GLOBAL EDUCATION MONITORING REPORT

2024

Pacific

Technology in education:

A TOOL ON WHOSE TERMS?

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This publication can be referenced as: UNESCO. 2024. *Global Education Monitoring Report 2024: Pacific: Technology in education – A tool on whose terms.* UNESCO, Paris

First edition
Published in 2024 by the United Nations Educational, Scientific and Cultural Organization (UNESCO), 7, place de Fontenoy, 75352 Paris 07 SP, France, and the Commonwealth of Learning, 4710 Kingsway, Suite 2500, Burnaby V5H 4M2, British Columbia, Canada.

Typeset by UNESCO

Graphic design by Optima Graphic Design Consultants Ltd
Layout by Optima Graphic Design Consultants Ltd

Photography caption: On 29th October, Boys and girls gather around to watch Harry (11yrs) playing a video game on his mobile phone during lunch break, Sungo Primary School, Efate in Suango, Port Vila, Vanuatu

Photo credit: © UNICEF/UN0441162/Shing

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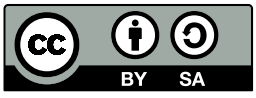
This report and all related materials are available for download here: https://bit.ly/2024pacific



ISBN: 978-92-3-100712-5

https://doi.org/10.54676/FILL2531

The Education 2030 Incheon Declaration and Framework for Action specifies that the mandate of the *Global Education Monitoring Report* is to be 'the mechanism for monitoring and reporting on SDG 4 and on education in the other SDGs' with the responsibility to 'report on the implementation of national and international strategies to help hold all relevant partners to account for their commitments as part of the overall SDG follow-up and review'. It is prepared by an independent team hosted by UNESCO.

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The *Global Education Monitoring Report* is an independent annual publication. The GEM Report is funded by a group of governments, multilateral agencies and private foundations and facilitated and supported by UNESCO.

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SHORT SUMMARY

Can technology solve the most important challenges in education?

Information transmission and connectivity is crucial in the Pacific, a region characterized by high geographic dispersion. While the application of ICT in education has significant potentials, it is hindered by the region's limited and costly infrastructure. This edition accompanies the 2023 *Global Education Monitoring Report*, which acknowledges technology as a useful tool but invites the education community to question on whose terms it is deployed.

77% of primary school teachers in 15 Pacific countries do not have devices to teach

The report considered four key policy areas of the Pacific Regional Education Framework (PacREF) (2018–2030):

In terms of **quality and relevance,** mobile technology has offered an affordable and flexible approach to learning, and social media have improved communication between institutions, parents and learners. Moodle is the most widely used digital platform in the region. Textbooks are being digitalised and digital resources made available. Yet content is not always developed or adapted to local languages and cultural contexts.

Open and distance learning has historically expanded **learning pathways** in the Pacific, especially in higher education and as a response to natural hazards. The University of South Pacific is a leading example of open and distance learning connecting campus across 12 countries.

With the aim to enhance **student outcomes and well-being**, efforts have been made to incorporate digital skills into curricula and initiatives have increased outside formal education. Yet regulations do not adequately address threats from the use of technology to privacy, safety and well-being.

With a focus on the **teaching profession**, countries leverage technology to provide training opportunities and transform the teaching profession. However, ICT training varies greatly across the region and limited digital infrastructure hinders technology integration into classrooms and teacher training.

Three conditions need to be met for technology's potential to be fulfilled: equitable access to technology, appropriate governance and regulation, and sufficient teacher capacity.

Supporting this publication is seven background thematic studies that provide a comprehensive overview of education technology issues; Commonwealth of Learning's short case studies on some of its projects; a survey administered to key informed respondents from the region; and a series of country profiles on PEER, a policy dialogue resource describing policies and regulations related to technology in the region's education systems.

