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POLICY BRIEF

Support Multigrade Schools with Digital Technology: Learning recovery from Typhoon Odette in the Philippines

Introduction

Multigrade education is a teaching method where one teacher is responsible for teaching learners in different ages, grades and curricula in one classroom. It has been an integral part of the Philippine education system to provide inclusive and equitable quality basic education in remote and sparsely-populated communities. Thus, it significantly contributes to the realization of the government's constitutional mandates as well as global commitment for education.

Typhoon Odette hit the Philippines in December 2021, destroying many classrooms and essential school supplies. The United Nations Children's Fund (UNICEF) Philippines, with the Bureau of Learning Delivery of the Department of Education (DepEd) and Fundación Educación y Cooperación (Educo), implemented the Learning Recovery Programme for Children in Multigrade Schools in Typhoon Odette Affected Areas in the Philippines to support these schools via a digital learning intervention. Partner schools that offer kindergarten to Grade 6 received digital learning materials, which included tablets and laptops that were preloaded with offline educational materials from DepEd and partners of School in a Bag of Smart Communications, Inc. The Learning Passport, a digital learning management system developed by UNICEF and Microsoft Community Training, was also introduced so that learners and teachers can access learning materials and track their performance. Offline hub devices were provided so that learners in low- to no-connectivity areas can access the learning content without connecting to the internet. Subsequently, teachers from partner schools received training on the use of these digital resources in the classroom.¹

According to post-implementation monitoring, the digital learning intervention is received well by teachers and learners in the partner multigrade schools. A large share of teachers use School in a Bag and the Learning Passport for remedial and supplementary learning in Mathematics, English and Filipino classes two to three times a week. The digital learning intervention improves classroom management, as teachers are able to focus on teaching learners in one grade level while the other learners study or perform learning activities in School in a Bag and the Learning Passport. The rich, preloaded content also alleviates teachers' burden of searching for appropriate educational materials. Moreover, the intervention helps increase learners' engagement and interest in learning. Teachers observed that learners are more focused, excited and eager to learn when using the digital learning resources.

The intervention also reduced noise and disruptive behavior in the classroom. Learners reported that digital learning materials make learning fun, make them want to come to school and help them understand the lessons better.

There are remaining challenges in using School in a Bag and the Learning Passport at partner schools. Teachers and learners face challenges in sharing the tablets and using these effectively in the classroom. Teachers also encounter difficulties in sharing devices with other teachers. Teachers and learners expressed a need for more technical guidance in using the devices. Reliance on internet connectivity also remained problematic when accessing the online Learning Passport. Despite the observed benefits, changes in learners' learning performance were not measured with learning assessments during the implementation. As such, the relationship between the use of School in a Bag and the Learning Passport and learners' performance should be examined in future monitoring.

Building on UNICEF's experience in the Typhoon Odette response, this Policy Brief recommends immediate actions to address the remaining gaps and challenges in using School in a Bag and the Learning Passport in multigrade classes. The following recommendations may also serve as useful recommendations for DepEd when scaling up information and communications technology (ICT)-enhanced pedagogy in other multigrade schools across the Philippines. Digital-assisted learning and teaching have a potential to expedite recovery from learning losses caused by the pandemic and close the learning gaps in remote and rural areas. In this regard, UNICEF advocates for introducing ICT-enabled learning and teaching in multigrade schools nationwide in the long term to improve the delivery of quality and inclusive education for children in marginalized and geographically challenged communities. These recommendations may serve as the first step towards this scaling.

¹ Read the Research Brief for more information about the intervention.

Recommendations

Continuously guide teachers on the use of technology in pedagogy

In the project sites, a large share of teachers had experience using ICT as part of the teaching and learning process prior to the intervention. Hence, due to existing practices in using digital resources in the classroom, most of the schools were able to establish a plan for the use and management of School in a Bag and the Learning Passport within three to six months of the implementation. However, adaptation to new technology takes time. While the project offered teachers from partner schools training on the use of the digital resources in the classroom, a large share of the teachers expressed that additional support on pedagogies and guidance for using School in a Bag and the Learning Passport would be useful, such as lesson exemplars and practical examples to incorporate in their lessons. Moreover, while teachers have been employing digital learning in the classroom, more than half have not attended any official ICT-related training in the past 24 months. This implies that teachers may be familiar with using the devices but may not have sufficient knowledge and skills to optimize digital technology in pedagogy.

