# The Promise of Education in Indonesia







Australian Government

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## Foreword by H.E. Nadiem Makarim

It is with great pleasure that I welcome the publication of *The Promise of Education in Indonesia.* 

This report is important, not only for the government and development partners, but also for anyone interested in learning more about the Indonesian education system. It highlights the immense progress Indonesia has made on education, as well as important challenges ahead.

The Ministry of Education and Culture is embarking on a series of reforms through the *Merdeka Belajar* (Freedom to Learn) policy. As the name implies, the policy gives freedom to adapt and innovate on how to implement learning activities based on local wisdom, infrastructure availability, and socioeconomic and cultural factors.

Many of the report's recommendations are aligned with Indonesia's education reform agenda. For example, the report suggests using assessments to identify students and schools that are lagging behind and providing additional support to help improve their performance. This is in line with our decision to end the national examination and adopt a new assessment tool in 2021-the Minimum Competency Assessment and Character Survey. The new assessments will map students' abilities in language (literacy) and mathematics (numeracy). It will measure not only students' ability to read, but also their level of reading comprehension, and similarly their ability not only to do mathematical operations, but also perform analysis. The results from these assessments will also be used to identify and support low performing districts and schools in specific subjects, as well as individual students.

All stakeholders need to work together to increase the capacity, equity, and accountability for learning and to help all Indonesian children live up to their full potential and strengthen our human resources, as the report recommends. We have launched the *Guru Penggerak* (Teacher Motivator) pilot program, which aims to build a stronger education ecosystem focused on student learning. As part of the pilot, we are providing 2,800 teachers from 56 districts with training and on-the-job coaching. These teachers are expected to be agents of change both within their school and in their area —supporting children's all-round development and acting as a resource for other teachers. Our plan is to reach 400,000 teachers over five years.

Technology can also help accelerate our reform programs. We have seen that the COVID-19 pandemic has brought massive changes in the education sector given the unprecedented school closures. Since March 2020, measures have been put in place to support learning from home. These include supporting teachers to deliver online learning, providing free internet quotas to students and teachers, producing educational TV programming for students without internet access, and giving schools the option of using a simplified educaition curriculum. Most teacher trainings are now conducted online, and students are learning from home using various means—books, TV, internet, and WhatsApp—a major change from just a few months ago, and a step in the direction of a more resilient education system.

Still, like other countries around the world, we are grappling with how to minimize learning losses, bridge the digital divide, and ensure that *all* children are learning during the pandemic. As we continue to find solutions to new COVID–19 related challenges and to tackle existing ones, we are working closely with our development partners and with civil society. We welcome this report and its recommendations as part of this ongoing discussion.

I would like to express my appreciation to the World Bank team that contributed to this important report, and to the Government of Australia for their generosity in supporting its production.

> H.E. Nadiem Makarim Minister of Education and Culture Republic of Indonesia

## Foreword by Satu Kahkonen

Education and human development are central to the Indonesian government's overall development agenda and significant progress has been made in education over the past two decades. A broad range of reforms along with increases in education spending since the early 2000s have helped expand access to education, particularly among disadvantaged children. Enrollments are up 31 percent since 2002, adding more than 10 million primary and secondary students.

Indonesia has also demonstrated great progress on gender parity in education. In 1975, 65 percent of students were male, while today the proportions of girls/women and boys/men are roughly equal.

Despite these important achievements, Indonesian students are still unable to reach their full potential. Their human capital—the knowledge, skills, and health that people accumulate throughout their lives— is critical to Indonesia's future success.

One key challenge is that Indonesian children are not learning enough. Schooling is not always the same as learning—while Indonesian students attend school for 12.4 years on average, they only learn the equivalent of 7.8 years (Human Capital Index 2020). What they learn all the way through the education system—from early childhood to university—helps determine the skills they have when they enter the job market as adults. Although learning levels for all children need to be improved, disadvantaged students—such as those who are poor, live in remote areas, or have disabilities typically fall furthest behind and therefore need the most help.

The ongoing COVID-19 pandemic has brought with it a range of new challenges and a transition to learning from home at an unprecedented scale. While the government has taken many timely steps to support learning from home, the pandemic is still likely to impair learning and widen existing inequalities. Indonesia's challenge is now to recapture lost learning, while continuing to strengthen the education system to boost learning for all children.

Some measures implemented in response to COVID-19 can also be built on to strengthen the education system in the long term. For example, the government has announced plans for assessments to identify student learning levels, so that teachers can tailor their lessons and provide additional support. These assessments will be used to monitor student progress during remote learning and as children return to schools, when they re-open. This focus on understanding how much children are learning, and providing support based on their needs, is a key recommendation of this report and could become a more permanent way of improving teaching. Similarly, investments in improving online teaching and learning now can also make Indonesia's education system more resilient to future crises.

This report provides a set of options for the Government of Indonesia to strengthen education reforms and boost the learning outcomes of all Indonesian students. The recommendations focus on protecting and building human capital by increasing the capacity, equity, and accountability for learning. The report also explores what the central government can do to make changes for the better in areas under its control and how to provide better guidance and support to provinces, districts, and schools.

We hope that these recommendations will be useful for policymakers, practitioners, teachers, students, and parents—all stakeholders in Indonesia's future.

> Satu Kahkonen Country Director, World Bank Indonesia and Timor-Leste

## Acknowledgments

This report was prepared by a team led by Noah Yarrow and Andy Ragatz, comprising Rythia Afkar, Petra Bodrogini, Jonthon Couslon, Sangeeta Dey, Deepali Gupta, Susiana Iskandar, Ratna Kesuma, Citra Kumala, Javier Luque, Sylvia Njotomihardjo, Rosfita Roesli, Jamil Salmi, Santoso, Sheldon Shaeffer, Dewi Susanti, Ruwiyati Purwana, Alexander Michael Tjahjadi, and Wisnu Harto Adi Wijoyo. The team is grateful to the peer reviewers Kathleen Whimp and Fadila Caillaud, as well as to Camilla Holmemo for inputs and guidance. The report was prepared under the overall guidance of Satu Kristiina Kahkonen (Country Director, Indonesia and Timor Leste) and Toby Linden (Practice Manager, Education, East Asia and Pacific). Lestari Boediono, GB Surya, Jerry Kurniawan and Maulyati Nuraini provided support on the website and launch event.

A team at Communications Development Incorporated, led by Bruce Ross-Larson and including Joe Brinley, Joe Caponio, Jeremy Clift, Meta de Coquereaumont, Mike Crumplar, Peter Redvers-Lee, Christopher Trott, and Elaine Wilson, edited, designed, and laid out the report.

Funding from the Australian Government, Department of Foreign Affairs and Trade, supported the report's research and production.

## Abbreviations

51	Border, Outermost, Onderdeveloped Areas (Terdepan, Terdar, Tertinggal)
ACDP	Analytical and Capacity Development Partnership
AKSI	Assessment of Indonesian Student Competency (Asesmen Kompetensi Siswa Indonesia)
APBD	Regional government budget (Anggaran Pendapatan dan Belanja Daerah)
APBN	National government budget (Anggaran Pendapatan dan Belanja Negara)
ASEAN	Association of Southeast Asian Nations
BAN	National Accreditation Agency (Badan Akreditasi Nasional)
BAN-PAUD	National Accreditation Agency for Early Childhood Education (Badan Akreditasi Nasional–Pendidikan Anak Usia Dini)
BAN-PNF	National Accreditation Agency for Nonformal Education (Badan Akreditasi Nasional– Pendidikan Nonformal)
BAN-PT	National Accreditation Agency for Higher Education (Badan Akreditasi Nasional– Perguruan Tinggi)
BAPPENAS	Ministry of National Development Planning/National Development Planning Agency (Kementerian Perencanaan Pembangunan Nasional Republik Indonesia/ Badan Perencanaan Pembangunan Nasional)
BKN	National Civil Service Agency (Badan Kepegawaian Negara)
BLK	Vocational training center (Balai Latihan Kerja)
BOP PAUD	Operational Assistance for Early Childhood Education (Bantuan Operasional
	Penyelenggaraan Pendidikan Anak Usia Dini)
BOS	School Operational Assistance (Bantuan Operasional Sekolah)
BPS	Central Bureau of Statistics (Badan Pusat Statistik)
BNSP	National Professional Certification Agency (Badan Nasional Sertifikasi Profesi)
BSNP	National Education Standards Board (Badan Standar Nasional Pendidikan)
CECCEP	Centre of Early Childhood Care Education and Parenting (SEAMEO)
DAK	Special allocation funds (Dana Alokasi Khusus)
DAK–Fisik	Special physical allocation fund (Dana Alokasi Khusus—Fisik)
DAPODIK	Basic Education Data (Data Pokok Pendidikan)
DAU	General Allocation Grant (Dana Alokasi Umum)
DGHE	Directorate General for Higher Education
Dinas Kabupaten	District-level education offices
Dinas Provinsi	Province-level education offices
e-RKAM	Electronic Performance-based Madrasah Planning and Budgeting System (Rencana Kegiatan dan Anggaran Madrasah berbasis elektronik)
e-RKAS	Electronic Performance-based School Planning and Budgeting System (Rencana Kegiatan dan Anggaran Sekolah berbasis elektronik)
ECED	Early childhood education and development
ECERS-R	Early Childhood Environment Rating Scale Revised
EdTech	Educational technology
EGRA	National Early Grade Reading Assessment
EMIS	Education management information system
FSGI	Indonesian School Teacher Federation (Federasi Serikat Guru Indonesia)
GDP	Gross domestic product
GER	Gross enrollment rate
GERD	Gross expenditure for research and development
GGD	Frontline Teachers Program (Guru Garis Depan)
HCI	Human Capital Index

HI-ECD	Holistic integrated early childhood development
HILSSI	Association of Indonesian Training Institutions (Himpunan Lembaga Latihan Seluruh
	Indonesia)
НІРКІ	Association of Indonesian Training and Course Providers (Himpunan Penyelenggara
	Pelatihan dan Kursus Indonesia)
IQF/KKNI	Indonesian Qualification Framework (Kerangka Kerja Nasional Indonesia)
КВ	Playgroups (Kelompok Bermain)
Kemendesa	The Ministry of Villages, Development of Disadvantaged Regions, and Transmigration (Kementerian Desa, Pembangunan Daerah Tertinggal, dan Transmigrasi)
Kemenko PMK	Coordinating Ministry of Human Development and Culture (Kementerian Koordinator
	Bidang Pembangunan Manusia dan Kebudayaan)
KemenPAN-RB	Ministry of Administrative and Bureaucratic Reform (Kementerian Pendayagunaan
	Aparatur Negara dan Reformasi Birokrasi)
KIAT Guru	Teachers' Performance and Accountability (Kinerja dan Akuntabilitas Guru)
KIP	Indonesia Education Grant Card (Kartu Indonesia Pintar)
KKG	Teachers' Working Groups for primary education level (Kelompok Kerja Guru)
LA-LPK	Accreditation Agency for Nonformal Training Private Institution (Lembaga Akreditasi LPK)
LAM	Independent Accreditation Agency (Lembaga Akreditasi Mandiri)
LMOs	Labor Market Observatories
LKP	Skill Courses and Training Private Institution (Lembaga Kursus dan Pelatihan)
LPK	Nonformal training private institution (Lembaga Pelatihan Kerja)
LPMP	Educational Quality Assurance Council (Lembaga Penjaminan Mutu Pendidikan)
LPNK	Non-ministerial Government Institutions (Lembaga Pemerintah Nonkementerian)
LPTKs	Teacher training institutes (Lembaga Pendidikan Tenaga Kependidikan)
LSK	Competency Certification Authority (Lembaga Sertifikasi Kompetensi)
MA	Islamic Senior Secondary School—including some vocational schools (Madrasah Aliyah)
MGMP	Secondary School Teacher Working Group (Musyawarah Guru Mata Pelajaran)
MI	Islamic Primary School (Madrasah Ibtidaiyah)
MoEC	Ministry of Education and Culture (Kementerian Pendidikan dan Kebudayaan)
MoF	Ministry of Finance (Kementerian Keuangan)
MoHA	Ministry of Home Affairs (Kementerian Dalam Negeri)
MoM	Ministry of Manpower (Kementerian Ketenagakerjaan)
MoRA	Ministry of Religious Affairs (Kementerian Agama)
MoRI	Ministry of Research and Technology/National Research and Innovation Agency
	(Kementerian Riset dan Teknologi / Badan Riset dan Inovasi Nasional)
MORINE	Ministry of Research, Technology, and Higher Education (Rementerian Riset,
Maca	Teknologi, dan Pendidikan Tinggi) Ministry of Social Affairs (Konsenterion Social)
	Ministry of Social Allairs (Rementerian Sosial)
MOWECP	Perompuan dan Perlindungan Anak)
MSS	Minimum Service Standards (Standar Pelayanan Minimum)
MTs	Islamic Junior Secondary School (Madrasah Tsanawiyah)
MUK	Competency test materials (Materi Lii Kompetensi)
NES	National Education Standards
OECD	Organisation for Economic Co-operation and Development
ORF	Oral reading fluency
PAUD	Early Childhood Education Program (Pendidikan Anak Usia Dini)
PAUD-DAK	Early Childhood Education Special Allocation Fund (Pendidikan Anak Usia Dini -Dana
	Alokasi Khusus)
PBB	Performance-based budgeting
РВК	Competency-Based Training (Pelatihan Berbasis Kompetensi)
PDIA	Problem-driven iterative adaptation methodology
PIP	Indonesia Education Grant Programme (Program Indonesia Pintar)
PISA	Programme for International Student Assessment
РКН	Hope Family Program/Conditional Cash Transfers Program (Program Keluarga Harapan)
PNS	Civil servant (Pegawai Negeri Sipil)

PPG	Preservice Teacher Professional Education Program (Pendidikan Profesi Guru)
PPP	Purchasing power parity
RA	Islamic early childhood education (Raudhatul Athfal)
RISET	Research and Innovation in Science and Technology (Project)
RISKESDAS	Basic Health Research Results (Laporan Hasil Riset Kesehatan Dasar)
RPJMN	National Medium-Term Development Plan (Rencana Pembangunan Jangka
	Menengah Nasional)
SABER	Systems Approach for Better Education Results
SAKERNAS	National Labor Force Survey (Survei Angkatan Kerja Nasional)
SD	Elementary school (Sekolah Dasar)
SEAMEO	Southeast Asian Ministers of Education Organization
SISLATKERNAS	National Work Training System (Sistem Pelatihan Kerja Nasional)
SKD	Basic competency test (Seleksi Kompetensi Dasar)
SKKNI	Indonesian National Competency Standards (Standar Kompetensi Kerja Nasional
	Indonesia)
SM3T	Undergraduate Education Program for Border, Remote, and Underdeveloped Regions
	(Sarjana Mendidik di Daerah Terdepan, Terluar dan Tertinggal/Daerah Khusus)
SMA	General senior secondary school (Sekolah Menengah Atas)
SMK	Vocational senior secondary schools (Sekolah Menengah Kejuruan)
SMP	Junior secondary schools (Sekolah Menengah Pertama)
SN Dikti	National Standards of Higher Education (Standar Nasional Pendidikan Tinggi)
SSGBI	Toddler Nutrition Status Survey in Indonesia (Survei Status Gizi Balita di Indonesia)
SUPAS	Inter-Censal Population Survey (Survei Penduduk Antar Sensus)
SUSENAS	National Socioeconomic Survey (Survei Sosial Ekonomi Nasional)
TIMSS	Trends in International Mathematics and Science Study
тк	Kindergarten (Taman Kanak-kanak)
TPA	Childcare services (Taman Penitipan Anak)
TPG	Teacher Professional Allowance (Tunjangan Profesi Guru)
TVET	Technical and vocational education and training
UMP	Provincial minimum wage (Upah Minimum Provinsi)
UN	National exam (Ujian Nasional)
UNESCO	United Nations Educational, Scientific, and Cultural Organization
USAID	United States Agency for International Development
USBN	State standard school exam (Ujian Sekolah Berstandar Nasional)

## EXECUTIVE SUMMARY

# **Boosting learning**



n a speech following his 2019 reelection, Indonesian President Joko Widodo "Jokowi" declared his aim to develop an adaptive, productive, innovative, and competitive Indonesia that will make the country one of the strongest in the world, highlighting that the key to this more prosperous future is developing human resources.<sup>1</sup> To prosper, Indonesia needs an education and training system that can enhance the well-being of its citizens, improve its human capital, and achieve its economic and development goals. The current system delivers learning at levels far below what the children and youth of Indonesia need today, with only 30 percent of children achieving minimum scores in reading on PISA.<sup>2</sup> This is a learning crisis. To achieve the president's vision, a comprehensive change in the education and training system is needed to deliver on its promise and support the country's full participation in the fourth industrial revolution and to ensure that Indonesia harnesses the benefits of its demographic dividend.

Each year 4.2 million Indonesians leave the education system (SUSENAS 2018). The average student exits the system at 16 years old with 11 years of education. But many of those who complete secondary education do not have the skills needed in the labor market and end up in low paying work. Low skills reflect poor basic education and poor alignment between education institutions' curricula and labor market needs. Many students do not achieve minimum mastery in reading and math, and, as they engage in higher education and in technical and vocational education and training, the taught curriculum tends to be misaligned with today's market needs and those expected for Industry 4.0.

This Indonesia Education Flagship Report examines ways to strengthen education reforms and boost the learning outcomes of all Indonesian students. It focuses on how the education system can deliver on the promise of human capital for Indonesia. The recommendations focus on protecting and building human capital by increasing the capacity, equity, and accountability for learning. The report also explores what the central government can do to make changes for the better in areas under its control and how to provide better guidance and support to provinces, districts, and schools. It is unlikely that any one administration could successfully undertake all of the reforms proposed here at the same time. This summary does not attempt to prioritize them since the tradeoffs in choosing between early childhood education, teacher training, and skills development for employment are not only technical but also political and financial. The recommendations here are intended as evidence-based guidance to inform deliberations

of policymakers, implementers, teachers, students, and parents—all stakeholders in Indonesia's future.

## Indonesia has achieved much...

Education and human development are central to the Indonesian government's overall development agenda. Since the early 2000s, Indonesia has implemented a broad range of education reforms, including decentralizing much of the education system (table ES.1),<sup>3</sup> improving the achievement of teacher qualifications, and increasing education spending, up an estimated 200 percent in real terms from 2002 to 2018. These reforms have expanded access to education, particularly among disadvantaged children. The additional resources for the sector mandated by the constitutional amendment of 2002 successfully financed the expansion of education services and increased the number of teachers for new schools and classrooms, as well as for kindergartens and other early childhood programs (World Bank 2018b).

Today, Indonesia's education system is the world's fourth largest. The formal system collectively employs 3.3 million teachers educating 53.1 million children in grades 1 through 12 under both the Ministry of Education and Culture (MoEC) and the Ministry of Religious Affairs (MoRA). An additional 231,446 early childhood education services support the early learning of 7.4 million children (MoEC 2019 DAPODIK). And 4,670 higher education institutions provide services to approximately 8 million students. The nonformal vocational training system comprises more than 4,000 institutions under the supervision of MoEC and the Ministry of Manpower, as well as some line ministries (MoU of Five Ministries 2016).

### ...but needs to focus more on learning

Despite important progress in prior years, most students do not meet the national learning targets Indonesia has set for itself. Measures of learning show challenges in the early years, and learning remains low as students move on to higher grades. Learning is low both in absolute terms, below national targets, and in relative terms when compared with neighboring countries (World Bank 2018b). To reach its human capital potential and resolve this learning crisis, Indonesia's education system must now work differently.

Learning inequality is high between regions, between schools, and within schools. Some provinces in Indonesia, especially those in the central region, perform well on the national exams, while others, often in the east and far west, perform poorly. The difference between the average of the three top performing provinces and the three lowest performing provinces on the grade 12 exam for senior

Activity	Central government	Province	District/city	Schools/principals	
Education	National education	Senior secondary	Primary education	Management of individual	
management	standards Higher education	education Special education	Junior secondary education	schools—planning, budgeting, school self-evaluations	
			Early childhood education and nonformal education		
Curriculum development	National curriculum for secondary education, primary education, early childhood education, and nonformal education	Local content curriculum for senior secondary education and local special education	Local content curriculum for primary education, junior secondary education, early childhood education, and nonformal education	Implementation of local content curriculum	
Accreditation	Accreditation for higher, secondary, primary, early childhood education, and nonformal education				
Educators and educational staff management	Control of the educators' training, the hiring of permanent teaching staff, educators' transfers, and educators' career	Transfers of educators and educational staff across district/city regions within one province	Allocation and transfers of Hirir educators and educational scho staff within a district/city region	Hiring of teachers on school contracts	
	development		district-level contracts		
	Transfers of educators and educational staff between provinces				
Educational licensing	Licenses for private universities	Licenses for private secondary education	Licenses for private primary education		
	Operating licenses for foreign educational units	Licenses for private special education	Licenses for private early childhood education and private nonformal education		
Language and literature	The fostering of the Indonesian language and literature	Language and literature across district/city regions within one provincial region	Language and literature whose speakers are present within the district/ city region		
Assessment	Supervises and implements assessments		Works with schools to develop student	Performance assessments of teachers	
	of student skills on a population basis		assessments	School self-assessment against the minimum service standards	

## TABLE ES.1 Structure and functions of the Indonesian education system after decentralization

Source: Law No. 23/2014 on Regional Autonomy.

secondary schools in 2019 was 21 points on a 100point scale. Only 4 of the 34 provinces had an average grade 12 score above the minimum passing score of 55. The results are even lower for the grade 9 exam (junior secondary schools), and for technical and vocational schools (grade 12 exam).<sup>4</sup> Districts with higher incomes, large urban centers, and greater implementation capacity tend to do better than lower income, more rural districts with lower implementation capacity (World Bank 2013).

Recent policy changes in student assessment (MoEC Regulation No. 43/2019 on Administration of National Exam) are pointing in the right direction. In a major development, Minister of Education and Culture, Nadiem Makarim announced the termination of the national exams (UN or Ujian Nasional), stating, "The implementation of the national exam in 2021 will be changed to the Assessment of Minimum Competency and Survey of Character, which consists of the ability of language (literacy), the ability of math (numeracy), and the strengthening of character education."<sup>5</sup> Due to COVID-19, MoEC cancelled the national exam earlier than planned in 2020 (MoEC Circular Letter No. 4/2020). MoRA is part of this movement toward broad-based formative assessments to inform teachers of student learning needs, having committed to a revised approach to exams even earlier (World Bank 2019). The student assessment framework is currently in a period of transition, and it is essential to get it right so that it can help drive the education system at all levels to focus on improving student learning.

MoEC's authority is focused on hiring civil service teachers, establishing curricula and competency standards, and administering student learning assessments. This means that basic inputs for student learning—such as the availability and quality of textbooks and other teaching and learning materials, as well as in-service teacher training and monitoring and supporting teachers, principals, and schools—fall largely under the authority of districts and provinces. To improve student learning, subnational spending and initiatives need to be aligned with regulations and support for learning at the center. The current lack of alignment between student achievement and the system for monitoring standards needs to change in order for student learning to increase at scale.

