



TECHNOLOGY-ENABLED INNOVATION IN EDUCATION IN SOUTHEAST ASIA (TIESEA)

DIAGNOSTIC ASSESSMENT REPORT – INDONESIA

COUNTRY REPORT

MARCH 2022

EXECUTIVE SUMMARY

Based on the five pillars of the ADB EdTech Readiness Framework, this report describes the current situation of education in Indonesia in general, with a specific focus on how EdTech is being implemented to improve the quality of teaching and learning. The five pillars of the framework include infrastructure, government, schools/teachers, parents/students, and EdTech providers. By identifying the existing status of EdTech readiness in Indonesia using this framework, the report seeks to provide evidence against which decision-makers can identify initiatives likely to make a positive contribution to the quality of the education ecosystem and opportunities for public-private partnerships.

Infrastructure

The Government of Indonesia (GoI) has set ICT infrastructure development as a strategic priority to be supported by the state budget/APBN as well as public-private partnerships. In 2018, to encourage investments in ICT and support the transformation of the Indonesian manufacturing industry, the GoI Ministry of Industry released Making Indonesia 4.0, a roadmap towards the Industrial Revolution 4.0.

As of April 2021, the national education database (Dapodik) showed that 97% of schools already have electricity, leaving only around 3% (over 6000) schools without electricity nationally. Through the state-owned electricity enterprise (PLN), the GoI is currently making efforts to reduce this gap. Meanwhile, due to the sharp increase in Internet use during the Pandemic, the connectivity gap in Indonesian schools is decreasing. In 2020, 19% or ~42,000 schools did not have Internet access. However, out of these ~42,000 schools, ~30,000 schools are actually located within the range of a Base Transceiver Station (BTS), making the Internet accessible by cellular phones. The Ministry of Communication and Informatics (MCI) is taking action to address the connectivity gap with the aid of public-private partnerships. Meanwhile, the Ministry of Education, Culture, Research, and Technology (MoECRT) is prioritizing the availability of digital devices for learning, such as tablets, laptops, LCD projectors,

printers, etc. In 2021, the total budget allocated for the provision of laptops was IDR 3.7 trillion. The Data and Information Center (Pusdatin) of MoECRT has provided devices to 2,802 schools, including three laptops, one projector, and one hard drive for schools in remote and underdeveloped frontier (3T) areas. In the same year, the Directorate of Junior High Schools supported 6,435 schools with 15 Chromebooks, 1 LCD projector, one wireless router, and one connector.

Government

In 2020, GoI launched the Freedom to Learn (Merdeka Belajar) policy. The Freedom to Learn policy encourages the participation and support of all stakeholders, including families, teachers, educational institutions, industries, and communities, in the teaching and learning process, at all education levels. The policy allows online learning from various sources and encourages strong collaboration with industry, especially for vocational education. Within that context, the role of ICT has been significant; it was stated explicitly on one of the MoECRT's missions that MoECRT provides infrastructure and technology to support the creation of relevant, equitable, and sustainable, high-quality education.

Within the Freedom to Learn policy, the MoECRT seeks to bring about education transformation in the following areas: the education ecosystem, teacher capacity, pedagogy, curriculum, and evaluation. Overall, the direction and policy strategies of the MoECRT, 2020-2024, focus on the use of ICT to improve equitable access to quality education services. Initiatives include the development of a school procurement platform (Sistem Informasi Pengadaan Sekolah/SIPlah); development of the 'Teachers as Agents of Change' (Guru Penggerak) platform; development of a mechanism to provide quality and standardized materials for teacher training and teaching aids; provision of preloaded devices to support teachers working in areas with limited connectivity; promotion of sharing good practices with other teachers; improvement of the quality of education data and development of information systems for stakeholders; and development of a career platform that facilitates students to successfully enter the job market.

Recognizing that the removal of ICT as a compulsory subject from Curriculum 2013 has not had the desired effect of integrating ICT across the curriculum, but has instead contributed to low levels of digital literacy, MoECRT has reintroduced Informatics as an elective subject to Curriculum 2013 and made it a cornerstone of the Merdeka Belajar curriculum. Informatics is a compulsory subject for schools in the 'Schools as Agents of Change' (Sekolah Penggerak) program where Merdeka Belajar is being piloted.