A mechanism to continuously guide teachers on the use of technology in teaching should be set up. For example, the digital learning intervention with School in a Bag and the Learning Passport, which was modeled in this project, can be embedded in DepEd's systematic and robust teacher professional development programmes for multigrade teachers beyond one-off training initiatives, aligning with DepEd's national competency standard for teachers on the use of technology in the classroom. Along with this, a manual and exemplars that showcase how the digital learning package may be optimized in the classroom should be developed. Moreover, communication lines between school focal points and ICT focal points at DepEd division offices should be strengthened so that the latter may support schools in the use and maintenance of the technologies.

A learner in a multigrade school in Dinagat Islands holds a tablet and uses the Learning Passport developed by UNICEF Philippines in collaboration with DepEd.



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Peer-to-peer learning among teachers should be promoted. Peer-to-peer learning in the Learning Action Cell, which is the school-based continuous professional development strategy for teachers, may serve as a venue to share knowledge and experiences in using digital materials in the classroom. Similarly, the creation of a network of multigrade schools may encourage the sharing of good practices and peer learning among these schools that actively practice digital learning. Developing an online platform or community may help teachers from different schools to exchange ideas, lesson plans and strategies for incorporating technology effectively. To this end, it is important to include the utilization of the ICT interventions in the School Improvement Plan or Annual Implementation Plan so that appropriate funding may be secured by schools for these measures.

Effective use of ICT in the classroom largely depends on teachers' technical knowledge, lesson planning and capacity to overcome difficulties encountered during lessons where technology is used to support learning. The aforementioned efforts should continuously empower teachers via instructional planning, practical exercise and knowledge sharing to use digital resources effectively and confidently in multigrade education.

Enrich offline digital learning and teaching materials

Multigrade schools are generally located in remote and disadvantaged communities. According to DepEd data, while 82 per cent of multigrade schools across the country have electricity coming from major or local power distributors, only 49 per cent have access to the internet.² Even when schools have internet connection, it may not be stable and fast enough to load websites and view online teaching and learning materials. In this sense, weak internet connection is the major challenge to accessing online resources at school. Responding to this challenge, the project curated offline gamified apps for the tablets and instructional videos for the laptops, including DepEd's educational videos and content from UNICEF, in the Learning Passport. These offline digital learning and teaching materials support teachers to manage multigrade classes better and increase learners' engagement and interest in learning.

While digital content from development partners is abundant, there is a need to digitize more educational materials from DepEd. For example, DepEd's Learning Activity Sheets used in multigrade schools can be digitalized for inclusion in the Learning Passport. The Learning Passport not only enables learners to take courses but also offers practical quizzes and exams for performance assessment at the end of the lesson. Learners can also interact with other participants and ask questions to teachers on the platform.

Learning history is recorded so that learners' engagement and course completion can be tracked. Using the Learning Passport offline hub devices, learners can access learning content without internet connection. Learning content and performance records are synchronized with the online Learning Passport once the device is connected to the internet.

Offline digital learning and teaching materials that are aligned with the national curriculum and lesson plans can largely supplement the regular lessons and remedial learning when internet connection is not available or not reliable, and help enhance learners' foundational skills in literacy and numeracy as well as their experience in technology-enabled learning. Moreover, digitalizing educational materials developed locally by DepEd regional and division offices can support mother tongue-based learning.

Monitor the impact of ICT-enhanced pedagogy on learning performance

While the project finds that offline digital learning and teaching materials have positive results on teachers' classroom management and learners' engagement and interest in learning, continuous monitoring should be done to measure the impact of the digital learning intervention on learners' learning performance in partner schools.