## Schooling for learning

Schooling is not the same as learning—an insight repeatedly stressed by the 2018 *World Development Report* (World Bank 2018d). To build on its education reforms and achieve better results, continuing reform in Indonesia should advance on three fronts:

- Assess learning to make it a serious goal. Welldesigned student assessments should be used to measure the health of education systems, and not be tools for administering rewards and punishments. The results of these learning measures should be used to spotlight hidden exclusions, make choices for directing support, and evaluate progress.
- Act on evidence to make schools work for all learners. The volume and quality of evidence on how people learn have improved rapidly in recent decades, along with an increase in educational innovation. Indonesia can make better use of this evidence to set priorities for their own practices and innovations.
- Align actors to make the whole system work for learning. Classroom innovation is unlikely to have much impact if the system as a whole does not support learning. By taking account of technical and political barriers and mobilizing stakeholders, Indonesia can support innovative educators on the front lines.

### Assess learning—to make it a serious goal

In Indonesia, implementing the different laws and regulations guiding the education system is affected by the resources available, institutional capacity, politics, and ad hoc restrictions, among other variables. Earlier reforms to strengthen assessment using computer-based testing—along with more recent structural reforms to redesign the assessment mechanisms and the underlying student learning progression—are headed in the right direction, and more developments are expected in the near term.

The tradition of testing and assessment has revealed widespread learning weaknesses. Indonesia has participated in all main international tests implemented since 1990, including Trends in International Mathematics and Science Study (TIMSS) and the Programme for International Student Assessment (PISA). This allows for cross-country and across-time comparisons in learning outcomes that can identify strengths and areas for improvement.

As noted above, Indonesia is moving toward broad-based formative assessments in all grades to inform teachers of student learning needs and designing national assessments for grades 5, 8, and 11. The new directions of student and system assessment appear very positive, but they will need a broad base of support in order for them to be both sustainable and effective. It is essential that the new student assessment framework be designed, communicated, and implemented in a way that gains the support of core constituents, including teachers, parents, and civil society.

## Act on evidence—to make schools work for all learners

Measurement should guide action. To do so, measured results must be available to stakeholders. Measures of learning can motivate action by increasing participation of stakeholders in outcomes and by making information available for reform (World Bank 2018d). There is a need to make information about learning available and to support key stakeholders, including teachers, parents, districts, and provinces, to use it. This information can come in the form of student assessments, and it can also come through instruments such as the proposed Education Quality Index (see chapter 5), which is intended to bundle key information that can be used for decision-making.

One way to do this is to ensure greater ownership, engagement, and empowerment of decentralized actors to respond to local learning challenges. Improving the quality of service delivery is a particularly difficult challenge, poorly suited for a nationally homogeneous response. To drive more effective local responses, districts need support to understand the different education challenges that they face and the resources that they already possess to address them. The Ministry of Education and Culture, together with the Ministry of Home Affairs (MoHA) and others, can take a stronger role in assisting districts to define their learning-related challenges, provide resources to respond to identified obstacles, and ensure that the education system remains focused on learning.

District leaders, bureaucrats, educators, and parents need to understand that the system is failing many children on the provision of basic literacy and numeracy skills. They can understand this problem not as a national issue, but as a local one, relevant to them and their own children. They also would benefit from seeing where they are doing well, so that they have a place to start moving forward. This means that they need data that are meaningful at the district, school, and class level. It is important that teachers have the capacity and flexibility to adjust their teaching to the needs of their students, and that their principals—and school supervisors—have the ability to support them in doing so.

## Align actors—to make the whole system work for learning

Education systems require effective institutional alignment at a variety of levels and among multiple actors (figure ES.1) (World Bank 2018b).

Capacity matters for district and school level bodies. It matters for national, provincial, and municipal governments. And it matters for subnational education authorities and national ministries of education. Indeed, the strength of institutions can strongly affect the quality of interactions between education officials and providers, on the one hand, and stakeholders and civil society, especially parents and employers, on the other.

Their interactions take place within contexts shaped by political influences and political culture.



## FIGURE ES.1 Coherence and alignment for learning

Politics can drive misalignments when the vested interests of different stakeholders collide. Misalignment can occur along every step of the policy process, from defining goals to designing and implementing policies and to evaluating their effectiveness. Misalignment thus threatens to undermine the efforts of education systems to produce learning (World Bank 2018d). Deliberate policy choices to foster alignment include setting targets and demanding results, advocating for education in national spending, and providing the impetus for cross-sectoral alignment.

### The report's main recommendations

The recommendations in this report provide the building blocks for learning, and their interconnectedness and coordination among all key stakeholders are critical for providing coherence and aligning the system toward boosting learning (box ES.1). The overarching theme of boosting learning requires ensuring that students reach at least minimum learning and development standards at each level of the system. This is expected to be achievable within existing national spending levels on education, following the analysis and recommendations in the Indonesia Public Expenditure Review —Spending for Better Results (World Bank 2020). To achieve this, multiple things need to occur related to students, teachers, and management and inputs. The recommendations are highly interconnected and depend on one another for the system to function and progress as a whole.

### Students

It is essential that students come to school prepared to learn. This requires making at least two years of quality early childhood education compulsory and accessible to all. There is a need to strengthen the coverage and quality of early childhood education by ensuring sufficient funding and developing a roadmap to achieve universal enrollment by 2030. The expansion could also be incentivized, especially in areas with no early childhood services, through grants for new or additional services and the encouragement of better collaboration among stakeholders.

Ensuring that education is equitable and supports the most vulnerable students has three requirements. First is acting to guarantee equitable access to good quality education and learning by children most excluded from the system. It is important to ensure that the vision and mission of the Ministry of Education and Culture, and the policies that flow from it, are always focused on ensuring that *all* children have equitable access to good quality schooling and opportunities to learn. It is

## BOX ES.1 Twelve building blocks to boost learning

- Ensure that students reach at least minimum learning and development standards at each level of the system.
- 2. Make quality early childhood education accessible to all.
- Act to guarantee equitable access to good quality education and learning by children most excluded from the system.
- 4. Act to improve learning outcomes of the lowest performers.
- 5. Ensure that all students, including those with disabilities, succeed.
- 6a. Improve the quality of preservice institutions and the candidates that enter them.
- 6b. Recruit the best teacher candidates and distribute them effectively.
- 7. Improve professional development and calibrate incentives.
- 8. Strengthen accountability mechanisms through better data tracking and verification.
- 9. Support existing institutions to improve service delivery.
- 10. Expand access to and improve the quality and relevance of TVET.
- 11. Improve the quality, relevance, and equity of the tertiary education sector.
- 12. As a part of the COVID–19 response and recovery, strengthen the system for future shocks and stresses.

important to consider different levels and to identify districts, communities, families, and individual children who continue to be excluded from school and therefore disadvantaged in their learning. As part of understanding these factors, it is important to analyze the challenges that lead to this exclusion and inequity and develop both national and local policies and school practices to mitigate them.

Second is ensuring that learners do not fall behind by acting to improve the learning outcomes of the lowest performers. This could involve providing extra support to low-performing districts, schools, and students a priority. High-quality national student assessments would diagnose (identify and explain) low performance issues of both students and their schools and inform instruction and school management to enhance performance. Teachers would routinely assess performance daily through formative evaluation approaches. And learning data would be harnessed to identify lowest-performing schools and provide extra assistance to them.

Third is ensuring that all students, including those with disabilities, succeed. This requires identifying children with disabilities as soon as possible so that early childhood interventions can be provided. It requires teachers to work with children who have disabilities—and include them in learning. It requires assessing to what extent in the local context existing disparities in achievement are linked to gender, language interference, socioeconomic status, school violence, location, and early marriage. And it requires that small rural and remote schools be able to provide quality education.

### **Teachers**

More than 3.3 million teachers work in Indonesian classrooms every day, along with 294,000 professors and lecturers at the tertiary level and 656,000 in early childhood education (World Bank 2018b). For students to learn, teaching has to be effective, since well-trained and motivated teachers are the most fundamental ingredient for learning after the students themselves.

To improve their quality, Indonesia needs to assist them more effectively, both before they enter the classroom and throughout their careers. Only with consistently better teaching will Indonesian students achieve the foundations for later learning or gain the skills for the 21st century workplace in a competitive and globalized economy.

Indonesia's 421 teacher training institutions produce more than three times the number of teacher candidates required by the public service system. This very large number of teacher candidates, 300,000 in 2017, includes many who are underqualified, linked to the fact that nearly two-fifths of the teacher training institutions are not accredited.<sup>6</sup> There is a need to reorient the system from the *quantity* of teacher graduates to the *quality* of teacher graduates. Worryingly, very few high performers on PISA want to become teachers (OECD 2016).

Preservice teacher education should be improved with an updated curriculum, blended approaches to offline, online, and distance teaching and learning; the appointment of lecturers with experience in the education level for which they are training new teachers; and more in-school and better supervised teaching practice, beginning from the first year of the candidates' education. This should be linked to more robust engagement of teacher training institutes with the accreditation body, as well as publication of the rate of acceptance of graduates of individual institutions to civil service teaching positions.

Indonesia should insist on hiring only the most qualified candidates to become teachers. It should educate and pay them well and deploy them efficiently and equitably across the country while providing incentives and support for continuous improvement. There needs to be continuous development of teachers' skills through more effective professional development, including through lower-cost online options if proved effective. Given the need to reach more than 4 million teachers, new strategies have to be tested and scaled up in order to keep the best teachers in the classroom. Robust teacher evaluation systems should be implemented and linked to incentives based on performance. Preparing teachers better requires targeted reforms, coordinated efforts, and clear and consistent implementation of regulations across independent training and decentralized administrative systems—a major challenge.

Teacher competencies should be continually improved through high-quality teacher professional development linked to career progression and promotion. This should begin by serious processes of induction and probation and continue through systematic and regular assessment processes. The focus should be on the design and use of student learning assessments to improve teaching and student learning.

In sum, Indonesia should ensure that it has the right number of highly qualified teachers in the right locations, particularly in low-performing, remote, and rural schools, and that teachers are performing at their best. With 55 percent of civil servant teachers retiring over 10 years starting in 2018 (about 960,000 individuals), there are major opportunities and risks to reshaping the teacher workforce for the next generation (World Bank 2018c).

### **Management and inputs**

The education system's management and inputs must also be driven toward delivering learning. Supporting existing institutions to improve service delivery includes ensuring that Indonesia can build on its reforms to improve learning quality.

For schools, this involves supporting school improvement and enhancing student outcomes using the building blocks already in place—principal and teacher working groups,<sup>7</sup> school committees, education quality assurance institutes (Lembaga Penjaminan Mutu Pendidikan, or LPMPs), teacher training institutes (Lembaga Pendidikan Tenaga Keguruan, or LPTKs), high-quality schools including sekolah rujukan and sekolah model, and the province-level education offices and their supervisors. All these building blocks need further capacity development. The resulting aligned "architecture" of support can be directly involved in improving teacher performance.

For districts, it requires making staff more capable and accountable for the work they do, including clarifying the role of every education unit in enhancing learning outcomes and requiring their staff to remain in their positions following capacity-strengthening activities.

Going hand-in-hand with improving service delivery is strengthening accountability mechanisms, so that stakeholders and decision-makers are held accountable for improving education quality. Data are critical for such accountability, and there is a need to keep better track of education trends by improving MoEC and MoRA databases. This report proposes an Education Quality Index to assess quality and direct assistance to lagging districts and schools. Financial transfers should be pegged both to need and to performance.

## Learning and promoting skills for the labor market

Ultimately a goal of learning in education is the development of skills that can be used after leaving school. This can come on many tracks. Raising the performance of tertiary education requires increasing enrollments; improving equity, quality, and relevance; strengthening research and technology transfer; modernizing governance and management; and defining a sustainable financing strategy. Expanding access and improving the guality and relevance of technical and vocational education and training recognize its importance in meeting rising demand, but balancing this expansion with robust accountability mechanisms is essential. For TVET to meet the demands of the labor market, a critical step is to improve information on labor market needs and guide the overall skill development system with strong participation of the private sector.

### **Coordinating multiple actors**

Two key ministries—MoEC and MoRA—oversee formal and nonformal education.<sup>8</sup> But other ministries and institutions are also involved, such as the Ministry of Home Affairs (MoHA), the Ministry of National Development Planning (BAPPENAS), the Ministry of Manpower, the Ministry of Villages, and the Coordinating Ministry of Human Development and Culture, among others. Decentralization laws shifted the management of schools under MoEC to more than 34 provinces and 514 districts administering some 646,192 schools and other learning institutions across Indonesia's more than 17,000 islands. Some 42,800 schools are classified as 3T (Terdepan, Terluar, Tertinggal, or border, outermost, underdeveloped). The districts' highly varied institutional capacities and socioeconomic and geographic conditions affect their ability to deliver education services effectively and efficiently (World Bank 2017). Coordinating so many actors at different levels is no easy task.

That makes it essential to understand the complexity of multiple actors and the challenge of coordinating their efforts toward common goals and aligning them with a coherent vision. With Indonesia's complex system and multiple actors, this takes on particular relevance. Just as the framework in figure ES.1 shows how all actors in the system must work toward supporting the system and directing key elements toward learning (teachers, students, management, and inputs), the recommendations here consider the who, what, and how of implementation. These issues are laid out in detail in the chapters that follow.

### Rising to the challenge of COVID–19

The government of Indonesia has moved quickly to support learning during the pandemic, instituting

## BOX ES.2 Supporting human capital during the COVID-19 crisis

**Supporting learning now** is the most important thing ministries, provinces, districts, schools, and families can do. Teacher training and other support can be provided online in some cases, while clear communication with parents about scheduling of television and other educational programming can help families arrange for children to participate in distance learning. No-tech, lowtech, and high-tech approaches to supporting learning should be made available depending on the local context. As the crisis eases in the coming months, teachers and schools will also need to plan for a safe reopening so as not to trigger additional waves of infection.

Expected longer-term impacts are likely to include lost learning, increased dropout, and increased learning inequality with potential longterm impacts on human capital accumulation. Lost learning is expected at all levels of the system. Younger children may be least able to study by themselves, while older children are more likely to need to contribute to family income in a time of economic stress. Dropout is expected to be highest at higher levels of education, particularly tertiary and senior secondary (Yarrow, Masood, and Afkar 2020). It is also expected to be highest among lower-income students, who are already enrolled at lower levels than their more well-off peers. And pre-COVID-19 disparities related to disabilities, remoteness, sex, and language interference will likely have been exacerbated post-COVID-19.

Actions to mitigate the effects of the crisis over the long term include continuing to pay teacher salaries to support resilience of the overall system. This is especially important for nonprofit private schools and community-based early childhood education services which may lose enrollments due to increasing family poverty, as well as trained staff due to a lack of funding during the pandemic. As schools reopen, it will be crucial to assess students learning gaps and to differentiate instruction based on their current learning levels. Teachers will need to be supported to conduct these reentry assessments of development and learning and to follow through with targeted assistance to students to help them catch up. For tertiary institutions, some closure and consolidation may be unavoidable due to financial strain. However, this process could be organized to support improvements in overall tertiary system quality and alignment with employment opportunity.

Increasing the education's system's resilience to shock is a priority as climate change, natural disasters, and other threats will continue after this coronavirus has faded. Climate change threatens to exacerbate hydrometeorological risks, such as recurring floods in cities and landslides and drought in rural areas. Floods pose threats to Indonesians especially in major urban centers, and rain-triggered landslides are common in rural areas. Sea level rise threatens 42 million Indonesians who live less than 10 meters above sea level. Both climate and nonclimate hazards have the potential to lead to damage to education infrastructure, interrupt the teaching-learning process, and put at risk the lives and livelihoods of students and staff. Increasing system resilience through investments in online-teaching and learning capacities, securely redundant data storage systems, and disaster-resilient infrastructure are ways to mitigate the impact of future crises.

online learning and educational TV for early childhood through senior secondary (MoEC Circular Letter No. 4/2020). School closures, combined with effective implementation of social distancing for society at large, can help reduce transmission of the virus. However, the costs to student learning and the education system as a whole are expected to be significant and may be felt for years, depending on how the national government and local authorities respond (table ES.2). Estimates of the impact of just the first four months of school closure from the end of March to the end of July 2020 are an eleven-point drop on the PISA reading scale. This could drive a present value loss in lifetime earnings for all students of about US\$151 billion, equivalent to 13.5 percent of 2019 GDP. These losses are expected to increase in the coming months as schools gradually re-open (and possibly re-close) (Yarrow, Masood, and Afkar 2020).

The government has shown itself to be adaptable in its response, quickly moving to institute educational TV when it became clear that many students lacked consistent access to high-speed internet and that distance learning approaches other than online were necessary to support equity (Yarrow, Masood, and Afkar 2020). In some areas, communities and local governments have also provided support. For example, in some areas village offices (Balai Desa) utilized villages fund (Dana Desa) to provide internet connections and learning materials.<sup>9</sup>

## Capitalizing on education's promise

The Indonesian education system has a great deal of promise. To capitalize on that promise, student learning should be a focus and underlying driver to improve the country's education system. This report will focus on learning and how, for every aspect and level of Indonesia's education system, the question should be asked: What can the government do to shift its focus toward the improvement of learning? Looking forward, improving learning is about the context and how policies and interventions are implemented. Large improvements in Indonesia's human capital depend on shifting how the education system operates, specifically aligning and strengthening the capacities, effectiveness, autonomy, and accountability of teachers, principals, and local, regional, and national actors and institutions.

With one-half of Indonesians under the age of 30, the population is very young. A demographic dividend—from having more workers in relation to dependents—is already materializing, and appropriate policies can ensure that the country benefits from it. A large number of young people are entering the labor market with the potential to boost

## TABLE ES.2 Direct impact of the crisis on schools, as of June 6, 2020

	Number of schools	Number of students	Number of teachers
Total	646,192	62,561,660	3,147,870

*Source:* Ministry of Education and Culture, Update on COVID–19 in Education (presentation), June 6, 2020.

*Note:* This reflects school closures as of June 6 (based on DAPO-DIK and EMIS data updates, May 2020).

overall productivity and economic growth. And the school population is starting a gradual decline that will eventually free up resources to improve education guality (SUPAS 2015). The dividend is expected to peak between 2020 and 2030, when the share of the working age population and the potential for increased output per capita will be at their highest. Although an expanded range of lifelong learning opportunities could sustain the dividend longer, the opportunity presented by this dividend is rapidly slipping away as the "golden generation" leaves the education system-it will be lost entirely if the education provided this generation is not of the best quality. But if this opportunity is grasped and a more productive workforce is created, Indonesia will be much more likely to reap the predicted benefits of Industry 4.0.

The current administration is planning to take action to reverse the country's human capital shortfall. It is developing an ambitious program of investing in people to improve health, nutrition, and education outcomes—all key for developing human capital and a more productive labor force.

## References

- MoEC (Ministry of Education and Culture). 2019. DAPO-DIK (Data Pokok Pendidikan Dasar dan Menengah).
- OECD (Organisation for Economic Co-operation and Development). 2016. *PISA 2015 Results: Excellence and Equity in Educati*on. Vol. 1. Paris, France: OECD. https://www.oecd-ilibrary.org/education/pisa-2015 -results-volume-i\_9789264266490-en.
- SUPAS (Survei Penduduk Antar Sensus). 2015. Intercensus Population Survey.
- SUSENAS (Survei Sosial Ekonomi Nasional). 2018. Natior nal Socioeconomic Survey.
- World Bank. 2013. Local Governance and Education Performance: A Survey of the Quality of Local Education Governance in 50 Indonesian Districts. Jakarta: World Bank.
  - 2017. Indonesia Economic Quarterly, December 2017: Decentralization that Delivers. Washington, DC: World Bank. https://openknowledge.worldbank.org/ bitstream/handle/10986/29726/125302-WP-P165633
     -PUBLIC-december-2017.pdf.



——. 2018a. Growing Smarter: Learning and Equitable Development in East Asia and Pacific. Washington, DC: World Bank. doi:10.1596/978–1-4648–1261–3.

. 2018b. Indonesia Economic Quarterly: Learning More, Growing Faster. June. Jakarta: World Bank. https:// openknowledge.worldbank.org/handle/10986/29921.

2018c. Mapping Indonesia's Civil Service. Washington, DC: World Bank. http://documents.worldbank.org/curated/en/643861542638957994/pdf/126376
 Mapping-Indonesia-Civil-Service-14977.pdf.

. 2018d. World Development Report 2018: Learning to Realize Education's Promise. Washington, DC: World Bank. https://www.worldbank.org/en/ publication/wdr2018.

—. 2019. Indonesia—Realizing Educations Promise: Support to Indonesia's Ministry of Religious Affairs for Improved Quality of Education Project (English). Washington, DC: World Bank. http://documents.worldbank. org/curated/en/253961561860072917/Indonesia-Realizing -Educations-Promise-Support-to-Indonesias-Ministry-of -Religious-Affairs-for-Improved-Quality-of-Education -Project.

- ——. 2020. Indonesia Public Expenditure Review 2020: Spending for Better Results. Washington, DC: World Bank. https://openknowledge.worldbank.org/handle /10986/33954.
- Yarrow, N., E. Masood, and R. Afkar. 2020. Estimated Impacts of COVID-19 on Learning and Earning in Indonesia: How to Turn the Tide. Jakarta: World Bank. https://openknowledge.worldbank.org/bitstream/ handle/10986/34378/Main-Report.pdf.

### Government laws and regulations

- Law No. 23/2014 on Regional Autonomy. https://peraturan. bpk.go.id/Home/Details/38685/uu-no-23-tahun-2014.
- MoEC Circular Letter No. 4/2020 on Implementation of Education Policies in Emergency Spread of COVID–19. https://jdih.kemdikbud.go.id/arsip/SE%20Menteri%20 Nomor%204%20Tahun%202020%20cap.pdf.
- MoEC Regulation No. 58/2015 on Administering School/ Madrasah Exams or Other Equal Forms. http://simpuh. kemenag.go.id/regulasi/permendikbud\_58\_15.pdf.
- MoEC Regulation No. 43/2019 on Administration of National Exam. https://jdih.kemdikbud.go.id/arsip/Permendaikbud %20Nomor%2043%20Tahun%202019.pdf.

## **CHAPTER 1**

# Boosting learning: Indonesia's education challenge



ndonesia has implemented major policy reforms in recent years to improve education across one of Asia's biggest economies, increasing spending and expanding the reach of an education system that spans the world's largest archipelago.

Despite the increased spending and higher enrollments, achieving desired educational standards and outcomes still lags behind aspirations and expectations. Much remains to be done to improve instruction and learning environments, upgrade the quality of teachers and their training, raise standards for the administration and management of schools, and strengthen coordination and accountability across sectors and levels of government—in other words, to "boost learning." In all of these areas, Indonesia needs practical solutions to match its Asian neighbors and compete in a globalized world that requires an educated workforce for success.

## Geopolitical, historical, and economic context

Indonesia comprises more than 17,000 islands spread over 5,000 kilometers east to west and spans three time zones. With 268 million people (2018), it is the world's most populous Muslim-majority nation. Its population has a median age of 28.8 years and is expected to exceed 318 million by 2045 (BAPPENAS, BPS, UNFPA 2018).<sup>10</sup> Resource-endowed and rapidly urbanizing, it is the world's 10th largest economy, and if current growth rates are sustained, it is expected to become the 4th largest economy by 2050.<sup>11</sup>

Sitting astride the sea lanes that link the Indian and Pacific Oceans, carrying much of the world's trade, Indonesia is rich in natural resources, minerals, oil, tropical forests, and fertile agricultural land. These resources, together with the islands' strategic location, have long made Indonesia attractive to foreign traders and investors.