Implementation of EdTech in schools has been coordinated by the Data and Information Center (Pusdatin) of MoECRT. Pusdatin is also responsible for the implementation of the computer-based national examination as well as the computer-based national assessment. In 2021, inspired by concepts used in the Program for International Students Assessment (PISA), the computer-based national exam was replaced by a national assessment of minimum competency and character of students, and also of the learning environment.

To improve teacher capacity, both generally and in terms of their capability to integrate ICT into classroom practice, MoECRT has introduced the pre-service and in-service programs of Teacher Professional Education (PPG). All teachers must be certified through this program. In 2020, 25,000 teacher candidates participated in pre-service PPG through 68 pre-service teacher institutions (LPTKs). The pre-service PPG is self-funded by the participants. Meanwhile, in-service PPG is fully funded by GoI. As of 2019, fewer than 50% of Indonesian teachers remain uncertified.

School/teachers

To support the use of technology in learning, the MoECRT has provided Rumah Belajar (<https://belajar.kemdikbud.go.id/>) as the national learning platform. The platform includes a wide range of learning and assessment resources and supports a teacher community of practice. However, most teachers still prefer to use social media or video conferencing applications such as Zoom, Google Meet, Whatsapp, or Facebook to deliver learning activities. In response to a recent survey, 67% of teachers claimed that they have not been equipped to effectively operate digital devices and online learning platforms such as Rumah Belajar.

Teachers' capacity building in the use of ICT tools and integrating ICT into teaching-learning practice has been provided by the MoECRT in collaboration with private sector bodies. Programs include the Teachers as Agents of Change (Guru Penggerak) program, the PembataTIK program, the SEAMEO SEAMOLEC Training Program, the Google Suite for Education Training Program, and the Microsoft Educators Program. Pusdatin also supports training for schools in those areas with available Internet networks.

Home students/parents

The MoECRT considers parental involvement to be an important factor in children's achievement and encouraged parental involvement in the Study from Home (Belajar dari Rumah) program introduced during school closures. However, working parents, parents with two or more children, and parents with limited ability to handle digital tools were overburdened by the required involvement in their children's learning process from home. This was further hampered by difficulties in communication between teachers and parents due to a lack of Internet access, particularly in rural and remote areas.

In 2020, many students and parents reported a lack of feedback from teachers on children's assignments or exams. Teachers with limited digital skills reported that they could not effectively monitor or communicate with their students in Belajar dari Rumah practice. Students reported putting in less effort on assignments, having difficulty understanding learning materials, and 'cheating' by using Google or asking family members to complete assignments.

To successfully implement Belajar dari Rumah, supporting media such as mobile phones or computers equipped with an Internet connection are needed at home, as well as the skills to use them. However, some students do not have access to mobile phones of sufficient quality, resulting in learning materials not being delivered properly. Many students achieved a minimal understanding of the lessons due to a lack of guidance from teachers or parents. Internet penetration in Indonesia is characterized by unequal access and low bandwidth in areas remote from major city centers. These tend to be areas with a higher proportion of less educated and poorer families, so issues accessing and understanding learning materials were particularly salient for students in rural Indonesia.

To address these challenges, MoECRT and the Ministry of Religious Affairs (MoRA) partnered with telecommunications operators in 2020 to distribute free Internet quotas for teachers, secondary school students, university students, and lecturers.

Providers – Companies and Public Private partnerships

Public-private partnerships have been encouraged strongly by Gol, especially to provide solutions to various educational issues concerning access, technology/gadgets, and quality education. Ruang Guru, Zenius, and Google for Education are the major private platforms for educational use in Indonesia.

To support educators and staff in building their capacity to engage in implementing EdTech, many of the Indonesian EdTech companies provide capacity-building programs and learning management solutions, for example, Google, Microsoft, Ruang Guru, and Zenius.

Online learning will continue to be developed through various strategies devised by the Government, involving various ministries and collaboration between public and private sectors. Several issues to consider include low connectivity, limited access to EdTech, the low technology skills of teachers, students, and parents, and uneven awareness of EdTech tools. Nevertheless, the transformation is already on its way, and the success of the journey will depend on the strength of partnerships.

This Executive Summary presents preliminary findings and an official ADB publication will be produced in due time