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Since wars begin in the minds of men and women, it is in the minds of men and women that the defenses of peace must be constructed

Foreword

Technology is a tool, not a panacea. Nowhere does this insight ring more true than in the Pacific region, where technology has opened digital doors for many living on even the most remote islands, while others have remained constrained by limited access to electricity or the internet. The COVID-19 pandemic starkly exposed this digital divide, underscoring how technological advances risk giving with one hand while taking away with the other.

In the Pacific region, technological possibilities intersect with realities of geography, economy and climate. The remoteness of the region has shaped its distinct cultural heritage but presents challenges for building basic infrastructure, and the vulnerability to natural disasters poses significant obstacles to achieving equity in education. This report delves into these dynamics, offering a nuanced perspective on the far-reaching possibilities, as well as limitations, of technology in the educational systems of the Pacific.

As demonstrated in this report, the successful adoption of technology in an educational context depends on key factors such as pedagogy, teacher training and student support. Although most countries in the Pacific have regulations that cover teacher training in technology, teachers' confidence in using technology to facilitate learning remains low.

A focus on learning outcomes rather than mere technology adoption is essential. This means ensuring that students and teachers have the skills to make use of available digital devices. These devices can be scarce: two thirds of primary school teachers in 15 Pacific Island countries or territories reported that computers or tablets were not available for teaching.

Beyond the issue of accessing devices and the internet, other hidden challenges require careful monitoring and regulation. Privacy concerns, cyberbullying and excessive screen time are growing issues, despite regulators' efforts to keep apace. Education-focused data privacy laws have been codified in only 4 out of 15 countries and territories in the region.

Technological change demands ongoing teacher development and strong digital literacy skills. The use of artificial intelligence – AI – is accelerating, and countries must stay one step ahead given the ethical implications associated with its development and deployment. UNESCO's 2021 *Recommendation on the Ethics of Artificial Intelligence* provides a crucial framework for responsible AI development and the subsequent AI Readiness Assessment Methodology offers a tool for countries to assess their preparedness. Pacific Island nations stand to gain from actively engaging in this process.

To maximize the benefits of technology while mitigating risks, a holistic approach is needed. Successful implementation requires substantial investment, tailored strategies and a deep understanding of local contexts. By prioritizing learners' needs and fostering collaboration, the Pacific region can harness technology's power to build more inclusive and equitable education systems.

Stefania Giannini
Assistant Director-General for Education, UNESCO

Foreword

Technology and education. For many, those words go hand in hand. Technology has, over several decades, held our attention as a doorway to all kinds of possibilities in the field of education. As the world around us becomes increasingly more digital in nature, there is a perception that young people can access and use technology to enhance their educational experiences and potentially to achieve greater academic success, opening doors for them that were previously closed.

In the Pacific, Ministers of Education and Heads of Education Systems have collaborated to identify their collective education priorities for the region through the Pacific Regional Education Framework, Moving Towards Education 2030 (PacREF). A 12-year plan designed to align regional efforts with global education goals based around the policy themes of Quality and Relevance, Learning Pathways, Student Outcomes and Wellbeing, and The Teaching Profession, the PacREF promotes a human rights approach to education and seeks to empower Pacific Islanders fully enjoy, without barriers, the benefits of education."

This regional edition of the *Global Education Monitoring Report* looks at how technology is impacting education in the Pacific within each of those thematic areas.

Is it the great equaliser that many have hoped for or does technology act to further disadvantage students who are already marginalised by geography, socioeconomic status, gender and language among other challenges?

In the Pacific context, the effective integration of digital tools into education requires a collaborative and multifaceted approach that involves all stakeholders, including teachers, students, parents, and policymakers. Using specific examples from across the Pacific region, the report looks at opportunities and challenges posed by various technological advances in education and explores what actions have been taken and what actions are necessary to ensure that technology provides intended benefits without unintended consequences for Pacific Islanders.