As a newly designmated upper-middle-income economy, Indonesia has charted impressive economic growth since overcoming the Asian financial crisis of the late 1990s.<sup>12</sup> Its GDP per capita rose steadily from US\$807 in 2000 to US\$3,877 in 2018. It has also made large gains in poverty reduction, cutting the poverty rate by more than half since 1999, to 9.8 percent in 2018. As a result of global economic contraction linked to COVID–19, Indonesia's economic outlook has turned slightly negative.<sup>13</sup>

Indonesia has more than 700 distinct ethnic and linguistic groups, with more than 40 percent of Indonesia's population live on the island of Java (Ethnologue 2019). The majority are Muslim (87 percent), almost 10 percent are Christian, and the rest include Hindus, Buddhists, Confucianists, and members of other faiths.

Indonesia's education system reflects this diverse religious and cultural heritage, the country's struggle for national identity, and the challenge of resource allocation in a geographically scattered developing nation with a young and rapidly growing population. Before colonial times, schools were commonly founded by Islamic scholars, and the Dutch introduced limited elementary education, but schools remained dispersed and varied in quality. Much of the population was illiterate, as recognized at independence, when the new 1945 Constitution declared that "every citizen has the right to education." A huge push in the 1970s resulted in constructing 61,000 primary schools throughout the country between 1973 and 1978 (Duflo 2001).

Indonesia's school system today is both immense and diverse. All citizens must undertake 12 years of compulsory education, 6 years at elementary level, and 3 each at middle and high school levels. Although early childhood education is not yet compulsory, the subsector is growing and the intent is to make it compulsory by 2030 (see chapter 2). Major policy reforms in previous decades dramatically improved access to education, including raising the average years of education for individuals 20–25 years old, even with rapid population growth, from 6.95 years in 1987 to 10.94 years in 2018 (SUSENAS 1987, 2018). Since 2002, further efforts have dramatically raised spending and expanded enrollment.

## Education is central to the government's development agenda

Since the mid-2000s, Indonesia has attempted to implement a broad range of education reforms, decentralizing parts of its school system, improving teacher training standards, and boosting education spending (about 20 percent of the national budget is for education each year).<sup>14</sup> But as a share of GDP, spending remains below that in neighboring countries.<sup>15</sup>

## Strengthening human capital to meet the country's development goals

In a speech following his 2019 reelection, Indonesian President Joko Widodo (popularly known as Jokowi) declared his aim to develop an adaptive, productive, innovative, and competitive Indonesia that would make the country one of the strongest in the world. He highlighted that the key to this more prosperous future was in the development of human resources (State Address, August 2019). This vision is also outlined in the Rencana

Pembangunan Jangka Menengah Nasional 2020-2024 (RPJMN or National Medium Development Plan), chapter 4, which aims to develop "quality and competitive human resources," who are "healthy and smart, adaptive, innovative, skilled, and of character." In order to prosper, Indonesia needs an education and training system that can enhance the well-being of its citizens, improve its human capital, and achieve its economic and development goals. But the current education system delivers insufficient student learning, resulting in a learning crisis. For example, while its science score on international tests has been increasing, its score of 396 is still below what is predicted by Indonesia's income and 93 points below the OECD average (World Bank 2018a). To achieve the president's vision, a comprehensive change in the education and training system is needed to deliver on its promise to support the country's full participation in the fourth industrial revolution and harness the benefits of Indonesia's demographic dividend.

### Indonesia ranks 87th on the World Bank's Human Capital Index

While Indonesia has made significant progress in recent years, it is still hamstrung by a human capital deficit. The index measures the human capital that a child born today can expect to attain by age 18. The rankings, based on health, education, and survivability measures, assess the future productivity and earnings potential for citizens of the World Bank's member nations and ultimately those countries' potential economic growth.

The index showed that on average globally 56 percent of children born today will forgo more than half their potential lifetime earnings because governments were not investing adequately to ensure their people are healthy, educated, and ready for an evolving workplace (box 1.1). Four Asian countries top the global HCI list—Singapore, Republic of Korea, Japan, and Hong Kong SAR China, in that order. Indonesia ranked 87 out of 157, lower than the average for Southeast Asia but higher than the average for its income group.

### Student learning remains low

Improving Indonesia's human capital is a complex and long-term agenda that must be at the core of the government's growth strategy. It is clear that this requires upgrading the education system at all levels, from early childhood education through tertiary education and lifelong learning opportunities.

Each year 4.2 million Indonesians leave the education system, and the average student exits the system at 16 years old with 10.9 years of education (SUSENAS 2018). This is the actual years of education reported by individuals aged 20–25. Based on improvements to the education system in the last decades, a child entering the system today can expect to complete 12.3 years of education. But

### **BOX 1.1** How Indonesia fares on the Human Capital Index

The index is made up of five indicators: the probability of survival to age five, a child's expected years of schooling, harmonized test scores as a measure of quality of learning, adult survival rate (fraction of 15-year-olds who will survive to age 60), and the proportion of children who are not stunted because of malnutrition and other factors.

- Human Capital Index: A child born in Indonesia today will be 54 percent as productive when she grows up as she could be if she completed basic education of 14 years and enjoyed full health.
- Probability of survival to age 5: 98 out of 100 children born in Indonesia survive to age 5.
- Expected years of school: In Indonesia, a child who starts school at age 4 today can expect to complete 12.4 years of school by her 18th birthday.

- Harmonized test scores: Students in Indonesia score 395 on a scale where 625 represents advanced attainment and 300 represents minimum attainment.
- Learning-adjusted years of school: Factoring in what children actually learn, the "actual" years children spend in school is only 7.8 years.
- Adult survival rate: Across Indonesia, 85 percent of 15-year-olds will survive until age 60. This statistic is a proxy for the range of fatal and nonfatal health outcomes that a child born today will experience as an adult under current conditions.
- Healthy growth (not stunted) rate: 72 out of 100 children are not stunted—28 of 100 children in Indonesia are stunted, and so at risk of cognitive and physical limitations that can last a lifetime.

Source: Human Capital Index 2020. https://databank.worldbank.org/data/download/hci/HCI\_1pager\_IDN.pdf.

many of those who complete secondary education do not have the skills needed in the labor market and end up in low-paying occupations (World Bank calculations based on SAKERNAS data).<sup>16</sup> Low skills reflect poor basic education and poor alignment between education institutions' curricula and labor market needs. More than 55 percent of students do not achieve minimum mastery in literacy and math, and when they engage in TVET and higher education, the curriculum tends to be misaligned with today's market needs or those expected for Industry 4.0 (World Bank 2018b).

Despite the large increase in spending and resources, student learning remains low, and inequality in learning outcomes is increasing. The learning gap between the bottom and top 50 percent of students by household income increased from approximately 0.7 years of learning in 2003 to 0.8 years of learning in 2018.<sup>17</sup>

## Educating to reap the demographic dividend will pay off

Demographics will play an important role in Indonesia's future competitiveness. A population's changing age structure can provide a powerful stimulus to economic growth and family welfare. The current demographic conditions in Indonesia can potentially support a "demographic dividend." With 50 percent of Indonesians under the age of 30, the population is very young. A demographic dividend—from having more workers in relation to dependents—is already materializing, and appropriate policies can ensure that the country maximizes benefits from it.

Taking action to reverse the country's human capital shortfall, the new administration is implementing an ambitious program of investing in people to improve health, nutrition, and education outcomes, all key for developing human capital and a more productive labor force. A large number of young people are entering the labor market with the potential to boost overall productivity and economic growth. The number of people in the workforce is expected to peak between 2020 and 2030, when the share of the working-age population and the potential for increased output per capita will be at their highest (figure 1.1). This demographic dividend is happening at the same time as the number of school-age children starts a gradual decline, which will eventually free up resources to improve education quality (SUPAS 2015).<sup>18</sup>

Although this opportunity is rapidly slipping away as this "golden generation" leaves the education system, an expanded range of lifelong learning opportunities could sustain the dividend longer. If this opportunity is missed, Indonesia will likely not reap the predicted benefits of Industry 4.0 and will thus risk being saddled with a less productive workforce for the next generation.

Policies that extend access to education and build the right skills base can help Indonesia take advantage of this demographic shift. Indonesia has continuously attempted to reform its education system from early childhood education to higher education and upgrade teaching standards. School attendance has grown significantly, but student learning remains below the levels of



Source: UN Population Division, World Population Prospects: The 2012 Revision, as cited in Hayes and Setyonaluri (2015).

other countries in the region, compromising the country's competitiveness in the global economy. Indonesia can now revisit the reforms with an eye toward boosting learning for all—to improve educational quality and to halt a growing inequality of outcomes in order to adequately develop human capital and meet its objectives to inclusive growth and poverty reduction.

Since the early 2000s, Indonesia has increased education spending, up 200 percent in real terms from 2002 to 2018 (World Bank calculation). Although Indonesia officially allocates 20 percent of its national budget to education, it is spending less as a percentage of GDP than comparable countries, largely due to low levels of revenue collection. For example, Indonesia's spending on education was 3.3 percent of GDP in 2014, falling to 3.1 percent in 2018, less than Malaysia's 4.7 percent in 2017 and Vietnam's 4.4 percent in 2016 (UNESCO UIS Data 2018). For countries participating in PISA, Indonesia is among those with the lowest education spending in purchasing power parity (PPP) terms (World Bank 2018a).

With an increased budget for education in 2005, the national government launched a major program called BOS (Bantuan Operasional Sekolah, or School Operational Fund), which has grown in value over time. The program injected funds directly into schools on a per capita basis to keep children in school longer, provide them an education of better quality, and give schools some flexibility in managing funds. But because tax revenues are low, with a tax to GDP ratio of about 10.2 percent, the absolute value of spending per student remains lower than in other middle-income countries, even though the education budget is nominally fixed at 20 percent of the national budget. This complicates the process of "boosting learning."

## A diverse and complex system

Indonesia's education system is the 4th largest in the world with 3.9 percent of the world's student population. As part of an overall decentralization process throughout most of the government, Indonesia has since 1999 decentralized much of the education system so that it now involves multiple actors at the central, provincial, district, and school levels (Law No. 23/2014 on Regional Autonomy and Law No. 33/2004 on Fiscal Balance). The formal system collectively employs 3.3 million teachers educating 53.1 million children in grades 1 through 12 under the Ministries of Education and Culture (MoEC) and of Religious Affairs (MoRA). An additional 231,446 early childhood education services support the early learning of 7.4 million children (MoEC DAPO-DIK 2019). And 4,072 higher education institutions

provide services to 7.7 million students. The nonformal vocational training system comprises more than 40,000 institutions under the supervision of MoEC, the Ministry of Manpower, and other line ministries.

## The decentralization process has revealed weak checks and balances in education delivery

Decentralization is well suited to a large system such as Indonesia's, but smaller districts tend to have low capacity to manage their education services, with negative impacts on spending efficiency and student learning (Al-Samarrai 2013, World Bank 2018b). Access to basic services after decentralization, as measured by an index of five indicators, increased from 48.8 percent in 2001 to 70.9 percent in 2011. Variation in access across districts declined, and this was most prominent in junior secondary and senior secondary enrollment. But there were no improvements in education outcomes at the national level. From 2000 to 2015, PISA scores improved slightly before declining in 2018 to at or just above 2000 levels, depending on the subject (OECD 2019). The decentralization process also revealed weak systems of checks and balances in education service delivery among different actors at the central level and between central and subnational levels (Al-Samarrai 2013, World Bank 2017).

## Coordinating multiple actors at multiple levels is difficult

Two key ministries—MoEC and MoRA—oversee formal education.<sup>19</sup> But other ministries and institutions are also involved, such as the Ministry of Home Affairs (MoHA), the Ministry of National Development Planning (BAPPENAS), the Ministry of Administrative and Bureaucratic Reform of the Republic of Indonesia (KemenPAN-RB), the Ministry of Villages (KEMENDESA), and the Coordinating Ministry of Human Development and Culture (KEMENKO PMK), among others. Decentralization laws shifted the management of schools under MoEC to 34 provinces and 514 districts administering some 340,000 schools and other learning institutions across Indonesia's more than 17.000 islands. Some 42,800 schools are classified as 3T (Terdepan, Terluar, Tertinggal, or border, outermost, underdeveloped). The districts' highly varied institutional capacities and socioeconomic and geographic conditions affect their ability to deliver education services effectively and efficiently (World Bank 2017). Coordinating so many actors at different levels is not an easy task.

The two ministries responsible for managing the primary and secondary education system are MoEC, with 84 percent of schools, and MoRA, with

## **BOX 1.2** Madrasahs are an integral part of Indonesia's education system

About 18 percent of Indonesian schools (primary and secondary) are madrasahs.<sup>1</sup> Unlike MoEC schools, which are directly managed by local governments, the MoRA system is centralized. MoRA students account for 15 percent of Indonesia's primary and secondary enrollment (8 million out of 53 million), with 92 percent of them studying in private madrasahs.

MoRA maintains oversight over both public and private madrasahs across the country in both urban and rural areas. Madrasahs enroll economically vulnerable students at a higher rate than MoEC, and have a higher proportion of female students (Asadullah and Maliki 2018), making madrasah education crucial to achieving the government's education goals. MoRA also manages formal and nonformal education for students of four other recognized religions (Christianity, Kong Hu Cu or Confucianism, Hinduism, and Buddhism).

Similar to the general education system, there are four levels of madrasah education: RA (Raudhatul Athfal, equivalent to kindergarten), MI (Madrasah Ibtidaiyah, equivalent to primary level), MTS (Madrasah Tsanawiyah, equivalent to junior secondary), and MA (Madrasah Aliyah, equivalent to senior secondary and including some vocational schools). Madrasahs use the national curriculum with supplemental religious curricula.

Nonpublic or private madrasahs<sup>2</sup> (mostly registered, community-based charities rather than for-profit institutions) account for 92 percent of MoRA's schools and charge no fees to their students (Law No. 20/2003 on the National Education System). They are part of "yayasan," nonprofit foundations often established by prominent community members or community associations. Although managed and funded by these foundations, private madrasahs are eligible to receive financial support from both central and local governments, with the proportion of government funding for private madrasahs ranging between 40 and 75 percent. The total amount of public financing depends on district or provincial government priorities and local understanding of regulations (ACDP 2013). MoRA exerts limited authority over private education institutions, and therefore enforcement of government regulations is challenging. This is a driver behind weaknesses in personnel, management, and infrastructure, found especially in private madrasahs, which limit the potential of the religious education system. Only 14 percent of private madrasahs are accredited A, while more than half of public madrasahs receive an A accreditation (BANSM 2019).<sup>3</sup>

#### Notes

1. Based on MoRA Regulation No. 60/2015, a madrasah can be defined as a formal education system under MoRA that conducts general and vocational education with Islamic studies from primary to senior secondary levels (http://simpuh.kemenag .go.id/regulasi/pma\_60\_15.pdf).

2. Some private madrasahs charge high fees and cater to wealthy households, while many charge little to no fees and cater to poor households. The latter are usually initiated by local citizens to provide formal education to their communities and are often attractive due to the affordability of school fees, the proximity of schools to low-income households, the likelihood that their teachers will come from the local community, and the more lenient enrollment requirements—which, for more elite schools, may include having birth certificates and achieving minimum graduation/entrance scores (Rahman 2016).

3. Based on the Education Law No. 20/2003, accreditation is a process to determine the eligibility of both formal and informal institutions across all levels of education. Accreditation is conducted by a government agency called BAN–PAUD for early childhood education and development, BANSM for schools, and BANPT for higher education. The accreditation uses criteria available to the public.

the remaining 16 percent (box 1.2). Private schools play an important role, especially in MoRA and in higher levels of education. While only 12 percent of MoEC primary schools are private, the shares increase to 42 percent in junior secondary and 51 percent in senior secondary.

### Most public financing of education comes from the center and is managed subnationally

To fund the education sector in a decentralized context, the central government supports local

governments through fiscal transfers. Most of the public financing to the education sector comes from the central government, but nearly two-thirds of education spending is managed by subnational governments—provinces and districts.<sup>20</sup> The national government allocated Rp 492 trillion for education in 2019. Of this, Rp 52 trillion were for education services under MoRA, while MoEC was allocated Rp 36 trillion. The majority, Rp 308 trillion, was transferred to local governments (Presidential Regulation No. 107/2017, Presidential Regulation No. 129/2018),

and the remainder allocated to tertiary education and other education spending.<sup>21</sup> These large local government transfers include allocations to:

- The general allocation fund (DAU), mostly for recurrent expenditures of the local governments including teacher salaries. DAU made up 34 percent (Rp 168.8 trillion) of the total allocated at the national level for general education in 2019.<sup>22</sup>
- Earmarked transfers (DAKs), including:
  - Teacher professional and special allowances, which make up 12 percent (Rp 56.8 trillion).
  - The Bantuan Operational Sekolah (BOS) per student school grant, which is 10 percent (Rp 51.2 trillion).
  - The transfers for preschools (BOP PAUD), at 1 percent (Rp 4.4 trillion).
  - A special allocation fund for education construction (DAK–Fisik), at 3 percent (Rp 16.8 trillion).

Tertiary education (see chapter 6), including teacher training (see chapter 4), has been administered by the Ministry of Research, Technology, and Higher Education (MoRTHE), but in the new government, higher education returned as a Directorate General of MoEC.

Since the early 2000s, Indonesia has implemented a broad range of education reforms, including increasing education spending, decentralizing much of the education system,<sup>23</sup> and improving the achievement of teacher qualifications. These reforms have expanded access to education, particularly among disadvantaged children. The additional resources for the sector mandated by the constitutional amendment of 2002 financed the expansion of education services and increased the number of teachers for new schools and classrooms, as well as for kindergartens and other early childhood programs (World Bank 2018b).

## TABLE 1.1 Reasons children 16–18 are not in school

	Indonesia		
Main reason	Male	Female	Total
Insufficient funds	33.0	30.7	32.0
Working	18.7	13.7	16.5
Marriage	0.4	12.3	5.6
Taking care of the household	0.4	3.7	1.8
Assume that education is enough	4.3	5.2	4.7
Embarrassed because of economy	2.9	1.9	2.5
School is far	3.7	3.3	3.5
Disabled	5.4	4.8	5.1
Others	31.3	24.5	28.3
Total	100	100	100

Source: World Bank based on SUSENAS 2017.

## Enrollments are up by more than 10 million

Since 2002, the total enrollment of students has increased by more than 10 million (31 percent), mostly in secondary education. The average rate of increase between 2000 and 2015 was 0.26 years of education per calendar year—more than doubling the rate 50 years earlier. Between 2002 and 2017, enrollments of youth age 16–18 increased from 50 percent to 71 percent.<sup>24</sup>

The additional resources for the sector mandated by the Constitution financed the expansion of education services, especially for secondary education, and expanded the number of teachers and enhanced their welfare. The additional resources allocated to schools to support school-based management reduced the financial burden on families and promoted enrollment. Complementing these resources were direct transfers to students of poor families through the Program Indonesia Pintar (PIP).

National statistics show that the enrollment rate for 13-15-year-olds increased from 88 percent of students in 2011 to almost 95 percent just four years later (Statistics Indonesia 2015). This increase is consistent with the improvement in PISA coverage, a measure of the proportion of 15-yearolds in a country who are eligible to sit for the PISA assessment—that is, those who are enrolled in a school at grade 7 or above-which doubled between 2003 and 2018. From 2015 to 2018, the portion of 15-year-old students represented in the PISA sample grew from 58 percent to 85 percent (OECD 2019).<sup>25</sup> And between 2002 and 2017, school enrollments among youth ages 16 to 18 rose from 50 percent to 71 percent. This increase was larger among students in the lowest income quintile, for whom participation rates almost doubled from 32 percent to 57 percent. As a result, the gap in school enrollment in the 16-18 age group between the poorest and richest quintiles came down from 37 to 25 percentage points.

These achievements should not, however, detract attention from the large number of children still excluded from school (29 percent for children ages 16–18), for reasons of poverty but also of early marriage, disability, and remoteness (table 1.1). National programs and local solutions addressing these exclusionary factors, such as the PIP for children of poor families, are needed to further expand access to Indonesian education.

## But the system still lags behind its promise and potential

Despite the achievements—more financing, greater access, decentralized governance—education is still lagging behind in fulfilling its potential in many



## FIGURE 1.2 Student enrollments and numbers of teachers, 2009/10 to 2016/17

ways. It is these "lags" that must be resolved to "boost learning" in Indonesian education.

## Indonesia made the right moves but has to work differently to increase learning

Most students do not meet the national learning targets Indonesia has set for itself. Measures of learning show that 40 percent of second graders cannot recognize two-digit numbers, and 50 percent of fourth graders cannot arrange a series of four-digit numbers by value (World Bank data 2011). And learning remains low as students move across grades—both in absolute terms, below national targets, and in relative terms, when compared with neighboring countries (World Bank 2018b). Taking into account the recent trend in PISA scores, it will take radical reform for Indonesia to reach the average OECD levels.

To realize its human capital potential, Indonesia must now ensure that all students meet basic metrics for reading and writing. They must also develop 21st-century skills, those valued in the job market such as creativity, communication, and critical thinking, as well as grit and other sociobehavioral skills that can help students succeed in the workplace (World Bank 2019b).

## Learning poverty and learning inequality are both high

Learning inequality is high between regions, between schools, and within schools (box 1.3). Some provinces in Indonesia, especially those in the central region, perform well on the national exam, while others, often in the east and far west, perform poorly (box figure 1.3.1).

The difference between the average of the three top performing provinces and the three lowest performing provinces on the grade 12 national exam (SMA, senior secondary schools) is 21 points on a 100-point scale. Only 4 of the 34 provinces had an average grade 12 score above the minimum passing score of 55. The results are even lower for the grade 9 exam (SMP, junior secondary schools), and for technical and vocational schools (SMK, grade 12 exam). Districts with higher incomes in large urban centers and with greater implementation capacity tend to do better than lower income, more rural districts with lower implementation capacity (World Bank 2013).

# Students consistently fail to meet both the country's own learning standards and international standards

### National standards

The national exam at the end of primary school was transformed into a locally designed and administered test (USBN), and the UN (Ujian Nasional) or national exam for grades 9 and 12 has not been a graduation requirement since 2015 (MoEC Regulation No. 58/2015). The average score across all subjects and school types for the national endof-secondary exam was 49.5 points of 100 in 2018; the minimum passing score is 55 (MoEC 2019). This means that students, on average, fail the summative secondary exam.

## **BOX 1.3** Learning poverty and learning inequality

Learning poverty is the share of children in a country who are either not enrolled in school or not proficient in reading at age 10. Indonesia's learning poverty rate is estimated at 35 percent, though the data used for this calculation are from 2011 since there is no more recent nationally representative test of student learning outcomes at the primary level (World Bank 2019a). Learning inequality is the difference in achievement between the poorest quintile and the richest quintile. In Indonesia, this difference is large, with PISA data showing that the gaps are growing.





Source: World Bank, based on Ministry of Education and Culture data 2019. https://hasilun.puspendik.kemdikbud.go.id.

### Early grade reading assessments

The March–April 2014 National Early Grade Reading Assessment measured the basic skills that a student must possess to eventually be able to read fluently and with comprehension.<sup>26</sup> Overall, the assessment revealed that students tended to be reading at relatively high levels at the end of grade 2—with particularly impressive performance in the Java and Bali regions. Only 5.9 percent of these second-graders could be characterized as nonreaders. Conversely, nearly half of the students (47 percent) could be characterized as reading fluently with comprehension. And more than one-quarter of the students (26 percent) were reading with comprehension, albeit at a less-than-fluent pace.

