the pandemic, Ministry of Basic Education partners in the North East region took the lead in reinstating the program following school re-openings in 2020, reducing the implementation cycle from thirty to eight days. Despite this reduced intervention time, students demonstrated strong learning gains that were almost equal to those from the 30-day cycle (Muyoki et al. 2021). In Zambia, the government's TaRL program is being scaled up, expanded to include more grade levels and combined with a condensed math and language curriculum (UNESCO 2021).

Other countries have incorporated principles of 'teaching at the right level' 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).

Provide Individualized Self-Learning Programs, Including Computer-Assisted Instruction

Similar to teaching at the right level, self-learning programs can also 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 self-learning programs.

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 teaching at the right level in a cost-effective way. It can be implemented during the regular school day or after school. Examples from India and Uruguay show that that adaptive computer-assisted instruction can increase learning, with suggestive 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 a randomized control trial in Bangladesh, an individualized, paper-and-pencil self-learning program was found to significantly improve students' mathematical abilities. The program, which uses the Kumon method of learning, first assigns each student to an initial level based on their performance in 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 easily understandable hints and examples (Sawada et al. 2020). In Jordan, where learning has largely taken place remotely throughout the COVID-19 pandemic, the blended

'Learning Bridges' program promotes learning recovery by distributing printed, self-paced activity sheets every week to students in grades 4-9. These 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 up understanding from the previous school year (UNICEF Jordan 2021).

Establish Small Group Tutoring Programs

There is strong evidence that tutoring can substantially increase student achievement, especially among low-achieving students, but the efficacy of this approach depends critically on group size and the frequency of sessions. In that regard, the scaling up of tutoring programs, particularly if there is little country experience, is a challenge. High-dosage tutoring, defined as groups of six or fewer students who meet at least four times per week (equivalent to 50 hours or more over 36 weeks), has been found to produce substantial increases in test scores. Other 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.

Some countries are implementing tutoring as a strategy for recovering learning during the COVID-19 pandemic. For example, in 2020 the United Kingdom launched the National Tutoring Program, which offers high-quality tutoring services to public primary and secondary schools, providing additional support to students who have missed out the most because of school closures. 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 additional 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 providing tutoring to 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), which was implemented by researchers in 2020 and had positive effects on academic performance (Carlana & La Ferrara, 2021). Overall, the Global Education Recovery Tracker estimates that 1 in 3 countries have used tutoring as a remote learning support since the beginning of the pandemic.

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 our 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 teaching at the right level 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). Belgium offered free summer school for all in summer 2020 (UNESCO 2020b). 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). 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. Kenya's experience shows how one country is extending its academic calendar in efforts to get students back to grade learning. In March 2020, three months into the school year, Kenyan authorities closed schools and announced that the academic year was canceled and would be repeated in January 2021 (Dahir 2020). Distance education services were offered throughout the year, but access was largely unequal (Isbell 2020). The controversial decision was later partially reversed in late 2020 when the Ministry of Education announced a two-year, accelerated 'crash program' that would 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 (Nabwile 2020). In October 2020, upper grade students picked up where they had left off, while all other grades started in January 2021. The normal school calendar will resume in 2023. This approach, which allayed some prior concerns about class repetitions, has also been criticized for being "too heavy" for teachers and students and for the financial burden it poses on parents (K24 Kenya).

A note on grade retention

Given the extraordinary challenge posed by extended school closures and the reduction in instructional time, many have considered grade retention as a potential option to remediate students who have fallen behind. Evidence on the impact of grade retention on short- and long-term outcomes is mixed, and it is generally understood that the effects of retention vary by the student's abilities and the timing of retention. Some research shows that the benefits of retention are unclear and that the risk of negative socioemotional outcomes, such as increased stress and lower self-esteem, is high (Brophy 2006; Peixoto et al. 2016; Mariano, Martorell, and Berglund 2018). Other research shows that student experiences with retention improve greatly when complementary programs, such as early identification of at-risk students, small-group instruction, after-school programs, assessments, and summer school, are part of the remediation package. Overall, the available evidence points to using retention only when students are truly unprepared for the next level of instruction and when complementary remedial interventions are provided (Education Endowment Foundation 2018b; Valbuena et al. 2020).

However, most of this research has focused on the effects of retention on individual students, and much less is known about the potential applications of whole-cohort grade retention in situations of prolonged school disruption. Adopting such an approach in the context of COVID-19 is likely to be costly, given that the combination of returning and incoming students into one grade would expand the system, requiring more resources (or diluting existing ones). Therefore, a better approach would instead focus on getting returning students back on track through a combination of expanded time spent on instruction; consolidating of the curriculum across subjects and within subjects to prioritize key concepts; and the application of effective pedagogies such as teaching at the right level, self-learning programs and tutoring. (For more information, see our Policy Note on Adapting the Curriculum).

Useful Resources

Teaching at the Right Level
- 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

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

Individualized Self-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

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