Michelle Belisle
Director, Educational Quality and Assessment Programme,
Pacific Community

About COL

Established in 1987 by the Commonwealth Heads of Government, the Commonwealth of Learning (COL) is the only Commonwealth intergovernmental organization solely focused on open and distance education and learning. COL works across 56 member countries to expand the scale, efficiency and quality of learning through open, distance, and technology-based approaches, with a particular focus on reaching underserved populations. Guided by the COL Strategic Plan 2021–2027, the organization aims to create enabling environments for robust and resilient education systems, build the capacity of institutions to deliver lifelong learning opportunities, and foster partnerships to enhance impact. COL's education initiatives, aligned with the Sustainable Development Goals, especially SDG 4, span open schooling, teacher education and higher education. Cross-cutting areas include technology-enabled learning and improving access for women and girls through gender-responsive programs. Through its Virtual University for Small States of the Commonwealth and collaborations with governments and institutions, COL contributes to advancing education in resource-limited settings across the Commonwealth.

Commonwealth of Learning team
for the regional report on technology in education in the Pacific

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Acknowledgments

This report would not have been possible without the valuable contributions of numerous people and institutions. The *Global Education Monitoring Report* and Commonwealth of Learning (COL) teams would like to acknowledge their support and thank them for their time and efforts. Special thanks go to our respective funders.

We would like to acknowledge the role of UNESCO and its leadership and show gratitude to many individuals, divisions and units at UNESCO headquarters, notably in the Education Sector. The UNESCO Office for the Pacific states contributed to reviewing the report draft and sharing valuable information and contributions. We would like to thank Shamila Nair Bedouelle, Aya Aoki, Varunesh Ashvindra Rao, Vera Ushurova, Anna Katharina Seeger and Yo Han Jin.

The GEM Report is grateful for the engagement and comments of regional COL focal points: Rohan Campbell, Vilitati Togavou, Lucy Kum-On, Darrina Kun, Maia Hay-Newnhan, Anthony Rayappan, Leah Margis, Ioana Chan Mow, James Bosamata, Raelyn Esau, Neaki Letia and Marie Jonah. We also thank Asha Kanwar, former President of COL, for her role in setting up this partnership.

The work benefited from consultations with Michelle Belisle, Seci Waqabaca, Melvin Ramkhelawan, Tawaqa Naisoro and Michael Noa (Educational Quality and Assessment Programme, Pacific Community), Michael Currie (Australia Department of Foreign Affairs and Trade) and Vena-Liz Upton and Shane Coleman (New Zealand Ministry of Foreign Affairs and Trade), to whom we extend our thanks. Special thanks go to Philip Chan, Alexandra McCormick and Grace Ji who hosted a consultation on the report, as well as to the many academics and institutions that participated in and provided input during the consultation process.

The regional report built on seven background thematic studies, which are listed below. They draw on primary and secondary data and expert analysis conducted by researchers, research institutes and implementing organizations working in and on the region. COL also provided case studies based on some of its projects and collaborated with some of the authors of the background papers in the administration of a survey to key informants from the Pacific.

Selected background papers were peer-reviewed by external local experts. Particular thanks go to Michael Phillips, Cathy Stone, Stephen Marshall, Muliagatele Rasela Tufue-Dolgoy, Gurmeet Singh, Muagututia, Ioana Chan Mow, Vilitati Togavou, Chris Boyle, Sarah Howard and Sarah Prestridge for their feedback. The final report was also reviewed by Rajni Chand, Deepak Prasad and Wayne Mackintosh.

Selected background papers were edited by Jackie de Vos and the final report was edited by Andy Quan, whom we thank for their tireless work.

We also wish to acknowledge and express our gratitude to the individuals and organizations who worked hard to support the production, design, printing and translation of the report within and external to UNESCO. Special thanks go to our copy editor Jennifer Allain for her meticulous attention to detail. We would like to thank the team at Optima Graphic Design Consultants Ltd for their efficient and detail-oriented work in layout and graphic design, which greatly enhanced the visual appeal of the report. Finally, our thanks also to UNICEF for the extensive use of their photos.