But the results were not consistent across regions, gender, or categories of student demographics. For example, students from Java and Bali significantly outperformed all other regions on oral reading fluency—outscoring the national average by more than 7 correct words per minute. And although these results are more positive than those of the Ujian Nasional and PISA (see below), measuring basic skills at an early age reveals stark differences by characteristics of the students tested.

There is little evidence of effective support or pressure to improve teaching and learning in classrooms based on these results, especially for the lowest performing students and regions. Instead, the system has moved away from testing and accountability for delivering student learning. While some decentralization of assessment is in line with the broader political process of decentralization, Indonesia's students need a national assessment in at least one grade in primary school to ensure that those who are not learning foundational skills in reading and math are prioritized for support. In response to the poor results, the education system at all levels should focus on improving learning.

### International standards

Another example of Indonesia's "lagging behind" in reaching standards is in international comparisons of human capital. In such comparisons, Indonesia continues to rank lower than it should given other indicators of education financing and national development.

As part of an enduring commitment to evaluation and improvement, Indonesia has participated in all major international tests since 1990, including the OECD's Programme for International Student Assessment (PISA) and Trends in International Mathematics and Science Study (TIMSS).

OECD's Programme for International Student Assessment (PISA) 2018 shows that Indonesia continued to lag behind the OECD and East Asia and Pacific averages, ranking 73 of 78 on reading (score 371), 73 of 79 on mathematics (score 379), and 70 of 79 on science (score 396). Indonesia's scores did increase from 2012 to 2015: science scores among 15-year-old students rose by 21 points. Indonesia also showed strong gains in mathematics between 2003 and 2015, coinciding with the rapid expansion of enrollment in Indonesia and incorporating students from low socioeconomic conditions into the education system (table 1.2). But some of the gains on PISA registered to 2015 were lost between 2015 and 2018. As one might expect, its scores are far below those of OECD countries and East Asian high-income countries. But even with the average for Southeast Asian developing countries, Indonesia's performance was lower in reading (by 14 points), math (by 25 points), and science (by 13 points) (World Bank 2018a).

The Trends in International Mathematics and Science Study (TIMSS) assessment in 2015 showed similar results, with Indonesia ranking among the lower-achieving countries.

### Learning is "flat"

Learning across grades is relatively flat. Using the Indonesia Family Life Survey, a team of international researchers led by Amanda Beatty (2018) found that Indonesia had achieved high levels of school enrollment during 2000–14, with particular gains concentrated in junior secondary and senior secondary school. But they also found a large gap between students' mathematical ability and what they were supposed to know based on the education curriculum. Absolute learning levels as well as marginal learning levels were low, meaning that students were learning little as they are promoted from grade to grade. Even secondary school graduates struggled to correctly answer numeracy problems that they should have mastered in primary school. They also found that learning was decreasing slightly over time. Although based on a narrow dataset, children with low numeracy were more likely to live in eastern Indonesia, in rural areas, and be older and male.

### TABLE 1.2 Indonesia's PISA scores, 2000–18

	Reading	Math	Science
2000	371	367	393
2003	382	360	395
2006	393	391	393
2009	402	371	383
2012	396	375	382
2015	397	386	403
2018	371	379	396
OECD 2018	487	489	489
East Asia and Pacific 2018ª	472	490	487
Southeast Asia developing <sup>b</sup>	385	404	409

Source: World Bank Indonesia 2018 PISA Brief. Notes

a. East Asia and Pacific includes high-income countries in East Asia.

b. Southeast Asia developing countries include Brunei Darussalam, Indonesia, Malaysia, Philippines, and Thailand.

## Teaching quality and deployment remain major challenges

The number of teachers grew by 30 percent between 2003 and 2015, while the number of students rose by 25 percent, reducing studentteacher ratios. But lower student-teacher ratios have not increased learning, and teachers employed in rural and remote regions continue to be the least qualified. With decentralization, the capacity of MoEC to do much about these geographic disparities is limited. Recent attempts to solve this problem—such as Guru Garis Depan, which has attempted to transfer teachers to remote, border, and underdeveloped areas—have not succeeded as planned. But further regulations are being discussed to make employment in rural areas more attractive and obligatory.

Another challenge relates to the frequent reliance by teachers on rote learning by students. Evidence from the 2011 TIMSS survey suggests that teachers of mathematics and science in Indonesia are more likely to be leading a class by rote learning than is evident in many other countries.

### Inequality is still a major problem

An inclusive education system attempts to remove all barriers to schooling and learning. Indonesia can improve its education system only to the extent it addresses exclusions and inequity. This includes exclusions related to location (urban-ruralremote, or across different regions and islands), poverty, gender, disability, and language/ethnicity (where the home language is different from the school language). About 0.26 percent of children ages 7–18 have been identified as having a physical disability, and 0.48 percent as having either a physical or mental disability (table 1.3). The actual numbers are likely much higher, given the limited capacity to identify these children.

## TABLE 1.3 Students with disabilities

	Age category			
Description	7–12 years	13–15 years	16–18 years	Total
Population	28,364,579	13,699,643	13,643,983	55,708,205
Disabled <sup>a</sup>	73,625	35,745	36,594	145,604
$Disabled^b$	129,923	65,047	70,169	265,139

Source: Afkar, Yarrow, Surbakti, and Cooper 2020.

Notes

a. Disabled here means that a student has a sensory (sight or hearing) or physical mobility disability.

b. Disabled here means that a student has either a physical disability as defined above or a "mental" (cognitive or socioemotional) disability.

## Strengthening human capital is crucial for Indonesia's future success

A final example of how Indonesia is lagging behind some of its neighbors—and therefore needs to boost learning—relates to employability and competitiveness. Indonesia's long-term growth potential and quality of life depend greatly on the quality of its human capital. Strengthening human capital is crucial for Indonesia's future success so that it can provide the skills to fully participate in Industry 4.0 and, through a higher-skilled population, harness the benefits of its demographic dividend.

Low human capital development has led to low labor productivity, limited contributions of education to economic growth, and lower overall competitiveness. Indonesia's labor productivity is one-fourth of that in Malaysia, and the estimated contribution of education to long-term economic growth is 1.8 percentage points a year lower than in Vietnam.

Low-quality education affects employment opportunities. Without significant improvement in the education system, companies will find it increasingly hard to hire professional and managerial staff, and the country will fail to realize its economic potential.

Data show that 65 percent of all new jobs created between 2011 and 2016 were in low-productivity sectors. Comparisons of productivity, measured as value added per worker, show that worker productivity in Malaysia (US\$15,800) is about four times that in Indonesia (US\$3,600), and productivity in Thailand (US\$5,300) is 1.5 times that in Indonesia.

Lower worker productivity affects Indonesia's aggregate level of competitiveness. In an analysis using the 2015 PISA results, if Indonesia were to increase its PISA scores by 25 points in the following 12 years, the estimated human capital productivity increase would add 0.08 percentage points to its annual long-term economic growth rate by 2027 and 0.23 percentage points by 2040. If Indonesia were to launch a more aggressive reform program aimed at increasing learning outcomes and the PISA scores were to increase by 100 points, Indonesia's score would then be close to the OECD average and Vietnam's 2015 PISA score. The higher education quality would add 0.30 percentage points to long-term growth by 2027 and 0.90 percentage points by 2040 (de Ree 2016). What is important is not the test score itself, but the systematic observation about how improvements in human capital can contribute to overall economic growth.

## The process of reform in Indonesia

Overall, Indonesia's education reforms have addressed many of the right issues, but implementation challenges have led to uneven results.


### Reforms were generally in the right direction, but their implementation was challenging and didn't yield the intended results

Most elements of earlier reforms were aligned with international best practices, had financial and technical support from development agencies, and had strong potential to improve Indonesian education outcomes. Education reforms included increasing financing for education, enhancing the participation of local actors in sector governance, strengthening accountability, improving the quality of teachers, promoting the merit-based appointment of principals, ensuring student preparedness when entering schooling, revising the curriculum, and improving the student assessment system. Yet these reforms have not produced the expected results. And without adding accountability measures to the reforms and focusing very clearly on learning outcomes, there is little chance for the investments to provide returns in remarkably improved outcomes (Kurniawati et al. 2018).

#### Six implementation challenges

Significant implementation challenges prevented some of the prior policy reforms from reaching their full potential. First, some of the major reforms were designed in a largely top-down fashion, with little consultation in MoEC itself or with other levels and actors of the system (for example, teachers, in the case of both a complex professional development process and the new and hurriedly developed curriculum released in 2013). As a result, the reforms were not "owned by" those most affected by them. This lack of ownership sometimes extended to indifferent or even resistant district offices that report only indirectly to MoEC. In such a context, and perhaps because of the exigencies of politics, there was little time to build the base and change the mindset needed to help ensure that these reforms would proceed smoothly (Shaeffer and Arlianti n.d.).

Second, the system's complexity leads to a lack of alignment among its various actors and a lack of clarity about who is ultimately accountable for its results. An important factor in this complexity is decentralization. The process in Indonesia has revealed challenges linked to capacity as well as weak systems of checks and balances in education service delivery. For example, central government data requests from provinces and districts don't closely correlate with student learning. And schools, districts, and provinces control most of the inputs that determine learning. That makes it difficult for provinces and districts to know how to focus their discretionary spending (see chapter 5).

Third, the reforms often lacked sustained, serious, and technically supported processes. Time is needed not only in developing a reform but also in ensuring its sustainability. The reforms were identified too closely with specific ministers, and senior officials were quickly terminated, suspended, or had their jobs seriously revised by their successors.<sup>27</sup> Moreover, a successful reform must go beyond rhetoric. It is easy to prove reform has occurred or is occurring through political platforms, policy papers, declarations, regulations, and memorandums of understanding (at different levels), and even Perpres and Permen in Indonesia. But many reforms never go beyond regulations and rhetoric into the difficult work of designing a credible reform and managing, implementing, financing, training for, monitoring, and evaluating its individual components. All of these processes require a degree of local technical expertise which either has not been available, or in the rush to completion or because of political exigencies, has not been appropriately used (World Bank 2018b).

The continuous professional development reform of 2015–17 is a case in point. Meant as a periodic test of teacher competencies and performance, it was developed with very little consultation with, and expertise from, lower levels of the system and even from peers in the ministry and potentially supportive development partners (Shaeffer and Arlianti n.d.).

Fourth, the good intentions of a reform (and the rhetoric surrounding it) often do not translate to the real world of teaching and learning. Even for reforms that appear to be more successful, there is a common belief that many of their resulting good practices do not really penetrate into the classroom but rather remain at the edges ("pinggir"). This relates partly to the lack of understanding at lower levels about the essential core and components of the reform, partly to the weak capacity of many local offices and principals, and partly to the power of local authorities to simply neglect the implementation of "recommendations" from MoEC (AI-Samarrai 2013).

In sum: Student learning should be a focus and underlying driver in improving Indonesia's education system, as laid out in the 2018 *World Development Report* on education. Based on the context, challenges, and achievements ("lags"), the rest of this report will focus on learning and how, for every aspect and level of Indonesia's education system, the question should be asked: What can be done by the government to shift the focus to improve learning? Improving learning is about the context and how policies and interventions are implemented. Large improvements in Indonesia's human capital depend on shifting how the education system operates, specifically aligning and strengthening the capacities, effectiveness, autonomy, and



accountability of teachers, principals, and local, regional, and national actors and institutions.

### Recommendation 1: Ensure that students reach at least minimum learning and development standards at each level of the system

- Focus on the quality of learning and provide more support to low achievers are key to improving the country's overall performance. This is essential to eliminate learning poverty and achieve Sustainable Development Goal 4.
- Guide and support learning with an emphasis on helping teachers improve, on measuring outcomes, and on stressing 21st century skills.
- Support students to achieve at least a minimum standard of learning and development at every level of education.

### What can be changed or improved?

#### Focus more on student learning and outcomes

For Indonesia to reach its education goals, it can shift from relying primarily on additional resources to focus more directly and explicitly on improving student learning and outcomes at all levels of the system. The results of both national and international exams indicate that action is needed urgently.

- The foundations for later learning should be provided in expanded and improved early childhood development programs. These foundations can be built upon in later grades to ensure mastery of literacy and numeracy as part of continuous transition between these programs and primary schools. (The actions for how this is to be done are elaborated in chapter 2.)
- MoHA has taken important steps to support literacy education (MoHA Circular letter No. 420/9239/SJ 2018 on Implementation of School Literacy Education in the Regions). Relatedly, the Innovation for Indonesia's School Children (INOVASI) program identified three main problems contributing to students' poor performance and weak literacy levels: the lack of a curriculum or methodology for teachers to teach reading in the early grades as it is falsely assumed that all children entering grade one are already able to read; the lack of teaching knowledge and skills in how to teach reading and literacy; and the limited access to appropriate reading material, especially in remote areas but also across the country in general.<sup>28</sup> Resolving these problems requires changes in training early grade teachers in appropriate knowledge and skills based on a revised curriculum for

these grades and adequate materials, where possible in the child's mother tongue.

- Education technology (EdTech) initiatives to equitably increase student learning can be supported in MoEC and MoRA schools through partnerships with the private sector. These private sector options can complement existing public sector online learning resources and be tested to identify successful and cost-effective approaches that can be used at scale. There is a need for a clear vision for the role of curriculum-aligned EdTech use in classrooms by teachers, which could focus on rural and remote areas where highly skilled instruction is in short supply. Developing EdTech with a focus on lower-income and rural and remote areas will increase equity and mitigate the risk that technology may primarily benefit urban schools with high-speed internet connectivity. The lessons learned in the use of online learning and distance education during the COVID-19 crisis should be useful in regard to further developing EdTech training, connectivity, and curriculum.
- In addition to the central content required of any education system, 21st-century skills for Industry 4.0—in such areas as communication, collaboration, and critical thinking—can be expanded in a revised curriculum and then taught early on and reinforced throughout the lifelong learning process. Given its expected impact on the economy and lives of Indonesians, climate change would be an important topic to feature across disciplines.
- At later stages, particularly for vocational education, partnerships with the private sector can ensure that the skills taught to students respond to market needs. A revised governance structure is needed to promote private sector participation in the TVET system.
- Access to lifelong learning opportunities must be increased by improving the quality of the supply of these opportunities and incentivizing the demand so that low- and middle-skilled employees can get training for continuing employment. Systematic experimentation and evaluation of EdTech are needed to help achieve rapid reskilling and upskilling at scale.

### What are the options to implement this change?

### Learning should be guided and supported

Learning starts with the interaction between students and teachers in schools but must be guided and supported by districts, provinces, and the central government. No magic pill will improve student learning throughout the system, but things can be done to support learning:

- MoEC can reduce and revise its National Education Standard (NES) indicators to focus more on measurable and observable aspects of the education process that are more closely linked to learning. This will send a system-wide signal that learning is important. And it can provide information to schools about where they should focus their attention to improve learning.
- Local supervisors (pengawas) and MoEC's province-level education guality assurance (Lembaga Penjaminan Mutu Pendidikan—LPMP) can work together systematically with the province-level education offices, provincial and district education offices (Dinas), school committees, and principal/teacher working groups to plan budget allocations and activities to improve student learning in each school. There is no one-size-fits-all solution, but by working together, local teams will be better able to find local solutions to improve learning. MoEC can make technical support available to regions that are struggling, and MoHA can require detailed learning improvement plans with results-based budget allocations from each level of subnational government down to the school. While centralized, MoRA can also work in a similar way to provide additional support to lagging reaions.
- MoEC can revise the national curriculum to focus more on skills and competencies needed in the labor market. Such a focus, of course, must be based on mastery of literacy and numeracy, which requires not only a proper curriculum but also teachers trained in how to implement it. Curricular reform is notoriously lengthy and expensive, but the process is expected to start soon. Overall coherence of the curriculum, as well as sequencing between grades and forward planning for textbook supply, teacher training, and assessment mechanisms, is essential to achieve better results than the 2013 curriculum reform process.
- MoEC and MoRA can support the evaluation of different approaches for integrating EdTech into schools at the province and district level and use the results to determine what programs are most effective for improving learning at the least cost. MoEC and MoRA can articulate a vision for the equitable use of curriculum-aligned student learning support by teachers and encourage provinces and districts to provide the necessary school infrastructure, teacher training, and safety and security before rolling out major technology initiatives.

• EdTech also holds promise for learning for working adults to reskill and upskill. MoEC and MoRA can work with districts, provinces, and the private sector to evaluate different models and support integration of those that are shown to be cost-efficient and effective in increasing learning.

Putting the focus on quality (general student learning and school performance) and equity (support to low-performing students and schools) is the best way to boost learning and fulfill the promise of Indonesian education.

### References

- ACDP (Analytical and Capacity Development Partnership).
  2013. Free Basic Education Strategy Development: Volume 1 Final Report, Jakarta: Education Sector Analytical and Capacity Development Partnership.
- Afkar, R., N. Yarrow, S. Surbakti, and R. Cooper. 2020. Inclusion in Indonesia's Education Sector: A Subnational Review of Gender Gaps and Children with Disabilities. Policy Research Working Papers. Washington, DC: World Bank. https://doi.org/10.1596/1813-9450-9282.
- Al-Samarrai, S. 2013. Local Governance and Education Performance: A Survey of the Quality of Local Education Governance in 50 Indonesian Districts. Washington, DC: World Bank. http://documents.worldbank.org/ curated/en/794841468044380862/Main-report.
- Asadullah, M. N., and M. N. Maliki. 2018. "Madrasah for Girls and Private School for Boys? The Determinants of School Type Choice in Rural and Urban Indonesia." *International Journal of Educational Development* 62(C): 96–11.
- BAPPENAS (Ministry of National Development Planning of the Republic of Indonesia), BPS (Badan Pusat Statistik), and UNFPA (United Nations Population Fund). 2018. *Indonesia Population Projection 2015–2045*. BAPPENAS, BPS, UNFPA. https:// indonesia.unfpa.org/en/publications/indonesia -population-projection-2015–2045–0.
- Beatty, A., E. Berhout, L. Bima, T. Coen, M. Pradhan, and D. Suryadarma. 2018. "Indonesia Got Schooled: 15 Years of Rising Enrolment and Flat Learning Profiles." RISE Working Paper 18/026, Research on Improving Systems of Education, Oxford, England.
- de Ree, J. J. 2016. "How Much Teachers Know and How Much It Matters in Class: Analyzing Three Rounds of Subject-specific Test Score Data of Indonesian Students and Teachers." Policy Research Working Paper WPS 7556, World Bank, Washington, DC.
- Duflo, E. 2001. "Schooling and Labor Market Consequences of School Construction in Indonesia: Evidence from an Unusual Policy Experiment." *American Economic Review* 91 (4): 795–813.
- Hayes, A., and D. Setyonaluri. 2015. "Taking Advantage of the Demographic Dividend in Indonesia: A Brief



Introduction to Theory and Practice." Policy Memo, United Nations Population Fund, Jakarta.

- Kurniawati, S., D. Suryadarma, L. Bima, and A. Yusrina. 2018. "Education in Indonesia: A White Elephant?" *Journal of Southeast Asian Economies* 35: 185–199.
- MoEC (Ministry of Education and Culture). *Summary of Education Statistics 2010/2011*. http://publikasi.data. kemdikbud.go.id/index.php?thn=all.
- ——. 2019. Data Referensi Pendidikan. https://referensi. data.kemdikbud.go.id/index21.php.
- ——. 2019. DAPODIK (Data Pokok Pendidikan Dasar dan Menengah).
- OECD (Organisation for Economic Co-operation and Development). 2018. *OECD Economic Forecast Indonesia*. http://www.oecd.org/economy/outlook/economic -forecast-summary-indonesia-oecd-economic-outlook .pdf.

—. 2019. PISA 2018 Results (Volume I): What Students Know and Can Do. Paris: PISA, OECD Publishing. https://doi.org/10.1787/5f07c754-en.

Rahman, M. A. 2016. "Low-Cost Private Schools: A Case Study in Jakarta." Center for Indonesian Policy Studies, Jakarta.

Schaeffer, S., and R. Arlianti. n.d. [info to come]

- Schaner, S., and S. Das. 2016. "Female Labor Force Participation in Asia: Indonesia Country Study." ADB Economics Working Paper Series No. 474, Asian Development Bank, Manila, Philippines.
- Statistics Indonesia. 2015. Badan Pusat Statistik (BPS), the Central Bureau of Statistics, Jakarta, Indonesia.

SUPAS. (Survei Penduduk Antar Sensus). 2015.

SUSENAS (Survei Sosial Ekonomi Nasional). Various years, Badan Pusat Statistik. SAKERNAS (Survei Angkatan Kerja Nasional). Various years, Badan Pusat Statistik.

UNESCO Institute for Statistics data. Various years.

- World Bank. 2013. Local Governance and Education Performance: A Survey of the Quality of Local Education Governance in 50 Indonesian Districts. Jakarta: World Bank.
- 2017. Indonesia Economic Quarterly, December 2017: Decentralization that Delivers. Washington, DC: World Bank. https://openknowledge.worldbank.org/ bitstream/handle/10986/29726/125302-WP-P165633
   -PUBLIC-december-2017.pdf.
- ——. 2018a. Growing Smarter: Learning and Equitable Development in East Asia and Pacific. Washington, DC: World Bank. doi:10.1596/978-1-4648-1261-3.
- ——. 2018b. Indonesia Economic Quarterly: Learning More, Growing Faster. June. Jakarta: World Bank. https:// openknowledge.worldbank.org/handle/10986/29921.
- 2018c. "Why Do Indonesian Adolescent Boys have Poorer Schooling Outcomes than Girls?" EAPGIL Policy Brief No. 5, World Bank, Washington, DC. http:// documents.worldbank.org/curated/en/168621543604 051631/.
- ——. 2019a. Ending Learning Poverty: What Will It Take? Washington, DC: World Bank. https://open knowledge.worldbank.org/handle/10986/32553.
- ——. 2019b. World Development Report: The Changing Nature of Work. Washington, DC: World Bank. https:// www.worldbank.org/en/publication/wdr2019.

### Government laws and regulations

Law No. 20/2003 on the National Education System. http:// simkeu.kemdikbud.go.id/index.php/peraturan1/8-uu -undang-undang/12-uu-no-20-tahun-2003-tentang -sistem-pendidikan-nasional.

- Law No. 33/2004 on Fiscal Balance. https://peraturan.bpk. go.id/Home/Details/40770/uu-no-33-tahun-2004.
- Law No. 23/2014 on Regional Autonomy. https://peraturan .bpk.go.id/Home/Details/38685/uu-no-23-tahun -2014.
- MoEC Regulation No. 58/2015 on Administering School/ Madrasah Exams or Other Equal Forms. http://simpuh. kemenag.go.id/regulasi/permendikbud\_58\_15.pdf.
- MoHA Circular Letter No. 420/9239/SJ 2018 on Implementation of School Literacy Education in the Regions. http://101.255.10.236/client/uploads/hukumpedia/ SE\_420–9239-SJ\_thn\_2018\_Gub.pdf.
- MoRA Regulation No. 60/2015 on Alteration of MoRA Regulation No. 90/2013 on the Implementation of Madrasah Education. http://simpuh.kemenag.go.id/regulasi/ pma\_60\_15.pdf.
- Presidential Regulation No. 107/2017 on Details of the State Budgets for Fiscal Year 2018. https://peraturan.bpk. go.id/Home/Details/73407/perpres-no-107-tahun-2017.
- Presidential Regulation No. 129/2018 on Details of the State Budgets for Fiscal Year 2018. https://peraturan.bpk. go.id/Home/Details/99155/perpres-no-129-tahun-2018.