As the first step towards measuring this impact, the utilization of digital educational materials in School in a Bag and the Learning Passport should be embedded in a monitoring checklist for multigrade schools that DepEd division offices regularly administer. The enhanced monitoring checklist may include items such as frequency of utilization, subject areas where School in a Bag and the Learning Passport are utilized, device management and maintenance, instructional supervision that teachers received, and issues and challenges. The results may link to monthly or quarterly grade assessment tests that division offices administer to see the association between ICT-enhanced pedagogy and learners' learning outcomes over time. The regular monitoring will not only generate data and evidence on learning outcomes but also on contextual factors related to the utilization of digital learning and teaching materials and pedagogical practices. Moreover, the aforementioned content development on the Learning Passport will facilitate classroom-based assessments by tapping practical quizzes and exams in each lesson to evaluate learners' knowledge and proficiency.

The findings from continuous monitoring may help DepEd identify the impact of ICT-enhanced pedagogy on children's learning performance and promote evidence-based policy, curriculum, pedagogical practices and resource allocation on

²Data were generated from DepEd Learning Information System in January 2023.

digital learning in multigrade schools in far-flung communities. Moreover, while the post-implementation monitoring did not cover the utilization of the offline Learning Passport hub devices due to their recent implementation at the time of monitoring, it is critical to track its effects on learners' performance in multigrade education.

Build partnerships in enriching digital learning

Strong partnerships may enrich digital learning. In this project, Educo, as a non-governmental organization partner, supported field implementation, while the gadgets used for digital learning, such as tablets and laptops, were procured through Smart Communication's School in a Bag. When enriching the digital learning intervention at partner schools and expanding coverage to other multigrade schools across the Philippines, multiple partners may be tapped for learning content, training and procurement of devices and equipment.

For instance, in the Lao People's Democratic Republic (PDR), 17 partners were engaged to enrich Khang Panya Lao, their Learning Passport platform, including a local telecom provider to distribute discount-priced SIM cards and internet packages for the partner schools. Their project also

partnered with the Basic Education Quality and Access in Lao PDR, a programme funded by Australia's Department of Foreign Affairs and Trade, to share the authorized learning materials of the Ministry of Education and Sports with Khang Panya Lao. In Timor Leste, there was a partnership with MIT D-Lab to develop nine science, technology, engineering, arts and mathematics (STEAM) courses and with Insper Institute of Education and Research in Brazil to develop a financial literacy course.

While DepEd is committed to accelerating digital learning,³ it is expected that the country will need US\$ 171 million to achieve universal digital learning by 2030.⁴ Building on DepEd's current efforts in enhancing the quality of education with digital technology, partnerships with multiple actors will further strengthen the innovation of ICT-enhanced learning and teaching modalities and ensure that education outcomes improve for the most vulnerable children and adolescents.

Multigrade teachers attend a capacity-building training program organized by UNICEF Philippines, Educo and DepEd in Dinagat Islands.



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³ DepEd, [The Philippines National Statement of Commitment for the Transforming Education Summit in September 2022](#), 2022; [Basic Education Development Plan 2030](#), 2022.

⁴ US\$122 million for devices and US\$49 million for digital learning solutions. UNICEF, [How Much Does Universal Digital Learning Cost?: Policy brief](#), 2022.

Conclusion

Digital learning has great potential to improve learning in multigrade schools in remote and disadvantaged communities and tackle the learning crisis that challenges education in the Philippines. It enables learners at different learning levels to progress towards the mastery of foundational skills at their own pace. Strengthening guidance to teachers, learning content, monitoring and partnerships will encourage increased use of digital learning at partner multigrade schools. Furthermore, these recommendations should also be exercised when DepEd scales the digital learning intervention to other multigrade schools across the Philippines. To ensure inclusive and equitable quality basic education for all Filipino children, DepEd can promote digital-assisted learning and teaching to bridge the learning gap for children in multigrade schools. UNICEF will work hand in hand with DepEd towards this goal.

Read more

The Research Brief presents results from the project and examines the enabling factors for introducing School in a Bag and the Learning Passport and how these resources are adapted in multigrade schools.

At the awarding ceremony of the capacity-building training program for multigrade teachers organized by UNICEF Philippines, Educo and DepEd in Dinagat Islands.



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