BACKGROUND RESEARCH PAPERS

Access to technology in the Pacific
Som Naidu

Equity and inclusion in Pacific education
Cheryl Brown

Quality provision of digital learning
Michael Sankey

System resilience in the Pacific
Shikha Raturi

Cost of technology in the Pacific
Bibhya Sharma, Pritika Reddy and Jashwini Narayan

Teachers and technology in the Pacific
Australian Council for Educational Research:
Anna Dabrowski, Yung Nietschke and Elizabeth Cassity

Technology implementation in Papua New Guinea and in the Pacific
Catalpa International: Kara Chesal, Sharon Edington, Artila Devi, Rebekah Ilave and Juliet Horihau

KEY MESSAGES

In the Pacific, appropriate education technology adapted to context improves learning.

- **The right level of technology, fitted to local needs, can directly impact outcomes.** A project in Papua New Guinea used daily text messages to improve primary school children's learning and found that children who did not receive a story shared through a text message were twice as likely to be unable to read a single word.
- **Technology can certainly engage learners.** A study of 270 primary and secondary school students in Queensland, Australia, found that educational games made learning more engaging for students, promoted socialization and increased peer interactions.
- **Technology does not have to be advanced to be effective.** Radio remains a reliable method for reaching remote learners in Fiji, Kiribati, Papua New Guinea, Solomon Islands and Vanuatu. The use of mobile phones has also been rising as a learning tool. As early as 2018, over half of university students reported that they were using their phones for mobile learning.
- **Technology should focus on learning outcomes, not on digital inputs.** The One Laptop Per Child project was piloted in at least eight Pacific countries. It was discontinued in most due to a lack of content contextualization and support, but Vanuatu managed to build on the project to transition to a nationally owned and sustainable e-learning project.
- **Finally, inappropriate technology can have a detrimental impact.** In New Zealand, a phone ban in force since the beginning of 2024 has already shown a positive impact on attention and learning. Globally, one in three countries have introduced such bans through their laws or policies, but fewer countries have done so in the Pacific.

The Pacific is a challenging context when it comes to the use of technology in education.

- **Limitations in infrastructure hinder access to technology.** Across 12 Pacific Island states, 61% of primary and 77% of secondary schools had computers for pedagogical purposes in 2019–23; 51% of schools were connected to the internet in primary and 59% in secondary education. Natural disasters challenge infrastructure further, for instance after cyclones hit Fiji, Tonga and Vanuatu.
- **Even rich countries struggled to reach many of their disadvantaged learners during COVID-19.** In Australia, only half of teachers reported that all their students had access to devices for remote learning, while in New Zealand about 21% of Māori and 28% of Pacific Island students reported having to share a device with others during remote learning. In Papua New Guinea, 72% of schools reported that over half of their students had no electricity at home.
- **Digital resources tend to be available only in English in the region.** A mid-term evaluation of the Pacific Partnership for Open, Distance and Flexible Learning recommended that educational resources should also be published in languages other than English, as a step towards adapting these resources to the local cultural context.

Yet various examples in the Pacific show that technology can be used effectively in education.

- **Open, distance and flexible learning has long been viewed as a policy priority.**
  - The Pacific Regional Education Framework calls for expanding the use of information and communication technology (ICT) for access to education, sparking various regional partnerships and initiatives aiming to improve open, distance and flexible learning.
  - Digital textbooks have helped overcome the costs related to delivering printed materials to remote schools and have been well-received by students.
  - Technology has boosted tertiary education accessibility. French Polynesia boasts five interconnected campuses, while the University of the South Pacific saw a 20-percentage-point surge in blended and online course enrolment between 2017 and 2023.

- **Open educational resources can equalize opportunities.** A share of 9 out of 10 students in the Pacific Islands find such resources to be important in their e-learning journey. Each Pacific country has its own resource collection, while teachers can use and adapt materials prepared by other countries.
- **Assistive technology and universal design open up opportunities for learners with disabilities.** Out of 15 Pacific Island countries and territories, 11 have or are developing policy frameworks that support disability-inclusive education, many of which make specific reference to the use of technology. However, approximately half of the countries report that assistive devices and adapted learning materials are still not generally available in schools.