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### CHAPTER 2

# Starting early with readiness to learn



amilies and communities need to support the development and learning of young children long before they enter compulsory education. Poor health, malnutrition, and delays and disabilities must be identified early, and attempts to mitigate them made through early childhood interventions. Although children's bodies are resilient, and catching up after early childhood may be possible when inputs to their growth and development improve, it is difficult to completely reverse the effects of exposure to risk factors after the first few years of a child's life.

Despite sweeping education reforms over the past two decades—increasing resources devoted to education, adjusting policy incentives, and expanding school access, the quality of learning in Indonesia appears to have improved only slightly. Part of the problem is that many children enter school unprepared to learn. Inadequate early responses to the challenges created by delays and disabilities, poverty, remote and rural location, the difference between home and school languages, and the lack of facilities and trained personnel for early learning hold back education outcomes in Indonesia.

Having largely succeeded in achieving universal basic education and having begun to understand the rationale for ECED in improving school achievement, policymakers in Indonesia are seeking to expand the opportunities for children to access higher quality learning and care in the early years focusing on their physical, socioemotional, and intellectual development.

ECED has not always been a policy priority in Indonesia, but there are strong indications that it

is becoming a more prominent priority in education. Since 2010, policy has progressed with the Grand Design, a blueprint for ECED building on a program dating back to 2001. The Grand Design set outcomes, targets, and principles for expanding early-years education and care from 2011 to 2025 as part of an ambitious and far-reaching set of goals to be realized by 2045.

The early years of life offer a special window for societies to make investments in their children both for their own well-being and to help ensure later economic returns to these investments. Children cannot thrive with stunted bodies and brains, and early gaps in learning and skills trap them in lower developmental trajectories from which it becomes increasingly difficult to escape. OECD work on the social outcomes of learning shows that high-quality early childhood education and care—in addition to very early interventions in family and community services—bring about a range of social benefits to individuals. These include better health, less highrisk behavior (particularly in adolescence), greater productivity, higher future earnings, and stronger "civic and social engagement" throughout their lives (OECD and ADB 2015). In fact, money spent on preschool services generates a higher return on investment than the same spending on later education (figure 2.1). Efforts to improve young children's lives can therefore significantly increase individual and national productivity while simultaneously reducing social and economic inequality.

#### **Readiness to learn**

Falling behind in the various domains of development is linked to the concept of "readiness to





Source: Heckman and Maserov 2007, World Bank 2018b.

learn" (Conti, Heckman, and Urzua 2010; Cunha and Heckman 2007; Gunnar and Fernald 2009; Heckman and Kautz 2012; Heckman, Pinto, and Savelyev 2013; Schweinhart 2005; Young and Mustard 2007). Gaps in children's readiness to learn appear early and can have long-term consequences. For example, if children enter primary school without the requisite language skills, such as recognizing sounds and letters, or are unfamiliar with numbers, they will quickly fall behind, likely leading to lifelong gaps in achievement. If children do not learn to read fluently in the early grades, it will be more difficult for them to develop the skills to succeed later in school or, more important, in any future workplace. If unaddressed, these gaps can affect children's later ability to gain cognitive and noncognitive skills.

Readiness to learn is therefore essential to success not just in primary school but throughout life. Strong support for family efforts to promote readiness to learn and assist in their child's academic and socioemotional development through good quality early childhood care and education pays high dividends at low cost (Blair 2002; Bowman, Donovan, and Burns 2001; Bradley and Corwyn 2005; Brazelton and Greenspan 2000; Britto, Fuligni, and Brooks-Gunn 2003; Dockett and Perry 2007; Ginsburg, Lee, and Boyd 2008; Minujin, Delamonica, and Komarecki 2006; Perez and Gauvain 2009; Cybele Raver 2004).

Readiness to learn is holistic and multifaceted. It describes children's physical, intellectual, and socioemotional development as they prepare to enter primary school. A successful transition from the home or preschool to school depends on children's ability to keep up with academic content and to integrate into the school's social environment, including through cooperative relationships with peers and teachers. Children should also be able to regulate emotions, follow instructions, and pay attention—skills essential for success in work and everyday life as an adult. Educators note the importance of the socioemotional side of readiness to learn. Familiarity with letters and numbers alone is not sufficient if the child cannot engage in the lesson. There is evidence that in some settings, children who are socioemotionally vulnerable lag behind children who are not vulnerable by about 9–12 months of learning in primary school (World Bank 2018a).

One of the major constraints to being ready to learn, particularly important in Indonesia, is the impact of stunting on young children—a condition that can seriously affect not only children's health but also their cognitive and socioemotional development (box 2.1).

In addition to children being ready to enter schools, schools must also be ready to receive children. First of all, they should be of good quality in terms of infrastructure, teachers, learning materials, and teaching methods. To ensure adequate readiness of the school to enroll children and ease the transition from one level to another, the pedagogy, curriculum, and environment of the school should be similar to that of preschool (child-centered, playbased, with a seamless curriculum from one level to another). The history and assessments of children's development and learning during any preschool experience should also be transmitted to the primary school—a process especially important for children with delays and disabilities. Both of these actions will facilitate the important smooth transition of school-ready children to child-ready schools.

### Starting early in Indonesia

### Laws and policies have put in place a supportive context for ECED

High-performing systems in the Asia-Pacific region have generally focused on children's physical and cognitive development, assessed and improved the quality of services they offer, and coordinated across actors to deliver needed services. Their efforts to progressively universalize preschool appear to have borne fruit. Throughout the region, children who had access to early childhood education and development (ECED) services posted higher PISA test scores than children who had no such access—even after controlling for socioeconomic differences (OECD 2015).

According to the government, early childhood education is meant to stimulate children's physical growth and socioemotional, intellectual, and spiritual development in order to prepare them for further education. In particular, MoEC's 2013 national ECED curriculum emphasizes programming that supports child development in six domains:

- Religious and moral values.
- Physical and motor skills.
- Cognitive skills.
- Language skills.
- Socioemotional development.
- Artistic development.

Indonesia's Education Law No. 20/2003 specifies that early childhood education (Pendidikan Anak Usia Dini, or PAUD)<sup>29</sup> should cover the period from birth to six years through different types of services such as playgroups and kindergartens.<sup>30</sup> Increasingly, this period is being seen in a more holistic way, bringing together health and nutrition, responsive child care and protection, and education. This more integrated approach is being developed

### **BOX 2.1** Multisectoral approach to address stunting in Indonesia is showing promising results

Despite some progress, Indonesia's rate of childhood stunting-the impaired growth and development that children experience from poor nutrition, repeated infection, and inadequate psychosocial stimulation—remains a serious challenge. According to the National Health Survey (RISKESDAS), in 2018 30.8 percent of Indonesia's children under age 5 (almost 9 million children) were stunted. This is a reduction from 37.2 percent in 2013, but the rate is higher in Aceh and Sulawesi Barat province and highest in Nusa Tenggara Timur. In 2019, the Ministry of Health reported a stunting rate at 27.7 percent based on the Indonesian Children Under-5 Nutrition Status Survey (Survei Status Gizi Balita Indonesia (SSGBI)) integrated in the National Socioeconomic Survey (SUSENAS). Nusa Tenggara Timur recorded the highest stunting rate of 43.8 percent (SSGBI 2019).

Children are defined as stunted if their heightfor-age is more than two standard deviations below the World Health Organization's Child Growth Standards median. Stunting, with its associated impacts on a child's cognitive and physical development, occurs in the first 1,000 days of life, beginning in pregnancy, and is largely irreversible. Specifically, stunting is associated with an underdeveloped brain with long-lasting, harmful consequences, including diminished mental ability and learning capacity, poor school performance, reduced earnings, and increased future risks of nutrition-related chronic diseases such as diabetes, hypertension, and obesity.

To combat the problem, pregnant mothers and children under age 2 need a multisectoral package of critical services including breastfeeding, dietary counselling, basic immunization, clean drinking water and hygienic sanitation, early childhood stimulation, measures to combat food insecurity, and a birth certificate to make sure that children are eligible for social sector services. Indonesia is now putting a focus on providing these key services together as a package. Recognizing the seriousness of the problem, including its longer-term impacts on education and economic productivity, the government launched the National Strategy to Accelerate Stunting Prevention in 2017. Led by the vice president, the National Strategy adopts a multisectoral convergence approach and commits 23 ministries and agencies to increase the impact of existing government spending on nutrition-specific and nutrition-sensitive services. With implementation beginning in 100 priority districts in 2018, the government is rapidly scaling up the initiative. It added 60 additional districts in 2019, another 100 districts in 2020, and is expected to reach all districts by 2024.

There are early signs that the government's multisectoral "whole-of-government" approach is making progress. In 2019, the Ministry of Health reported that the stunting rate declined by an impressive 3.1 percentage points to 27.7 percent in 2019 (Integrated SUSENAS-SSGBI Survey). The stunting rate is still high, particularly in provinces such as Nusa Tenggara Timur.

A key part of the government's National Strategy consists of mobilizing village-level human development workers (HDW), as well as leveraging early childhood education development (ECED) to improve convergence and to deliver early learning and stimulation services. The Ministry of Villages mobilized over 32,000 HDW in 2019 and is using digital technology to increase their effectiveness. The Ministry of Education and Culture is also a key contributor to the National Strategy. It has enhanced the existing professional development program for early childhood education and development teachers (Diklat Berjenjang) to incorporate materials on stunting and the delivery of stimulation interventions to children ages 0–2. It has also issued a handbook on stunting and the delivery of stimulation interventions and trained almost 2,000 district trainers to deliver the handbook's modules to ECED educators.

and promoted but is still quite limited in scope and reach. Presidential Regulation No. 60/2013 on Holistic Integrated Early Childhood Development (HI-ECD) aims to provide a strong foundation for improved implementation and coordination.<sup>31</sup>

At the sector level, an early childhood education curriculum was introduced as part of the national curriculum.<sup>32</sup> The eight national standards of preprimary education are Standard for Levels of Achievement of Child Development Outcomes, Standard of Content, Standard of Process, Standard of Assessment, Standard for Educators and Educational Personnel, Standard for Facilities and Infrastructure, Management Standard, and Financing Standard.<sup>33</sup> The 2013 curriculum for preprimary education put in place a focus on the six aspects of development in young children outlined above.<sup>34</sup>

The most recent Government Regulation No. 2/2018 on the Minimum Service Standards has included early childhood education as a basic public service governed by districts/municipalities to fulfill minimum needs of Indonesian citizens. This landmark regulation specifies that children ages 5–6 should participate in early childhood education and therefore creates the path for at least one year of universal preprimary education.<sup>35,36</sup>

### A range of ECED services is available for all age groups

Indonesia has historically considered ECED services as falling into two categories: the formal system (kindergarten, TK, and RA) and the nonformal system (other types of ECED services such as playgroups and daycare services). These two systems were merged under one MoEC Directorate in 2010. But differences remain in how ECED personnel are funded and managed across the two systems, and many districts continue to distinguish between formal and nonformal ECED. Note that both kindergartens and playgroups cater to children up to age 6. While kindergartens often have greater status as part of the "formal" system, many families opt to keep their children in playgroups, which are usually less expensive, less distant from their homes, and more community-based.

Law No. 20/2003 on the National Education System sets out three types of services for preschool provision:

- Kindergarten (taman kanak-kanak, TK) and Islamic early childhood education (raudhatul athafal, RA) for 4–6-year-olds. The latter is managed by the Ministry of Religious Affairs.
- Playgroups (kelompok bermain, KB) and childcare services (taman penitipan anak, TPA) for 0–6 year olds.

 Integrated care centers (pos pelayanan terpadu, posyandu, Pos PAUD) where health and care services are provided in an integrated way for children up to age 6.

Other non-Islamic faith-based institutions provide some elements of childcare and/or education.

Indonesia's system of early childhood education is highly decentralized, with provision mainly taking place through communities, religious institutions, and private providers of ECED services. The central government is responsible for issuing standards, curriculum, and accreditation—the district government is responsible for managing these services.<sup>37</sup>

More than 200,000 ECED services are registered with MoEC, while approximately 28,000 Islamic kindergartens operate under the oversight of MoRA (tables 2.1 and 2.2). These numbers do not include childcare and early learning facilities not registered with the government. Most ECED services are private/community-based and handle 6.3 million children, or 97 percent of the ECED students enrolled.

### Low spending and a complex budgetary environment

Investment in early childhood education at roughly 2 percent of the total education budget is well below what is needed.<sup>38</sup> Government Regulation No. 2/2018 on Minimum Service Standards requires local governments to support one year of preprimary education. But early childhood education is not a compulsory part of the national education system and thus often receives insufficient public funding, especially in districts where the local government does not consider it a priority.

UNESCO recommended 1 percent of GDP be spent on the ECED sector (UNESCO 2004). Among OECD countries, the average budget allocation for ECED as a percent of GDP was slightly over 0.7 percent (OECD 2019). In contrast, Indonesia allocated 0.0187 percent of GDP on ECED in the education sector in 2013. Indonesia's ECED

### TABLE 2.1 ECED services and students enrolled in 2019–20 by category

	Number of schools/institutions		Number o	of students
Type of ECED (PAUD)	Public	Private	Private Public Pr	
Kindergarten (TK)	3,908	89,098	211,106	3,552,547
Playgroups (KB)	462	84,117	11,817	2,117,584
Childcare services (TPA)	33	2,955	780	52,954
Other early childhood units (SPS)	109	22,309	2,136	594,834
Total	4,512	198,479	225,839	6,317,919

Source: Statistik PAUD 2019–20.

	Ministry of Education and Culture (MoEC)	Ministry of Religious Affairs (MoRA)	Ministry of Home Affairs with Ministry of Health staff	National Family Planning Board	
Formal	Kindergartens (taman kanak-kanak, TK)	Islamic kindergartens (raudhotul atfal, RA)			
Nonformal	Playgroups (kelompok bermain, KB)	Islamic kindergartens (taman pendidikan	Integrated health service units (Posyandu)	Toddler family groups (bina	
	ECED posts (Pos PAUD)	quran, TPQ)		keluarga balita, BKB)	
	Child care centers (taman penitipan anak, TPA)				
	Other early childhood units (satuan PAUD sejenis, SPS)				

### TABLE 2.2 ECED services are provided in different formats by different ministries

Source: World Bank 2012.

allocation grew to 0.0396 percent of GDP in 2018, the most recent year for which data is available.<sup>39</sup> As for ECED expenditure in noneducation sectors, the calculation of overall ECED allocation as a percent of GDP has been difficult due to a lack of official government data sources (World Bank 2015).<sup>40</sup>

UNESCO (2019) also recommended 10 percent of total education spending at the country level to be allocated for ECED expenditure by 2020.<sup>41</sup> In Indonesia, the 2019 ECED allocation under the Ministry of Education and Culture was Rp 6.53 trillion (US\$461.6 million), only 1.33 percent of the entire education sector budget of Rp 492.5 trillion (US\$34.8 billion) (MoEC 2019).<sup>42</sup> At district level, multi-year data collected by the World Bank's ECED Frontline Pilot indicated that the ECED budget allocation against total district government education budgets averaged 1.1 percent—based on a review of data from 24 districts—and that most of these funds were transferred from central government and not from local governments.<sup>43</sup>

Central and district/city governments are responsible for ECED costs related to their respective roles specified in Law No. 23/2014. Funding gaps exist within each responsibility area. For example, 2019 operational funds from the central government (MoEC) totaled Rp 600,000 per child per year—approximately US\$42. This amount was less than the 2013 estimated annual cost per child of US\$151 for playgroups and US\$256 per child for kindergartens (Nakajima et al. 2019).

### What does it cost to provide ECED services?

On the supply side, the main costs are establishing and operating an ECED service. On the demand side, they are family costs.<sup>44</sup> Establishing an ECED center requires a plot of land with standard sanitation facilities and other necessary infrastructure (ACDP 2017). The operational costs include providing salaries for teachers and education personnel, running learning programs, purchasing and maintaining equipment, and developing human resources. Depending on the region and qualification of teachers, the establishment and operational costs vary.

Family costs are incurred by the parents of ECED-enrolled children on uniforms, shoes, stationery, transportation, and so on. Based on a World Bank survey, ECED services charged Rp 10,000–25,000 per month per child in 2013 for community-based services (World Bank 2013b). This amount accounts for about 4.4–11.1 percent of the per capita monthly spending of poor households. The range is now considered to be greater, from zero cost in extremely poor areas to up to Rp 500,000 a month for private for-profit services.

#### How are the ECED service provision costs met?

Financing sources fall under three broad categories—government, parents and communities, and private foundations and others.<sup>45</sup>

Government. MoEC provides funds toward the investment costs other than land and sanitation (DAK Fisik).<sup>46</sup> In 2017, the average minimum investment cost for the procurement of an ECED building was approximately Rp 70 million (US\$4,900 thousand) (ACDP 2017). Government funds to meet the operational costs come through fiscal transfers to ECED service providers for registered students. In 2019, this BOP-ECED (education operational aid) was Rp 600,000 (US\$42.4) per child per year (MoEC Juknis BOP Guidelines 2019). The total BOP-ECED budget allocation is calculated based on the number of DAPODIK-registered students ages 0–6.47 While the total education sector budget of 20 percent of the national budget has been disbursed to several ministries, little is known about the percentage allocated to ECED by each ministry aside from that allocated by MoEC.<sup>48</sup>

At the village level, additional funds come from the district's APBD (local government budget), and in some cases village funds (dana desa) regulated by the Ministry of Villages. Conditional cash transfer programs, such as the Hope Family Program (PKH) under the Ministry of Social Affairs (MoSA), have provided funding for children ages 0–6 from disadvantaged families.<sup>49</sup> In 2019, PKH funded Rp 2.4 million (US\$169.6) per child per year. Recipients are eligible for cash transfers if they are registered in the PKH system. But other cash transfers such as the Smart Indonesia Card (KIP) have not covered children in preprimary education.<sup>50</sup> All this creates a complex regulatory and budgetary environment.

Parents and communities. Given that government investment in public ECED provision is not on track to reach 100 percent coverage by the SDG achievement timeframe of 2030,<sup>51</sup> private and community provision is key to meeting sector targets. This means that most ECED services, unlike primary schools, require parents to pay a fee for the service.

Village support for ECED services is usually from the community (more than 95 percent of ECED services are coded as private in DAPODIK and are community based).<sup>52</sup> Of the nonformal ECED facilities, 79 percent listed parents as their main source of finance (Statistik PAUD 2017–18).53 Preprimary financing by families includes registration and tuition fees, facility support fees, student uniforms, food allowances, school committee fees, and education equipment costs (ACDP 2017, Kurniatun and Manaf 2016). The biggest component of payment from parents to preschools is used for teacher salaries. According to MoEC data, 40 percent of parents are having difficulty paying the expected contribution during the pandemic, and 49 percent of ECED teachers are not receiving their salaries regularly.54

Despite the willingness of many families to pay the costs of ECED services, others are unwilling or cannot pay. Parents and caregivers are aware of the benefits of enrolling their children in ECED services. But they are often unwilling or unable to do so, especially among disadvantaged groups, who may not have the money to cover the costs, and those in rural and remote areas, who feel that available ECED services are too distant for their young children to reach. Besides local and national general advocacy campaigns supporting ECED enrollment, more targeted parent education programs can play an important role both in promoting enrollment and in providing the knowledge and skills to parents to assist in their child's development and learning—in areas such as protection, responsive care, cognitive development, and health and nutrition.<sup>55</sup> Such programs can also assist parents in reducing family stress, domestic violence, and the toxicity of home environments.<sup>56</sup>

Indonesia increasingly recognizes the importance of parent education related not only to ECED but also to other levels of education as well. The result has been a plethora of programs developed and implemented by a wide range of government ministries (Education and Culture, Health, Social Affairs, Religious Affairs, and the National Board of Family Planning) and international nongovernmental organizations (World Vision, Save the Children, and Plan Indonesia). This does not include other programs run by national or local networks of ECED service providers.

One challenge in parent education in Indonesia is that each program focuses on a different target audience (of children or their parents), promotes different messages, and uses different materials and methods. This is not necessarily a problem if all of the relevant audiences are provided the information they need, at the appropriate stage of their child's development, and through methods most suitable to the audience and the conditions in which they live. But because this is not the case, "it can be said, with a fair degree of certainty, that the vast majority of families are not likely to receive all the relevant parenting education services that would benefit them at a period when the information is needed most (Tomlinson and Andina 2015)." There are now attempts to better coordinate the various parent education programs to ensure more consistency of message and greater coverage.

### How is Indonesia doing?

### Access to ECE

### The availability of Indonesia's ECED services has grown slowly, as has the rate of participation

From 2016 to 2019, the number of kindergartens grew by 4 percent and the number of playgroups by 5 percent, while the number of daycare and other ECED services grew by smaller percentages and fell slightly in 2017–19 (table 2.3). Although the majority of villages (83 percent) in Indonesia have at least one ECED service, more than 13,800 villages (17 percent) lack any service (table 2.4).

#### **Participation in ECED**

Although most ECED services are still fee-charging, their active promotion by both national and local government has been instrumental in increasing

## TABLE 2.3Number of earlychildhood education services over2017/18–2019/20

	Number of schools/ institutions				
Type of ECE	2017/18	2018/19	2019/20		
Kindergarten (TK)	91,089	91,598	93,006		
Playgroups (KB)	83,162	83,784	84,579		
Childcare services (TPA)	3,092	3,027	2,988		
Other early childhood units (SPS)	22,804	22,658	22,418		

Source: Statistik PAUD 2017-18 to 2019-20.

### TABLE 2.4 Village level availability of ECE

Number of ECED services	Number of villages	Percent of villages
0	13,865	17
1	18,965	23
2	20,072	24
3 or more	31,029	37
Total	83,931	100

Source: Village Potential Survey (PODES 2018).

the percentage of children ages 5–6 participating in playgroups, kindergartens, and childcare services, more than doubling between 2008 (about 26.9 percent) and 2018 (about 55.4 percent) (figure 2.2).<sup>57</sup> Although the age groups analyzed and the indicator used may differ, in general it appears that Indonesia has improved greatly from 2010 to 2018.

Comparatively, the Indonesian gross enrollment rate (GER) in preprimary education (62 percent) is a little lower than that of Southeast Asia as a whole (68 percent) but considerably lower than that of East Asia and Thailand and even further below that of Malaysia and Vietnam (table 2.5). It is, however, still far above the GER of Sub-Saharan African and South Asia, though its rate of increase between 2010 and 2018 (about 50 percent) is similar to that of Africa. A greater focus on preprimary education since 2010 might have led to a higher GER than is currently the case.

Growth has been further driven by parental demand, reflecting increasing awareness of the benefits of early-year education and high-quality care —and the considerable efforts of all partners.

Participation in preprimary remains much lower for the younger cohorts. According to SUSENAS (2018), the gross enrollment rate (GER) in preschool for the age cohort 3–6 years is 37 percent<sup>58</sup> and for the age cohort 4–6 years is 50 percent (compared with the 55 percent GER for children ages 5-6). In rural areas children ages 4-6 have a lower enrollment rate than those in urban areas (47 percent versus 52 percent) (figure 2.3). Similarly, children from families in the bottom third consumption quantile have a lower enrollment rate (44 percent) than those in the top third (58 percent) and middle third (49 percent) quantiles. This means children in rural areas and in poor households have lower chances of attending any kind of ECED service at preprimary age and are also more likely to enter primary school without any ECED experience. These disparities in access and achievement thus continue—and even widen—later in the education system. 59

For both poor and rich households, the attendance rate in primary education is high for children ages 5–6, which is the official preprimary age.<sup>60</sup> One reason could be the greater affordability and accessibility of primary schools compared with kindergartens, encouraging parents to enroll children in primary school at an early age, thus reducing their exposure to the school readiness process of preprimary services.<sup>61</sup>

Participation in ECED varies considerably across the provinces (figure 2.4). Yogyakarta has the highest

Country/region	2010	2011	2012	2013	2014	2015	2016	2017	2018
Indonesia	41.44	43.09	50.01	54.35	57.88		61.88	63.19	62.34
Malaysia	79.14		84.67	89.41	93.01	97.02	96.94	99.97	99.22
Thailand					71.34	67.95	71.99	73.61	78.99
Vietnam	71.27	74.55	78.89	82.42	82.04	83.97	87.81	96.53	100.23
Africa (Sub-Saharan)	21.93	23.71	27.21	29.81	24.13	25.16	32.04	33.03	33.44
Asia (South)	15.33	17.00	17.51	19.44	20.67	21.50	22.58	24.81	25.68
Asia (East)	56.84	62.42	70.05	74.14	77.04	79.43	82.88	85.10	87.03
Asia (Southeast)	48.81	51.03	55.84	59.50	62.20	64.19	66.01	67.46	68.06

### TABLE 2.5 Gross enrollment ratio, preprimary, both sexes (percent)

Source: UIS.Stat, data extracted May 17, 2020, 08:21 UTC (GMT).



Participation rate for ages 5-6 (%)



### FIGURE 2.3 ECED gross enrollment rate for 4-6 year olds



GER in the 3–6 age cohort, at 73.85 percent,<sup>62</sup> while Papua has the lowest, at 12.92 percent. In 24 of the 34 provinces, the GER is below the national average of 37 percent. As figure 2.4 shows, enrollment is associated with ECED availability. Provinces with a higher fraction of villages lacking ECED services have lower enrollment rates. Both enrollment and ECED availability are also associated with district poverty. Poorer districts tend to have higher percentages of villages lacking an ECED service and lower enrollment rates (figures 2.5–2.6). In sum, almost 12 million children ages 3–6 are not enrolled in preschool education (SUSENAS 2018).

### **Quality of ECED**

### The quality of preschools varies widely across settings, and average quality is low

#### Service standards

Minimum standards of quality for ECED have been laid out by the government but do not appear to be well enforced based on available data. According to Statistik PAUD 2019–20 data, only a small percentage of the nonformal ECED services are accredited (figure 2.7). Based on a sample from 10 districts (figure 2.8), many of the private

### FIGURE 2.4 ECED gross enrollment rate for 3–6 year olds and villages without ECE service by province





### FIGURE 2.5 District-level poverty rate and percent of villages without ECE facility

community-based ECED services, especially in rural and remote areas, still fail to meet minimum local standards. And even more fail to meet the higher standards of the Early Childhood Environment Rating Scale-Revised (ECERS-R) in the areas of space and furnishing, personal care routines, language and reasoning activities, interactions, program structure, and parents and staff (Brinkman et al. 2017a). Although about 80 percent of rural preschools are said to meet national standards, fewer meet the minimum threshold for quality as outlined in internationally validated metrics.



### FIGURE 2.6 District-level poverty rate and ECED gross enrollment rate 4–6 years



### FIGURE 2.7 Nonformal ECED services that are accredited

Source: Statistik PAUD 2019–20.

(PAUD)

#### Classroom size and teacher qualification

The average pupil-teacher ratio was between 6 and 11 in different ECED types (Statistik PAUD 2019–20). A larger percentage of teachers in kindergartens (69 percent) have at least a college education compared with those in nonformal ECED (35 percent), likely due to differing qualification requirements for kindergarten teachers. Among teachers in the nonformal ECED services, the majority have a senior secondary school education or lower (60 percent) and a small percentage have a post-secondary diploma (5 percent). The motivation of teachers in nonformal ECED services to seek a college education is low, as the incentives tied to formal certification or civil servant status are only for employment in formally registered kindergartens.<sup>63</sup>

### Classroom size and teacher qualification are correlated with the GER in preprimary

There is substantial variation in pupil-teacher ratios and teacher qualifications across provinces. Provinces with lower pupil-teacher ratios in kindergarten tend to have a higher GER in preschool in the age cohort 4-6 years. Similarly, a higher percentage of kindergarten teachers with a college education is associated with a higher GER across provinces. And the percentage of kindergarten teachers with an ECED major is positively associated with the GER. The correlations of class size and teacher qualification with preschool enrollment are indicative that the former affect enrollment subject to two caveats. One, the results do not necessarily indicate causality and could reflect other factors that influence class size (and/or teacher qualification) and GER across provinces. Two, as discussed below, observed teacher qualifications may not improve development outcomes in preschool children unless teacher quality improves.

### ECED outcomes are important for child development and learning

There is evidence globally and from Indonesia that exposure to ECED makes a difference for child development and learning outcomes. The evaluation



### FIGURE 2.8 Share of rural preschools in a study sample that meet minimum local standards and ECERS-R standards

Percent

Note: Based on a sample of preschool services in rural Indonesia. The data are not nationally representative.

of a low-cost, government-sponsored, communitybased ECED project in rural Indonesia supported by the World Bank indicated the following development outcomes of ECED for children (World Bank 2013a; Jung and Hasan 2016; Nakajima et al. 2016; Brinkman et al. 2017b; Hasan et al. 2019):

- Enrolled children have better average developmental outcomes than those who are not enrolled.
- · Impact evaluation results based on a difference-in-differences analysis show that there are modest and sustained impacts on child development-especially for children from more disadvantaged backgrounds. Child development outcomes are significantly better in the short term (1 year after the intervention) in the treatment group compared with the comparison group. In the medium term (3 years after the intervention), a significant impact remains on only one domain of child developmentemotional maturity.
- The impacts are larger in magnitude and affect more aspects of development for children in poor households. For these children, there are significant improvements in language and cognitive development, social competence, and emotional maturity due to the project.
- The achievement gap between richer and poorer children in project villages narrowed on many dimensions, compared with the gap in non-project villages.

- The differences in primary school test scores between a child who has no early education exposure and a child who completes a full sequence at the developmentally appropriate age are 0.42 standard deviation in language and 0.43 standard deviation in mathematics, roughly equivalent to an additional 0.9 to 1.2 years of primary schooling.
- Providing access to both playgroups and kindergartens to young children at developmentally appropriate ages can optimize public investments in early childhood education.<sup>64</sup>

Examining the relationship between preschool quality and children's early development in rural Indonesia, Brinkman et al. (2017a) found that preschool quality measured by the ECERS-R standards significantly predicted children's development outcomes. The amount of class time spent in ECED programs was also a significant predictor of child development outcomes. The findings for teacher characteristics were mixed, in line with prior findings on teacher qualification. Teacher education predicted specific domains of child development such as children's social competence, communication, and general knowledge. Teacher experience and training were not significantly associated with child development outcomes, suggesting that policies focused solely on hiring teachers based on observed qualifications like experience and training will not suffice to improve children's development. To ensure the effectiveness of ECED services, policies must improve teacher quality by addressing the quality of professional development.

In sum, despite significant growth in the ECED sector, there are still many challenges to providing universal, good quality services for preschool children, especially those most often excluded from education and from learning. These challenges include the need for better understanding the nature and purposes of early years development and education programs; stronger advocacy at all levels of society about the importance of ECED; greater guidance, better coordination, clearer standards, and increased funding for ECED provision at regional and national levels; greater collaboration between the preschool and the primary school sectors to ensure a smoother transition from one to the other; and more regular collection of accurate data on ECED and their more frequent use in improving ECED policies, enhancing ECED quality, and reducing disparities of opportunities and outcomes that already appear at this early level of education.

### Recommendation 2: Make quality early childhood education accessible to all

 Make at least two years of quality early childhood education compulsory, accessible, and affordable for all.

- Enhance the coverage and quality of ECED services by ensuring sufficient funding to the subsector; develop a roadmap to achieve universal ECED enrollment by 2030.
- Incentivize ECED expansion, especially in areas with no ECED services, through grants for new or additional services, and encourage better collaboration among stakeholders in achieving this expansion.

### What can be changed or improved?

- Parliament can revise the Education Law to define "basic education" as including pre-primary education as a formal part of the Indonesian education system, and to make one and preferably two years of early childhood education compulsory. The formulation of costing and budget estimates with clear milestones to achieve universal preprimary enrollment by 2030 are central to this process.
- Use district-level funds (APBD) to expand the number and improve the quality of ECED services using a staged approach, prioritizing one year of ECED both for villages with no services and children of a targeted age and affected by exclusionary factors such as socioeconomic background and disability, and then working to add additional years of ECED services for younger children.



- Use the new RPJMN to gradually push districts to achieve 100 percent enrollment in one year of a preprimary service (playgroup or kindergarten) before entry to primary schools, and to identify support for districts to achieve this goal—including hiring qualified teachers. This can be a phased requirement, since more than 13,000 villages in Indonesia lack ECED services (Village Potential Survey or PODES 2018).
- Expand and make more relevant and complementary the various education programs for parents and caregivers to ensure that they receive the information and gain the skills needed to promote the healthy development and early education of their children.
- Incentivize ECED expansion through an outputbased grant<sup>65</sup> or new PAUD–DAK–Fisik for districts to build new ECED services, especially in villages without them, which meet a small number of key criteria, and register existing ECED service providers to ensure that data on their students are entered into DAPODIK, and those services that meet the minimum requirements to benefit from BOP–PAUD.
- Harmonize various cash transfers to underprivileged families of children under age 6 (calculated per child per year) in order to ease the financial burden of parents/main caregivers to enroll and keep their children in preprimary programs.
- Strengthen the registration system for ECED service providers and services, and develop a "socialization" campaign to stimulate both the registration of all ECED services and the higher enrollment of children in these services.
- Strengthen the coverage and quality of ECED by giving it sufficient funding within the current 20 percent education envelope by encouraging local governments to increase their ECED funding and by improving the governance framework to ensure that minimum quality standards are met.<sup>66</sup> The recent mandating of minimum service standards for ECED (Peraturan Pemerintah No 2/2018) with technical guidelines (MoEC Regulation No. 32/2018) is an important step forward. But if the standards are not enforced to ensure minimum levels of quality, children will develop and learn less than they should, and human capital will not reach its full potential.

### What are the options to implement this change?

 MoEC, with the support of the Ministry of Finance, MoHA, the Ministry of Villages, and MoRA, can make two years of preprimary education compulsory for all children by developing a roadmap for phased implementation, including financing and technical support. MoHA can advocate for districts to pass district legislation (PERDA: Peraturan Daerah) to finance and implement ECED services using APBD. Access can be to daycare centers, playgroups, kindergartens, and a range of other services for children under the ECED umbrella.

- Existing parenting/caregiver education programs can be expanded with clear links to the stunting agenda. Government and nongovernment actors that implement these programs can harmonize messages, materials, and approaches and ensure that all target audiences are reached and that they receive the information and skills they need.
- BAPPENAS (with support from MoEC, MoHA, and MoRA) can plan implementation of this commitment to two years of preprimary with a staged approach—prioritizing villages with no ECED services and children by age group, socioeconomic background, and other excluding factors such as disability-starting with one-year preprimary that meets the minimum service standards and providing funding for poor families and rural areas. Budget analyses can be conducted on the financing gap to provide the supply side-infrastructure and operational costs, teacher salaries, professional development, and so on—and a regulation can be implemented that defines roles and responsibilities of various stakeholders in ECED.
- All sectoral stakeholders in ECED can communicate this roadmap to relevant line directorates and to district and village governments to secure their commitment through local policies and budgets (working across MoEC, MoRA, MoHA, MoV, and BAPPENAS).
- All sectoral stakeholders can collaborate in organizing local and national advocacy campaigns and identify local and national champions (such as the Bunda PAUD) to raise awareness of the benefits of ECED and increase the demand for ECED services.
- The funding needed for these recommendations can come through increased public funding to ECED from central ministries, districts and villages. Alternative, innovative approaches to such funding can also be sought, for example, from public-private partnerships and the private sector.

### References

ACDP (Analytical and Capacity Development Partnership). 2017. Developing a Strategy for Quality Pre-Primary Education for All and Parenting Education of ECCE: ECCE Policy Options and Road Map for a Phased Approach to a One-year Pre-Primary Education for All Program (ACDP 033). Jakarta: Education Sector Analytical and Capacity Development Partnership.

- Blair, C. 2002. "School Readiness: Integrating Cognition and Emotion in a Neurobiological Conceptualization of Children's Functioning at School Entry." American Psychologist 57 (2): 111.
- Bowman, B. T., M. S. Donovan, and M. S. Burns. 2001. Eager to Learn: Educating Our Preschoolers. Washington, DC: National Research Council, National Academies Press.
- Bradley, R. H., and R. F. Corwyn. 2005. "Caring for Children around the World: A View from Home." International Journal of Behavioral Development 29 (6): 468–478.
- Brazelton, T. B., and S. I. Greenspan. 2000. The Irreducible Needs of Children: What Every Child Must Have to Grow, Learn, and Flourish. Cambridge, MA: Perseus Publishing.
- Brinkman, S. A., A. Hasan, H. Jung, A. Kinnell, N. Nakajima, and P. Menno. 2017a. "The Role of Preschool Quality in Promoting Child Development: Evidence from Rural Indonesia." *European Early Childhood Education Research Journal* 25 (4): 483–505.
- Brinkman, S. A., A. Hasan, H. Jung, A. Kinnell, and P. Menno. 2017b. "The Impact of Expanding Access to Early Childhood Education Services in Rural Indonesia." *Journal of Labor Economics* 35 (S1): S305–S335. https://www.journals.uchicago.edu/doi/full/10.1086/ 691278.
- Britto, P. R., A. S. Fuligni, and J. Brooks-Gunn. 2003. "Literacy, Childhood." In *Encyclopedia of Primary Prevention and Health Promotion*. Boston, MA: Springer.
- Conti, G., J. Heckman, and S. Urzua. 2010. "The Education–Health Gradient." American Economic Review 100 (2): 234–38.
- Cunha, F., and J. Heckman. 2007. "The Technology of Skills Formation." American Economic Review 97 (2): 31–47.
- Cybele Raver, C. 2004. "Placing Emotional Self-Regulation in Sociocultural and Socioeconomic Context." *Child Development*, 75 (2) 346–353.
- Dockett, S., and B. Perry. 2007. *Transitions to School: Perceptions, Experiences, and Expectations.* Sydney, Australia: University of New South Wales Press.
- Ginsburg, H. P., J. S. Lee, and J. S. Boyd. 2008. "Mathematics Education for Young Children: What It Is and How to Promote It." *Social Policy Report* 22 (1). Society for Research in Child Development, Washington, DC.
- Gunnar, M. R., and L. C. H. Fernald. 2009. "Poverty-Alleviation Program Participation and Salivary Cortisol in Very Low-Income Children." Social Science & Medicine 68 (12): 2180–2189.
- Hasan, A., H. Jung, A. Kinnell, A. Maika, N. Nakajima, M. P. Pradhan. 2019. "Contrasting Experiences: Understanding the Longer-Term Impact of Improving Access to Preschool Education in Rural Indonesia. Policy Research

Working Paper No. WPS 9060, World Bank, Washington, DC. http://documents.worldbank.org/curated/ en/689351574170836739/Contrasting-Experiences -Understanding-the-Longer-Term-Impact-of-Improving -Access-to-Preschool-Education-in-Rural-Indonesia.

- Heckman, J. J., and T. Kautz. 2012. "Hard Evidence on Soft Skills." *Labour Economics* 19 (4): 451–64.
- Heckman, J. J., and D. V. Maserov. 2007. "The Productivity Argument for Investing in Young Children." Working Paper 13016, National Bureau of Economic Research, Cambridge, MA.
- Heckman, J., R. Pinto, and P. Savelyev. 2013. "Understanding the Mechanisms through Which an Influential Early Childhood Program Boosted Adult Outcomes." *American Economic Review* 103 (6): 2052–86.
- Jung, H., and A. Hasan. 2015. "The Impact of Early Childhood Education on Early Achievement Gaps in Indonesia." *Journal of Development Effectiveness* 8 (2): 216– 233. https://www.tandfonline.com/doi/abs/10.1080/ 19439342.2015.1088054.
- Kemenko PMK. 2019. "Regulation of the Coordinating Minister for Human and Cultural Development of the Republic of Indonesia: Integrative Holistic Early Childhood Development Task Force." Jakarta.
- Kurniatun, T. C., and P. A. Manaf. 2016 "Early Childhoods Cost of Education in Indonesia: An Ethical Consideration in Educational Marketing." Paper presented at the 6th International Conference on Educational, Management, Administration and Leadership (6th ICEMAL 2016), Bandung, Indonesia, August 28.
- Minujin, A., E. Delamonica, and M. Komarecki. 2006. *Poverty and Children: Policies to Break the Vicious Cycle*. New York: The New School and UNICEF.
- Nakajima, N., A. Hasan, H. Jung, S. Brinkman, M. Pradhan, and A. Kinnell. 2016. "Investing in School Readiness. An Analysis of the Cost-Effectiveness of Early Childhood Education Pathways in Rural Indonesia." Policy Research Working Paper 7832, World Bank, Washington, DC.
- OECD (Organisation for Economic Co-operation and Development). 2011. Education at Glance 2011 OECD Indicators. OECD Publishing. https://www.oecd.org/ education/skills-beyond-school/48631582.pdf.
  - —. 2016. PISA 2015 Results: Excellence and Equity in Education. Vol. 1. Paris, France: OECD. https://www .oecd-ilibrary.org/education/pisa-2015-results-volume -i\_9789264266490-en.
- ——. 2019. PISA 2018 Results (Volume I): What Students Know and Can Do. Paris: PISA, OECD Publishing. https://doi.org/10.1787/5f07c754-en.
- OECD (Organisation for Economic Co-operation and Development) and ADB (Asian Development Bank). 2015. *Education in Indonesia: Rising to the Challenge*. Paris: OECD Publishing.
- Perez, S. M., and M. Gauvain 2009. "Mother-Child Planning, Child Emotional Functioning, and Children's



Transition to First Grade." *Child Development* 80 (3): 776–91.

- RISKESDAS. 2018. Riset Kesehatan Dasar, Ministry of Health. Retrieved from: https://www.kemkes.go.id/resources/ download/info-terkini/hasil-riskesdas-2018.pdf.
- SEAMEO CECCEP (Southeast Asian Ministers of Education Organization Regional Centre for Early Childhood Care Education and Parenting) and UNESCO (United Nations Educational, Scientific, and Cultural Organization) Bangkok. 2019. *Regional Guidelines on Innovative Financing Mechanisms and Partnerships for Early Childhood Care and Education*. Bangkok: SEAMEO CECCEP and UNESCO.
- Schweinhart, L.J. 2005. The High/Scope Perry Preschool Study through Age 40: Summary, Conclusions, and Frequently Asked Questions. High/Scope Educational Research Foundation. Ypsilanti, Michigan.
- SSGBI (Survei Status Gizi Balita Indonesia). Indonesian Toddler Nutrition Status Study, 2019. https://www. bps.go.id/dynamictable/2019/10/21/1704/prevalensi -balita-sangat-pendek-dan-pendek-pada-kabupaten -kota-ssgbi-2019.html.
- SUSENAS 2018, Survei Sosial Ekonomi Nasional, Badan Pusat Statistik.
- Tomlinson, H. B. and S. Andina. 2015. "Parenting Education in Indonesia: Review and Recommendations

to Strengthen Programs and Systems." World Bank Studies. Washington, DC: World Bank. https://doi. org/10.1596/978-1-4648-0621-6.

- UNESCO (United Nations Educational, Scientific, and Cultural Organization). 2004. *Early Education Financing: What is Useful to Know?* UNESCO Policy Brief on Early Childhood, No. 23, May. https://unesdoc.unesco.org/ ark:/48223/pf0000137412.
- 2019. Innovative Financing for Early Childhood Care and Education (ECCE) in Asia-Pacific Region. https:// bangkok.unesco.org/content/innovative-financing -early-childhood-care-and-education-ecce-asia-pacific -region.
- World Bank. 2012. "The Indonesia Early Childhood Education and Development (ECED) Project: Findings and Policy Recommendations." Policy Brief, World Bank, Washington, DC.
- 2013a. "Early Childhood Education and Development in Poor Villages of Indonesia: Strong Foundations, Later Success." *Directions in Development*, edited by Hasan, A., Hyson, M. and Chang, M.C. Washington, DC: World Bank.
- 2013b. Local Governance and Education Performance: A Survey of the Quality of Local Education Governance in 50 Indonesian Districts (Vol. 2). Washington,

DC: World Bank. http://documents.worldbank.org/ curated/en/794841468044380862/Main-report.

—. 2015. Early Childhood Education and Development in Indonesia: An Assessment of Policies Using SABER (English). Washington, DC: World Bank. http:// documents.worldbank.org/curated/en/131441468189 570749/Early-childhood-education-and-development -in-Indonesia-an-assessment-of-policies-using-SABER.

—. 2018a. Growing Smarter: Learning and Equitable Development in East Asia and Pacific. Washington, DC: World Bank. doi:10.1596/978–1-4648–1261–3.

——. 2018b. World Development Report 2018: Learning to Realize Education's Promise. Washington, DC: World Bank. https://www.worldbank.org/en/publication/ wdr2018.

Young, M. E., and F. Mustard. 2007. "Brain Development and ECD: A Case for Investment." In Africa's Future, Africa's Challenge: Early Childhood Care and Development in Sub-Saharan Africa, edited by M. Garcia, A. Pence, and J. L. Evans. Washington, DC: World Bank.

### **Government laws and regulations**

- Government Regulation No. 2/2018 on the Minimum Service Standards (MSS). https://peraturan.bpk.go.id/ Home/Details/67029/pp-no-2-tahun-2018.
- Law No. 20/2003 on the National Education System. http://simkeu.kemdikbud.go.id/index.php/peraturan1/ 8-uu-undang-undang/12-uu-no-20-tahun-2003-tentang -sistem-pendidikan-nasional.
- Law No. 23/2014 on Regional Autonomy. https://peraturan .bpk.go.id/Home/Details/38685/uu-no-23-tahun-2014.
- Ministerial Regulation No. 1/2019 on Sub-Task Forces for HI-ECD, by the Ministry of Human Development and Culture. https://www.kemenkopmk.go.id/sites/default/ files/produkhukum/Permenko%20PMK%201%20 tahun%202019.pdf.
- MoEC Regulation No. 137/2014 on National Standards for Early Childhood Education. http://repositori.kemdikn bud.go.id/12860/.