The rapid pace of change of technology is challenging for Pacific education systems.

- **Many do not have much chance to practise with digital technology in schools.** Among primary school teachers in 15 Pacific Island countries and territories who responded to the 2021 Pacific Islands Literacy and Numeracy Assessment, 77% said that computers or tablets were not available.
- T**eachers often feel unprepared and lack confidence teaching with technology.** Data from the 2018 Teaching and Learning International Survey showed that just one in three lower secondary school teachers in New Zealand felt confident in using ICT in teaching after completing their training.
- **Digital skill levels needed to operate digital devices for learning well and safely are low.** Less than a third of adults have carried out activities with computers in the Pacific, with large gender, age and socioeconomic gaps in skill levels.
- **Digital skills are a priority, but countries define them in very different ways.** All countries have incorporated digital skills development into their education plans. However, a clear curriculum and assessment framework of digital skills is absent.

Pacific countries need to give more thought to the long-term sustainability of their education technology investments.

- **Open and distance learning implementation plans often lack clarity and full cost estimates.** Infrastructure limitations and unsustainable donor-funded programmes hinder development. Papua New Guinea's shift from print-based to tablet learning was impeded by high device and internet costs, leading to a return to print materials. A more sustainable approach is currently embracing a hybrid approach: print-based for some communities; blended learning for others; and possibly fully online learning for yet others.
- **Policy should support learners' well-being: Only 4 of 15 countries and territories have education-focused data privacy laws.** While cyberbullying is a crime in seven countries, references to education settings are rare. Where screens are available, best use guidelines are not always considered, with data from 10 years ago already showing that children in American Samoa, Guam, Hawaii and the Northern Mariana Islands spent 3.7 hours daily on screens.

Contents

Executive summary

Geographic dispersion poses challenges for delivering education in the Pacific that technology can help address. Pacific Island countries and territories have had varied experiences in their application of information and communication technology (ICT) to reduce the cost of connectivity to support education.

Technology has expanded learning opportunities in the Pacific, particularly in higher education. The University of the South Pacific (USP) established its own satellite network to connect its campuses across 12 countries. Social media and non-digital communication technology have improved connections between institutions, parents and learners. In Samoa and Tonga, multimodal approaches have strengthened education system resilience against future disruptions. Yet the impact of digital technology is incremental and uneven across contexts.

Education technology is being used to address some of the main education challenges in the region. In terms of equity and inclusion, ICT helps to lower the costs for some learners to access education; however, significant disparities in access remain. The integration of digital technology can improve the quality of education if those opportunities are appropriately adapted to context and sufficient attention is paid to risks. Improvements in efficiency through digital technology are possible, but each technology requires infrastructure investment, design adaptation and a distinct pedagogy.

Infrastructure challenges are being overcome in the Pacific. New submarine cables and lower telecommunications costs have expanded access to the internet and opened opportunities for education. From 2003 to 2021, internet access in Fiji increased from 7% to 88% and in Tonga from 3% to 71%. The average cost of 1 gigabyte of data in the region fell from 11% to 5.5% of monthly income per capita between 2014 and 2019. Yet inequalities within and between countries persist.

Sustainability and scalability of technology investment needs to be addressed. ICT in education is costly and requires capacity. Although donors have supported countries' technology investment, interventions sometimes lack coherence and fail to consider local contexts. Costs are often underestimated, and initiatives lack local leadership.

This report, which is part of the 2023 *Global Education Monitoring Report* cycle on education and technology, explores four main education policy areas based on the Pacific Regional Education Framework (PacREF) (2018–2030): quality and relevance, learning pathways, student outcomes and wellbeing, and the teaching profession. These policy areas support the Pacific Islands Forum's common vision of peace, harmony, security, social inclusion and prosperity.