- MoEC Regulation No. 146/2014 on the 2013 Curriculum for Early Childhood Education. http://paud.kemdikel bud.go.id/wp-content/uploads/2016/04/Permendikbud-146-Tahun-2014.pdf.
- MoEC Regulation No. 2/2016 on Technical Guidance of Operational Assistance Fund for PAUD. http://paud. kemdikbud.go.id/wp-content/uploads/2016/04/ Permendikbud-No-2-Tahun-2016–1.pdf.
- MoEC Regulation No. 4/2017 on Technical Guidance of the Use of DAK Non Fisik BOP PAUD. http://anggunpaud. kemdikbud.go.id/index.php/berita/index/2017 0130085110/Permendikbud-No-4-Tahun-2017.
- MoEC Regulation No. 32/2018 on Technical Standards for Minimum Education Service. https://jdih.kemdikbud. go.id/arsip/PERMENDIKBUD%20NOMOR%2032%20 TAHUN%202018.pdf.
- MoEC Regulation No. 1/2019 on DAK Fisik PAUD. https://jdih.kemdikbud.go.id/laman/permendikbud -nomor-1-tahun-2019/.
- MoEC Regulation No. 4/2019 on Technical Guidance of the Use of DAK Non Fisik BOP PAUD 2019. https://jdih.kemdikbud.go.id/laman/permendikbud -nomor-4-tahun-2019/.
- Presidential Regulation No. 60/2013 on Holistic Integrated Early Childhood Development (HI-ECD). https://peraturan.bpk.go.id/Home/Details/41430/ perpres-no-60-tahun-2013.
- Presidential Decision KEPPRES 121-P/2014 on Appointment of Cabinet Ministers Period 2014–2019. https://www.bkn.go.id/wp-content/uploads/2015/08/ KEPPRES-NOMOR-121-P-TAHUN-2014-PEMBENTUKAN -KEMENTERIAN-DAN-PENGANGKATAN-MENTERI -KABINET-KERJA-PERIODE-TAHUN-2014–2019.pdf.
- Presidential Regulation No. 9/2015 on Coordinating Ministry of Human Development and Culture. https:// sipuu.setkab.go.id/PUUdoc/174377/Perpres%20 Nomor%20%209%20Tahun%202015.pdf.





# Equity and inclusion in learning



quity is defined in terms of two basic principles. The first is equal opportunities: that a person's life achievements should be determined primarily by his or her talents and efforts, rather than by pre-determined circumstances such as race, gender, social or family background. The second principle is the avoidance of deprivation in outcomes, particularly in health, education and consumption levels."

-World Development Report 201667

A major challenge for any education system is maximizing equity in relation to these two principles. This has important implications for the system —ensuring that learning achievement is based on talent rather circumstance and that disparities ("deprivations") in learning outcomes are minimized at all costs. Thus, education systems must provide the needed support, facilities, personnel, and resources to help ensure, first, that schools are able to do what they want to do and are expected to do and, second, that students are able to learn what they want to learn and are meant to learn.

### Education for all requires inclusive education systems and schools

Many factors exclude children from attending school, and many more exclude them from learning in the classroom. Yet education for all remains essential in both fulfilling children's rights and ensuring their equitable participation in the development of their community and their country. This requires inclusive education systems and schools, where inclusive education is defined as "a transformative process that ensures full participation and access to quality learning opportunities for all children, young people, and adults, respecting and valuing diversity, and eliminating all forms of discrimination in and through education" (UNESCO Cali Statement 2019). In other words, it is a process that ensures equity and inclusion in the education system.

Many countries and development agencies now assume a broad definition of inclusive education covering all barriers and challenges to schooling and learning as outlined below. Indonesia still uses the narrower and original definition, which is limited to covering children with disabilities. This is reflected in Ministerial Instruction No. 70/2009 on Inclusive Education where inclusive education is defined as a "system of education that provides opportunities for all learners who have abnormalities and have the potential of intelligence and/or special talents to follow education or learning in an educational environment (Ediyanto et al. 2017)." This instruction has led to the current structure of both schools for children with specific special needs and the concept of "inclusive schools"—in theory "regular" schools that are provided support so they can include children with disabilities though ultimately all schools are meant to be able and required to accept such children.

#### Exclusion has many underlying factors

Inclusive education is often limited, as it is in Indonesia, to its original focus on education for people with disabilities and special needs, but the more general—and more globally accepted—definition is broader, covering many kinds of barriers to education. These include:

- Socioeconomic status—Children of families who cannot afford to send their children to school, or need their children to supplement family income, or both.
- Gender—Boys or girls who are disadvantaged in various ways by the curriculum, the style of pedagogy, parental and teacher expectations, and cultural values.
- Delays and disabilities—Children who have a sensory, cognitive, socioemotional, or physical impairment that becomes a disability when facing the demands of "normal" society.
- Language—Children whose mother tongue is different from the language of the school and thus have difficulty both in gaining literacy in the national language and in understanding other subjects being taught.
- *Remoteness*—Children living in rural and remote areas that may have few educational facilities and resources and many barriers to reach the ones that exist.
- School violence—Children who are somehow seen as "different" or as rivals for status within a school, who may be subject to both physical and psychological violence (such as bullying). This includes the serious harassment of sexual violence.
- Early marriage—Girls below the legal age of marriage may be forced into marriage, which most often results in their being pushed out of school and thus made unable to complete their education.

All of these exclusionary factors, and more, can lead to low performance and lead eventually to children dropping out of—or, perhaps more commonly, being pushed out of—the education system.

### Lagging, low-performing students present a major challenge in efforts to boost learning

The inequity of child learning begins from birth or even before. Families disadvantaged in many ways may not provide adequate nutrition, healthy environments, and the cognitive and linguistic stimulation needed to help children make a good start. Disadvantaged families may have little interest in, time for, or ability to promote early learning. The vast majority of Indonesian children observed in a 2013 study grew up in households where parents never read stories to them, a deprivation that can limit their cognitive development (Alatas et al. 2013). Disadvantaged children able to access ECED services often find them of low quality, with inadequate facilities and materials and relatively untrained teachers (Chang, Hasan, and Hyson 2013, Brinkman et al. 2016).

The differences in service quality and resulting disparities in learning outcomes from ECED services are often continued and even exacerbated on entering primary school (Nakajima et al. 2016). This process can be reinforced, since the assessments of children in ECED services, across developmental domains, are rarely transferred to the receiving primary school. The result is that any evident delays, disabilities, or other developmental problems are unknown to the grade 1 teacher, who must then start the school year with a new assessment.

Later in primary school, many children are promoted from one grade to the next without having



mastered the curricular competencies mandated for the earlier grade (Afkar, de Ree, and Khairina forthcoming). This compounds learning disparities, as lower-income children and other children more likely to be excluded from regular classroom participation (children with disabilities, or children whose mother tongue is not the language of the school) miss out on more learning each year.

Teachers and schools can use formative and summative assessments more effectively to identify lagging, low-performing learners and gaps in learning within the classroom and school. This requires in-service training and support so that teachers can do this as a continual process throughout the school year. Once identified, the solution is to provide targeted support rather than hold the children back a year to repeat the same material with the same teacher. This support could include using graded readers to develop children's competence and confidence in reading and having teachers use their required out-of-classroom hours to tutor children who have been identified as needing additional assistance. Community members also can support these learners by providing study space, encouragement, and support.

### Socioeconomic status is a major contributor to educational inequality

Inequity based on differences in household income and wealth is a serious challenge. Household surveys indicate that considerations related to the cost of education account for more than one-half of cases where parents do not send their child to primary school, or where children drop out of school. And the gaps in achievement that are related to family wealth are significant.

#### Access

Chapter 2 indicated the disparities in participation in ECED by socioeconomic status. Similar disparities can be found in other levels of the system. For example, children ages 16–18 from the highest and lowest quintiles participate in senior secondary education at very different rates. The data also show that, because of their low starting base, poorer Indonesians registered faster growth. And although enrollment rates for poor and other vulnerable households in general have improved, work remains to be done to close the continuing gap (figure 3.1).

Such disparities in access are not only directly related to family wealth but are also reflected in the uneven quality of service delivery and infrastructure —often based on disparities in social and economic development across Indonesia's regions and provinces. For example, whereas Java generally has access to paved roads (85 percent) and electricity (99 percent), Papua does not (21 percent and 29 percent, respectively) (PODES 2014).

#### Academic achievement and the quality of learning

Similar to the disparities in access to education based on socioeconomic status, PISA scores of students from households in the lower 50 percent of the income distribution remained relatively stable between 2003 and 2015, while student scores in the top 50 percent of income recorded a significant increase. The growing difference can be expressed in school years: the gap of one school year in 2003 widened to two school years in 2015 (World Bank 2018b).

Socioeconomically advantaged students in Indonesia outperformed disadvantaged students by 52 score points in reading on PISA 2018. This gap was larger than that in PISA 2009 (44 score points), indicating an increase in disparities between the rich and the poor over time. However, 14 percent of socioeconomically disadvantaged students in Indonesia scored in the top quarter of reading performance within Indonesia, indicating that disadvantage is not destiny.<sup>68</sup>

In addition, part of the reason for such disparities is that schools attended by poor students have a lower proportion of classrooms in good condition and are less likely to be A-accredited. The differences in the characteristics of schools catering to the poor and the nonpoor increases as students reach upper secondary school. Poorer populations tend to attend smaller schools in smaller districts. Smaller districts tend to have lower capacity, and smaller schools have lower scores on national exams (Cislowski 2018).

Reforms over the past two decades have brought many Indonesians from disadvantaged socioeconomic conditions into schools, but their learning remains low and inequality remains serious. Because of infrastructure challenges, household costs associated with education (transportation, uniforms), and opportunity costs, poorer students are less likely to move as far through the education system as their more affluent peers -61 percent of children from the richest households reach grade 12, but only 23 percent of the poor reach that level (Fasih, Afkar, and Tomlinson 2018). As wealthier Indonesians rapidly improve their learning outcomes, the poor advance more slowly, so the inequality in years of education is now replicated with inequality in learning outcomes.

Since poverty is an important determinant of school enrollment and achievement, programs such as BOS and Kartu Indonesia Pintar have reduced financial burdens on parents by providing

### FIGURE 3.1 Senior secondary net enrollment rates grew for all income levels, larger growth was registered among poorer Indonesians



subsidies to schools and ECED services and directly to families to help ensure that students from poor families can access free basic education (ACDP 2013).<sup>69</sup> Despite these programs, poverty remains an important determinant in school enrollment, and poor families often have to choose whether to send their sons and daughters to school when resources are limited. In one study, more than half of the boys (55 percent) report that the family's economic condition is the major reason for not going to school, while only 50 percent of girls gave the same reason (MoWECP and BPS 2018 using SUSENAS 2017).

### Children with delays and disabilities are often neglected and poorly served

The most challenging barrier to inclusive education relates to delay and disabilities—whether sensory, intellectual, mental, or physical (or more than one). Based on various estimates from WHO and the World Bank, perhaps 5–10 percent of young children globally have some kind of developmental delay or disability (WHO 2011). And although Indonesia has impressive policies for including children in education—both physically in the classroom and academically in learning—the reality in practice is quite different.

In low and lower-middle income countries, around 40 percent of children with disabilities are out of school at primary level and 55 percent at lower secondary level.<sup>70</sup> But even for those in school, few are in "regular" schools but rather relegated to "special needs schools," or integrated into selected "inclusive schools" which may or may not receive extra financial and staff assistance to ensure successful inclusion. Accurate data are lacking on such students in Indonesia, and school policies vary widely-some accepting only children with mild intellectual and socioemotional impairments, others adapting to children with physical disabilities, and few willing to deal with hearing and sight impairments. And even in these schools, children with disabilities are sometimes represented as individuals who are "lacking abilities," "difficult to community with," "stupid," and so on (Kostan 2017). But specific activities can be developed to foster greater disability awareness in these and other schools (Wardany et al. 2018).

Of special concern is that Indonesia's rates of childhood stunting and malnutrition, despite some progress, are serious challenges. Stunting is the impaired growth and development that children experience from poor nutrition, repeated infection, and inadequate psychosocial stimulation and thus is a major cause of developmental delays and disabilities. In 2018, 30.8 percent of Indonesia's children under age 5 (almost 9 million children) were stunted, down from 37 percent in 2013, though the rate is higher in some regions, such as Aceh and Sulawesi (RISKESDAS).

#### The numbers are not small

In Indonesia, having a disability greatly increases a child's likelihood of being out of school. A "disabled" person is defined in Indonesia as one who has long-term physical, mental, intellectual, or sensory impairments that, when interacting with the society and environment, encounters difficulty in participating fully and effectively (Undang-Undang No. 8/2016). The most recent national figure for the prevalence of children ages 7-18 years with at least one type of physical difficulty (visual/auditory/ motor-sensory) is 0.30 percent (SUSENAS 2019). Including other types of functional impairment such as behavioral and learning challenges, inability to understand communication, and self-careboosts the total prevalence rate to 0.49 percent, though this is considerably lower than global average estimates of 5–10 percent.<sup>71</sup>

According to SUSENAS 2019, the proportion of enrolled students with at least one physical impairment is 0.24 percent for primary, 0.25 percent for junior secondary, and 0.28 percent for senior secondary. One study found that students of primary age in Indonesia with a disability are nearly 11 times more likely to be out of school than children without a disability (UNICEF 2016b). In 13 of the 15 countries included in the study, disability reduced the probability of attending school for primary and secondary age children by more than 10 percent, with Indonesia representing the most extreme case, with school attendance reduced by 61 percent for boys with disabilities, and 59 percent for girls (UNICEF 2016b).

According to data reported in 2019, the primary school completion rate for Indonesian children without disabilities is 95 percent, while for children with disabilities it is only 54 percent. The junior secondary completion rate is also much lower for children with disabilities—36.6 percent—than that for children without—85.4 percent. The senior secondary completion rate is lower for both types of children, but again those with disabilities are at a disadvantage: 62.2 percent against 26.0 percent (UNICEF and MoEC 2019). In effect, people with disabilities spend only an average of 4.6 years in school.<sup>72</sup>

The first barrier to a child's participation in schooling and in learning due to delays and disabilities is often the shame felt by the family, resulting in the child being hidden or kept out of public spaces. Early diagnosis of the disabilitythrough early childhood intervention programs, for example-might lead to early mitigation. But the specialists to make such diagnoses and manage such efforts at mitigation are rare, especially in rural and remote areas. And early childhood development personnel and even primary school teachers seldom have the skills and knowledge to identify disabilities, even simple ones, such as slightly impaired sight and hearing (which could be helped by simply moving such children to the front of the classroom).

#### Providing accessible facilities is proving difficult

Providing accessible facilities (such as ramps and wide doors) to children with physical impairments is proving difficult for many schools and their personnel to manage (Susanti et al. 2018). So is assisting children with cognitive delays caused by conditions such as dyslexia, and handling children with more complex cognitive and socioemotional challenges such as autism and hyperactivity. The result is that a large percentage of children with delays and disabilities do not enter school or do not advance to higher levels of education (Male and Wodon 2017, UNESCO Institute of Statistics 2017/18).

### Many of these children could be included in "regular" schools

Having access to, and opportunities for success in, education is every child's right. An experience shows that many of these children can be included in "regular" schools (especially those that have been supported as "inclusive"), and others with more complex needs in schools for special needs. Such inclusiveness is important because of the potential contribution such children can make to their own—and to national—development and because their participation in education can demonstrate the diversity of experience so essential in creating tolerant and just societies (Vargas-Baron 2019, Olusanya, Krishnamurthy, and Wertlieb 2018).

Even if children with special needs are able to enroll in ECED services and primary school, many are later pushed out as they move up the system and encounter challenges such as examination protocols that are not appropriate to their disability, physically inaccessible facilities, and even fewer teachers trained in special needs (Afkar, Yarrow, Sudarti, and Cooper 2020). In Indonesia, the primary enrollment rate for children with at least one type of physical difficulty is 8.1 percentage points below the enrollment rate for non-disabled students. Figure 3.2 shows how the dropout rates for students with disabilities is higher than for other students. In the transition from primary to junior secondary, there is a 26.4 percentage point drop for disabled students (from 89.6 percent to 63.2 percent) versus a 20.2 percentage point drop (from 97.7 percent to 79.5 percent) for nondisabled students. This drop should be reduced for all students, but those with disabilities should be prioritized.

### Policies and regulations exist but are not equitably implemented

Indonesian national policy stipulates that children with special needs be integrated in the education system through dedicated special needs schools and through "inclusive schools," which include children with and without disabilities. While a number of regulations support inclusive education, including the Permendiknas No. 70/2009, implementation has been lacking in many provinces and districts. Teachers often do not have the training to fully integrate children with physical and learning delays disabilities, and a social stigma often leads parents to conceal children, particularly those with sensory disabilities.

Discussions with provincial and district education officers revealed a lack of clarity about implementation, since children with special needs come under the auspices of the province, yet the province is not responsible for primary schools, leaving an ambiguous area of responsibility for primary-age children with disabilities (Afkar, Yarrow, Sudarti, and Cooper 2020). Although there

### FIGURE 3.2 Net enrollment rates drop more for disabled students than for non-disabled students from primary to junior secondary to senior secondary



have been some attempts to provide more targeted training for such teachers (Ediyanto et al. 2018), enforcing existing regulations, refining the curriculum for children with disabilities, and providing teachers with training on appropriate strategies to teach students with disabilities would help to improve both the equitable access and the quality of inclusive education (Susanti 2018).

#### Girls do better than boys on average

#### Access

The story on gender in Indonesian education is one of progress and diversity. Nationally, Indonesia has achieved gender parity by improving its Gender Parity Index (GPI) for school participation for children ages 7–12 from 0.89 in 1971 to 1.00 in 2018.<sup>73</sup> The current national GPIs for school participation rates for ages 13–15 and 16–18 are also impressive, at 1.02, demonstrating that females are enrolling and staying in secondary education at slightly higher rates than boys (Afkar, Yarrow, Sudarti, and Cooper 2020) (figure 3.3).

The national GPIs mask variations at the district level, including cases of significant male and female disadvantage. The variations include the difference of the grade 9 national exam scores in Bantul, Yogyakarta, where girls outperform boys by 6.6 percentage points, and the high enrollment gap in South Buton, where the percentage of boys ages 16–18 enrolled is twice as high as the percentage



### FIGURE 3.3 Net enrollment rates by sex and education

of girls enrolled, based on 2018 test and enrollment data (Afkar, Yarrow, Sudarti, and Cooper 2020). One constant in this picture is poverty; the poorer a district or family, the more likely it is to have low enrollments and learning for both boys and girls. This local variation means that the most effective approaches to achieving gender parity in education are likely to be driven by localized data analysis and locally driven policies and actions. This district- and province-level approach to addressing gender disparities can be complemented nationally by documenting positive examples of addressing gender imbalances successfully and by providing support for capacity and momentum building (Afkar, Yarrow, Sudarti, and Cooper 2020).

Despite these positive GPIs for education, discrimination continues. And despite largely similar educational outcomes, post-school aspirations are markedly different for young men and women. For example, there are marked differences by gender in the share of young Indonesians who want to enter STEM-related careers (favoring males) or more service-oriented careers (favoring females) (World Bank estimates based on PISA 2015). And women are still underrepresented in school and government leadership positions as well as in the workforce overall. A major reason for this is the lack of ECED services for the young children of working mothers.

### Achievement

Indonesian secondary students perform worse academically than their peers in other countries,

especially boys. In all subjects tested in the Ujian Nasional (UN or national exam) for grade 9 students, girls have performed better in recent years. The UN data show that the differences in exam scores between girls and boys were largest for Indonesian language (Bahasa Indonesia) followed by English, with average score differences of 4.7 and 2.3 points, respectively, out of 100. The average scores for mathematics and science were also generally low.

In the 2018 PISA tests, girls scored slightly higher than boys in reading (by 25 points), math (by 10 points), and science (by 7 points).<sup>74</sup> Results from the 2015 Trends in International Mathematics and Science Study (TIMSS) showed that girls scored 10 percentage points higher than boys in mathematics and 8 percentage points higher in science.<sup>75</sup> In addition, one study showed that girls outperformed boys by 0.08 standard deviation when the initial data were collected. An additional round of data collection seven years later found that the gap had widened to 0.19 standard deviation, equivalent to around 18 months of schooling (Suryadarma 2015).

Available data show a positive association between students' mindsets, perceptions, and socioemotional skills—and their grades (World Bank 2018c). Adolescent boys may learn less because they have socioemotional needs not fulfilled by the often rigid environment of the school, mindsets that demotivate them, the need to work in order to supplement family income, and other behavioral factors. Students with more of a growth mindset, and who believe they can increase their abilities in school through dedication and hard work, are more motivated, work harder, and get higher test scores in diverse contexts such as Chile and the United States.

In Indonesia, for example, boys are found to have lower educational aspirations that may also contribute to lower learning (Fasih, Afkar, and Tomlinson 2018). A large proportion of grade 8 girls (84 percent) state that they would like to complete a general tertiary degree, and more than half state that they would like to get a PhD if they had no constraints. Among grade 8 boys, in contrast, just 64 percent aspire to general tertiary education and 37 percent to a PhD. Boys are more likely to state that they wish to complete technical or vocational high school with no further formal education (20 percent compared with less than 10 percent of girls). Girls report spending more time studying outside of school than boys: more than five hours per week compared with less than four hours for boys. These differences in behavior may emerge from different social expectations of boys and



girls, and the differences in expectation indicate that girls plan to invest in their human capital far more than boys (World Bank 2018c).

### The neglect of mother tongue education in schools may interfere with mastery of the national language and later achievement in school

Another challenge is Indonesia's large number of languages. According to the *World Development Report 2018*, children learn to read most effectively in the language they speak at home—their mother tongue (World Bank 2018d). One listing of Indonesian languages counts more than 700 spread throughout the archipelago, ranging from those with many speakers (Javanese, Sundanese, Balinese) to those with few native speakers left (Ethnologue 2019). Since independence, the national language, Bahasa Indonesia, has penetrated throughout the country both through formal education and informal media. But in some regions of the country, the mother tongue/home language remains the dominant language of daily use.

While early childhood development programs —play groups and kindergartens—may use the mother tongue, Bahasa Indonesia is the language of instruction in most primary schools. At best, the mother tongue is inserted into local curriculum content or used to help translate Bahasa Indonesian materials. The mother tongue is seldom used as the language of instruction and early literacy (except to some extent in Papua).<sup>76</sup> Children who go from a largely mother tongue environment into an ECED service or a primary school that predominantly uses Bahasa may suffer as a result—especially if the teacher is not from the local language group—leading not only to delays in reading but also to difficulties in understanding other subjects. In general, there are no textbooks used in regular classes in the mother tongue, no teacher guides, and in most contexts few reading materials in the mother tongue that could help with literacy and learning.77

In theory, initial instruction and literacy are permitted in Indonesia in the mother tongue (particularly in Papua). Until recently, only the larger language groups (Javanese, Sundanese, and Balinese) and some of the many smaller language groups of Papua have had the opportunity and ability to promote their mother tongue and the culture in which it is embedded in school, either rarely as the language of initial literacy or more often as a subject under local curriculum content (muatan lokal). More recently, through the INOVASI program,<sup>78</sup> local government pilots in Bima and East Sumba have been implemented with a focus on providing teachers with a strategy to transition from mother tongues/regional languages to Bahasa Indonesia.<sup>79</sup>

The extent to which this language issue actually interferes with learning—or increases the disparity in outcomes between those who can manage the transition and those who cannot—is not completely clear in Indonesia. No doubt in some regions and among some populations, it is a factor in low performance. The Early Grade Reading Assessment in 2014, for example, showed a significant difference in oral reading fluency between children whose home language was the same language (the national language, Bahasa Indonesia) used in the school as opposed to those who used a different home language—a difference which, in turn, has an impact on the level of reading comprehension.<sup>80</sup> While Bahasa Indonesia is the national language, a sizable proportion of the population is not fluent in it. This fact may explain Indonesia's generally poor performance on international comparative assessments. The widespread use of multiple-choice questions in Indonesia's national examinations may also contribute to disguising the true extent of the language issue.

### Remoteness and regional underdevelopment are also important for inequity

A large number of isolated, remote, and extremely rural schools remain in seriously underdeveloped areas—facing special challenges for equity. A survey of 270 remote primary schools in five disadvantaged districts found that student learning outcomes were on average two grade levels below the national target. Only 40 percent of the teacher workforce were civil servants, while 42 percent were school-contracted. Thirty four percent of teachers still held high school degrees. Moreover, only 29 percent were connected to the electricity grid, and only 17 percent had internet access (Susanti et al. 2020). Resources are often scarce and expensive. Certified teachers do not want to teach in them-thus a dependence on less qualified contract teachers. And parents face difficulty both in understanding the importance of education in such a context and, even if they do, in physically getting their children to what might be rather distant schools. Thirteen thousand villages have no ECED services (PODES 2018). But there are also 48,000 thousand primary schools with fewer the 100 students and, of these, 18,000 have fewer than 60 students (DAPODIK 2018). Junior secondary schools in these areas, when they exist, often suffer from a lack of trained teachers and resources.

The usual official response to such a situation is to close small schools and merge them with another often distant school. But this only makes it more difficult for children in remote areas (especially in the early grades) to get to school and also often eliminates the one agency in a village—the school—that may serve as a center of cultural and social life.

Multigrade teaching is a well-known solution to this problem, where one teacher instructs children of more than one grade. Although there have been successful pilot projects in Indonesia using this approach, with teachers trained and special multigrade curriculum adaptations developed, to date the approach has not been promoted in either preservice or in-service teacher training. There is currently little in the preservice teacher education curriculum on multigrade teaching. In-service training for multigrade teaching tends to be donor-driven and small in scale and has yet to be sustained in official government policy.

#### School violence

School violence affects both boys and girls, and more needs be done to make schools safe spaces for learning. More than 20 percent of Indonesian students ages 13–17 report being bullied in the last 30 days (WHO 2015). Bad enough in itself, violence also reduces educational attainment and learning. Safe schools benefit everyone, so teachers need respectful work environments and confidential channels for reporting inappropriate behavior.

Studies on school violence have found that boys experience greater levels of violence in any form at school than girls (PLAN 2015). Beyond school experience, recent data from the 2018 National Survey of Children and Teenagers' Life Experience (for individuals ages 13–24) show that 33 percent of males were victims of physical violence while 20 percent of females reported the same experience. The survey also explored other types of violence, including sexual-based violence and emotional-psychological violence. Female respondents reported experiencing more sexual-based and psychological violence than males.

In addition, cyberbullying is increasingly documented as a problem that children face at home and in school. According to a series of online polls conducted on UNICEF's social media platform, U-Report, bullying is the number one concern of adolescents in Indonesia, closely followed by education, and popularity/identity issues (box 3.1).

### **Early marriage**

A particularly serious factor for school dropout and exclusion is early marriage—affecting 12 percent of girls in Indonesia, compared with less than

### **BOX 3.1** Roots Indonesia peer violence and bullying prevention pilot

Nationally representative data on bullying in Indonesian schools from the Global School Health Survey (GSHS) in 2015 suggests that more than 21 percent of children ages 13–15, or 18 million children, experienced bullying in the previous month. Bullying can have short- and long-term impacts on both victims and perpetrators. Aggressive behaviors among youth have been associated with poor educational outcomes and social functioning, as well as an increased risk of psychiatric disorders (Bowes et al).

UNICEF designed an intervention to prevent bullying in junior high schools in Indonesia, called the Roots Indonesia pilot, through workshops with the government, universities, youth, and civil society. The pilot was conducted in South Sulawesi and Central Java, in both rural and urban areas. It was adapted from a North American program called Roots, focusing on building a positive school climate through student-led activities.

In Roots Indonesia, students "voted" on their peers whom they spent the most time with to become "agents of change" using social network theory. These students are highly connected and have the most influence to change attitudes and behavior on the largest numbers of their peers. Approximately 40 agents of change went through regular facilitated after-school sessions (12 in all) to identify problems in their schools and to design, implement, and evaluate the solutions themselves. In South Sulawesi, bullying perpetration fell by 29 percent and victimization by 20 percent. Teachers and facilitators also noted important improvements in the behavior of students, including those selected to be agents of change. In Central Java, bullying perpetration and victimization increased slightly from the baseline due to improved awareness of students and teachers about what constitutes bullying, leading to an increase in reporting.

The sustainability of the program depends on having good facilitators who can communicate effectively both with students and with school staff and parents. Program effectiveness, like other whole-school programs focused on systemic behavior change, is likely to take more than one year to become fully integrated (typically 2-3 school academic years), so it will be important for schools to have a sustainable method for selecting student Agents of Change, and access to facilitators. UNICEF is currently working with district and province government to ensure that these components are included in the government scale-up plans. In South Sulawesi, government and schools have opted to embed the program with an existing extracurricular program called OSIS (Organisasi Siswa Intra Sekolah). In both provinces, facilitators will continue to be recruited from the existing program of the government, Forum Anak (or Child Forum).

Source: Evaluation of the Roots Indonesia Peer Violence and Bullying Prevention Pilot: South Sulawesi and Central Java.

1 percent of boys dropping out early because of marriage (table 3.1.)

In 2015, girls who married before age 18 were six times less likely to complete upper-secondary school than girls who married after that age. Among ever-married women ages 20–24, only 8.9 percent of those who married before age 18 completed senior secondary school, and 40 percent of them had primary school as the highest level of education completed.<sup>81</sup>

The rate of child marriage in Indonesia has been declining in the recent years, but it is still higher than in neighboring countries. Indonesia's child marriage rate, defined as proportion of women ages 20–24 married before 18, is lower than India's but twice Vietnam's. And because of the size of the Indonesian population, the country is among the top 10 countries with the highest absolute number of child brides, ranking seventh globally with

1.4 million women ages 20–24 who were married before age 18 (UNICEF 2016a).

#### School completion remains a problem of equity

Even if it were possible to get all children enrolled in ECED services and primary schools, as mandated by the Sustainable Development Goal 4, the number of children dropping out of school in Indonesia would likely remain high. As one might expect from the above analysis, this is caused by a range of factors, especially economic factors, such as being forced to work to support the family, marriage at an early age, and disabilities (table 3.1).

During the field visits conducted for a World Bank subnational review of gender gaps and children with disabilities, principals and district education officers noted that boys drop out of school for financial reasons at senior secondary level but also for an array of other reasons related to negative

### TABLE 3.1 Main reasons for dropping out of school by sex

	Indonesia				
Main reason	Male	Female	Total		
Insufficient funds	33.0	30.7	32.0		
Work	18.7	13.7	16.5		
Marriage	0.4	12.3	5.6		
Disabilities	5.4	4.8	5.1		
Taking care of the household	0.4	3.7	1.8		
Assumption that current education is enough	4.3	5.2	4.7		
Economic conditions	2.9	1.9	2.5		
Distance to school	3.7	3.3	3.5		
Other	31.3	24.5	28.3		
Total	100	100	100		

Source: SUSENAS 2017.

social pressure including bullying, an unwillingness to attend school, a focus on video games, and drug use as well as a lack of parental oversight. The latter reason was most often cited in rural areas and was often coupled with complaints of parents not understanding the importance of education due to low levels of educational attainment themselves.

### Summary

Having equitable opportunities to access the education system, whether at preschool or primary school level, by overcoming the factors of exclusion outlined above, is only the first step to boosting learning in Indonesia. The strength of these factors—gender biases (conscious or not), poverty, disabilities, remoteness, language, violence-will likely be ever-present to make the goal of boosting learning for all difficult to achieve—and even more so if the quality of the schools these at-risk children enter is inadequate to the task at hand. Specific policies and programs at national and local levels—PIP and BOS, disability-inclusive schools, multigrade teaching, mother-tongue based initial literacy, zero tolerance of violence-must be put in place to begin the battle toward genuinely inclusive education. Their success can be guaranteed, however, only if the education system itself has a vision and mission dedicated to equity and inclusion.

### Recommendation 3: Act to guarantee equitable access to good quality education and learning by children most excluded from the system

 Ensure that the vision and mission of the Ministry of Education and Culture, and the policies that flow from it, are always focused on ensuring that *all* children have equitable access to good quality schooling and opportunities to learn.

- At different levels, identify districts, communities, families, and children who continue to be excluded from school and therefore disadvantaged in their learning.
- Analyze the reasons for this exclusion and inequity and develop both national and local policies and school practices to overcome these reasons.

### What can be changed or improved?

### Accurate mapping of patterns of exclusion from and disparities within—education should be done routinely and continually

The full range of indicators linked to the achievement of SDG 4 can be a framework for the identification of patterns of exclusion. Likewise, a variety of tools (household surveys, international standardized tests, school-based assessments) can be made available for evaluating access and participation. This can be done first at the national level, to identify population groups or regions characterized by different patterns of exclusion, and analyses can be carried out to determine the extent and nature of, and the reasons for, such exclusion. For example, ethnic group X in province Y is especially unwilling to send children at an early age to an ECED service, or children in a remote and linguistically homogeneous district have difficulty using Bahasa Indonesia as the language of instruction in primary school.

At the local level, potential learners of school age also need to be mapped and counted, including those often difficult to find (such as children with disabilities or of migrating families). This
requires more direct household mapping, perhaps done by the local government and/or the school committee along with school staff, to find children not enrolled and identify the often-multiple reasons for such nonenrollment.

After analyzing patterns of exclusion, appropriate policies and practices need to be developed and put in place to promote inclusion and equity to achieve SDG 4.

At the national level, education and social influence campaigns to bring attention to and support existing regulations on inclusive education and against early marriage would be helpful, along with campaigns to draw attention to the problem of violence in schools and ways to reduce it.

At the local level, districts and schools can act to reinforce central policies (BOSDA in addition to BOS, district declarations concerning inclusive schools) and, perhaps more important, act to get individual children enrolled in—and succeeding in —school. This means that local mapping must be followed up by advocacy toward families reluctant to school their children (or enroll them in an ECED service) and then specific practices to make enrollment and success possible—facilities for children with physical impairments, multigrade teaching for small schools, the synergistic combination of mother tongues with national language in the early grades, and so on.

## What are the options to implement this change?

Indonesian leaders at all levels can recommit their energies and the resources available to ensure equitable access to good quality education.

- MoEC, MoRA, and MoHA, from the central level to local offices and schools, can become more aware of the nature of exclusion and the extent of inequity in education.
- Districts and provinces can provide additional dedicated funds from their own budget sources for hard-to-reach populations not currently enrolled in the education system.
- MoEC and MoRA can undertake/support more household surveys to have a clearer picture of who remains excluded from education and why —and not simply trust administrative data that, by definition, usually exclude the excluded from being counted.
- Such surveys can include categories of children not in school and collect data related to reach category so that education officials have a better idea about the true extent of the challenge.

The tools of school-based management school self-assessments and school development plans—can describe and analyze not only inputs and processes (as mandated by the Minimum Service Standards) but also issues concerned with nonenrollment, repetition, dropout, and completion rates, all indicators of exclusion.

- Any future revision of the Minimum Service Standards can develop standards related to indicators of exclusion, whether at the time of enrollment or throughout the student's school career.
- MoEC and MoRA can ensure that the school self-assessment and development plans include clear indicators concerned with exclusion.

#### Recommendation 4: Act to improve learning outcomes of the lowest performers

- Make help for low-performing districts, schools, and students a priority.
- Use high-quality national student assessments to diagnose (identify and explain) low performance issues and inform instruction in order to enhance performance. Ensure that teachers routinely assess performance daily through formative evaluation approaches.
- Harness learning data to identify lowestperforming schools and provide extra assistance to them.

#### What can be changed or improved?

## A culture of classroom assessment can identify gaps in student development and learning

Measurement makes learning visible, but without follow-up action and adjustment, assessment is worth little for improving schools, teaching, and learning. At the most basic level, a culture of classroom assessment can be fostered to identify gaps in student development and learning and to help resolve them. Assessment can highlight where support is most needed, but such support then needs to actually be provided for this approach to be effective.

## Make help for low-performing districts, schools, and students a priority

To overcome student assessment obstacles, Indonesian leaders at all levels need to foster a process that recognizes underperformance in learning and destigmatizes targeted assistance to lowperforming districts, schools, and students. Otherwise, low levels of human capital are likely to persist.

Indonesia's education system can improve learning outcomes for all students. In the short term, the focus should be on how to improve outcomes for the lowest-performing students and schools, since these students are being left behind and lack the tools to catch up.

## Provide schools with information on student achievement by grade and by question

The national primary exam was abolished in 2015 (MoEC Regulation No. 58/2015). Since then, MoEC has improved its system of assessment through the introduction of the Indonesia Student Competency Assessment (AKSI) (Asesmen Kompetensi Siswa Indonesia), a sample-based assessment, and increased exam integrity for the remaining grade 9 and 12 national exams, creating an opportunity for more detailed and useful analyses of achievement at district and school levels. Indonesia should continue to improve its student assessment system and, most important, needs to act on evidence from the assessments to make schools work for all learners. Student assessment is one of the key areas in the ministry's priority programs-the Freedom to Learn. MoEC plans to abolish the national exam for grade 9 and 12 and replace it with AKM (Minimum Competence Assessment) that would mainly evaluate students' literacy and numeracy competence for students in grade 5, 8, and 11.

Similar to AKSI, AKM is closely linked to PISA and to a lesser extent TIMSS in its question design —and is part of an effort to improve Indonesia's poor showing on these assessments. AKM covers multiple grades and includes the capacity to provide some schools with information on the average of student achievement by grade, by subject, and by question. This initiative is in the process of being expanded to all schools with support to ensure useful analysis of the information provided. Schools and subnational governments could use results to improve teacher practices, mobilize community support, and provide additional services for students behind the curricular learning goals.

## Use high-quality student assessments to diagnose issues and inform instruction

- Give special attention to success in early grade literacy and numeracy. This requires promoting a seamless pedagogy and curriculum between ECED services and primary school, with teachers specifically trained in early grade teaching (including identifying children with reading delays). Support the current plan to use AKSI-forschools—a standardized, formative, schoolbased assessment in grade 2 or 3—to help teachers, schools, and communities identify early weaknesses in learning.
- Support the plan to implement a national assessment in grade 4 or 5 to provide information to the district and central government about

student learning outcomes in primary school and act on that information to support districts and schools that are not achieving the desired outcomes. Avoid an end-of-primary exam in grade 6, which is less likely to be used to identify lower performers but instead deters students from progressing, and more likely to be politically challenging.

- Link the early and late primary grade assessments (and more routine informal formative assessments in classrooms) to in-service teacher-training support to make sure teachers know how to use this information to target support to all students and especially to low-performing students.
- Use the student learning data produced by these and existing assessments to identify the lowest 40 percent of schools and students at primary, junior, and senior secondary levels. Reward and encourage high-performing schools to support and work closely with lowperforming schools through teacher and principal working groups and zones. Reward and encourage high-performing districts to support low-performing districts.
- Continue improving the integrity of the grade 9 and 12 exams.

## What are the options to implement this change?

Indonesian leaders at all levels of government can foster recognition of underperformance in learning To overcome these obstacles, Indonesian leaders at all levels of government can help foster recognition of underperformance in learning and destigmatize targeted assistance to low-performing districts, schools, and students.

Districts and provinces can send a strong signal that all children can learn, and that school leaders and teachers are accountable for ensuring that this happens and for using student learning data to identify and support weak classes and struggling students. School leaders should be encouraged to ensure that only good teachers trained in early learning are assigned to the early grades. Teachers are already required (on paper) to include tutoring as a part of their 40 weekly academic hours (MoEC Regulation No. 15/2018). This time can be focused on addressing identified learning gaps in individual students.

Consistently low-performing schools could receive special coordinated support from provincial and district offices, supervisors, principal and teacher working groups, other more successful schools, and the LPMP.



- MoEC and MoRA can continue improving the integrity of the grade 9 and grade 12 exam by expanding computer-based testing and online assessment and linking them to broader EdTech integration initiatives.
- Central ministries:
  - MoEC and MoRA can require a schoolbased assessment and a national assessment in two different primary grades to help identify and then address learning inequities. Results could be reported to all stakeholders. The exam design can be simple and short, to capture essential skills and competencies for what primary students should learn.
  - MoEC and MoRA can help districts design strategies to support working groups, schools, and teachers in order to remediate poor student learning and to improve teaching practices based on the results of the national primary student assessment.
- District education offices can:
  - Organize a formative assessment of grade 3 or 4 students at the beginning of the school year; AKSI-for-schools is an example of a promising approach.

- Share student and classroom results with parents and teachers within three months of the formative, school-based assessment, along with a plan to improve the results.
- Through the structures of zones and working groups, support teachers and schools to remediate student learning gaps through student tutorials, in-service teacher training, mentoring, and other approaches.
- Schools can:
  - Use the national assessment results to improve teacher practices, mobilize community support and provide additional services for students who are behind in mastering the curricular learning goals.
  - Use the school-based formative assessment results to identify in what grades, subjects, and subject content students perform less well and adjust the syllabus and teaching methods as required.

#### Recommendation 5: Ensure that all students, including those with disabilities, succeed

• Identify children with disabilities as soon as possible so that early childhood interventions can be provided; train teachers to work with children who have disabilities—and include them in learning.<sup>82</sup>

- Assess to what extent in the local context disparities in achievement are linked to gender, language interference, socioeconomic status, school violence, and early marriage.
- Ensure that small rural and remote schools can provide quality education.

#### What can be changed or improved?

- Identify and diagnose disparities in learning achievement among groups of students and then improve instructional practices and support so that all students—urban and rural, rich and poor, boys and girls, with disabilities and without—can succeed.
- Ensure that small rural and remote schools can provide quality education despite their disadvantages by ensuring that teachers assigned to these schools understand and can practice multigrade teaching.
- Promote the mother tongue as the language of instruction in early childhood development programs and the early grades of primary school where the majority of children in a class speak the same non-Bahasa Indonesia language at home, leading to a smooth transition to mastery of Bahasa Indonesia in later years of primary school.
- Ensure at the district level that children with disabilities are identified as early as possible, provided with early childhood interventions where possible, eventually enrolled in preschool and then primary school, and appropriately served.



- Refine the curriculum for children with disabilities and provide teachers with training on appropriate strategies to teach students with disabilities, which would help to improve the access to and the quality of inclusive education if combined with accessible infrastructure and equipment.
- Consistently combat school violence, found both in bullying and in more serious physical harassment.
- Put in place—and implement—measures at the local level to discourage early marriage and to enable young girls who are married to continue their education.

## What are the options to implement this change?

- Remoteness. MoEC can help ensure that multigrade teaching is included in preservice education programs and provided to all candidate teachers, that the national curriculum is adapted for it, and that adequate facilities and materials are provided to facilitate it.
- Poverty. MoEC and MoF can continue to expand the provision of BOS and BOP-PAUD to reduce the cost of schooling and of PIP to provide subsidies to disadvantaged families to help ensure their children enroll and remain in both nonformal and formal schools.
- Language. Where appropriate, MoEC can encourage use of the mother tongue in ECED services and the early grades of primary school and provide adequate materials and teacher training to implement such mother tongue programs and ensure a successful transition to mastery in Bahasa Indonesia. Specifically, provinces and districts can be encouraged to develop implementation guidelines for using the mother tongue as the language of instruction. Local governments can actively foster and develop the use of mother tongue languages and provide in-service training and guidelines to strengthen the transition to Indonesian; and, where possible, reading books based on local culture and contexts, using the local mother tongue and Bahasa Indonesia, should be made available in schools.83
- Disability. MoEC, MoHA, and the Ministry of Social Welfare can work together to ensure the early identification of children with delays and disabilities by working with schools and village and neighborhood authorities. The ministries can provide early childhood interventions and financial and technical support to ECED services and primary schools to enroll these children and ensure that they are included in learning to the extent possible. The ministries can invest

and promote school designs facilitating access for children with disabilities.

- Violence in schools. All relevant actors, local and national, can work together to develop and expand pilot projects that attempt to reduce the rate of bullying and physical harassment in schools.
- Early marriage. All relevant actors—government, civil society, and religions—work together to discourage early marriage and, where it exists, to ensure that married girls can continue their education.

#### References

- ACDP (Analytical and Capacity Development Partnership).
  2013. Free Basic Education Strategy Development.
  Volume 1 Final Report. Jakarta: Education Sector, Analytical and Capacity Development Partnership.
- ———. 2015. Rapid Assessment of the Cash Transfer for the Poor Students Program/Bantuan Siswa Miskin (BSM). Jakarta: Education Sector, Analytical and Capacity Development Partnership.
- Afkar, R., J. de Ree, and N. Khairina. 2018. Who Learns What in Basic Education? Evidence from Indonesia. Washington, DC: World Bank. https://doi.org/ 10.1596/32396.
- Afkar, R., N. Yarrow, S. Surbakti, and R. Cooper. 2020. Inclusion in Indonesia's Education Sector: A Subnational Review of Gender Gaps and Children with Disabilities. Policy Research Working Papers, World Bank, Washington, DC. https://doi.org/10.1596/1813 -9450-9282.
- Alatas, H., S. Brinkman, M. Chang, T. Hadiyati, D. Hartono, A. Hasan, and R. Roesli. 2013. "Early Childhood Education and Development Services in Indonesia." In *Education in Indonesia*, edited by D. Suryadarma and G. W. Jones. Singapore: Institute of Southeast Asian Studies.
- Bowes, L., C. Joinson, D. Wolke, and G. Lewis. 2015. "Peer Victimisation during Adolescence and its Impact on Depression in Early Adulthood: Prospective Cohort Study in the United Kingdom." The BMJ 2015: 350.
- Brinkman, S. A., A. Hasan, H. Jung, A. Kinnell, N. Nakajima, and P. Menno. 2016. "The Role of Preschool Quality in Promoting Child Development. Evidence from Rural Indonesia." Policy Research Working Paper 7529, World Bank, Washington, DC.
- Chang, M. C., A. Hasan, and M. Hyson. 2013. Early Childhood Education and Development in Poor Villages of Indonesia: Strong Foundations, Later Success. Directions in Development. World Bank: Washington, DC.
- Cislowski, H. 2018. "Review of the System for Assessment Student Learning." Mimeo.
- DAPODIK (Data Pokok Pendidikan Dasar dan Menengah). 2018.
- Ediyanto, E., A. Mulyadi, A. Supriatna, and N. Kawai. 2018. "The Education and Training Program for Special

Guidance Teacher Competence Development in Indonesian Inclusive Schools." *Indonesian Journal of Disability Studies* 5 (2): 251–267.

- Fasih,T., R. Afkar, and H.B. Tomlinson. 2018. Learning for All: Towards Quality Education for Enhanced Productivity and Economic Growth in Indonesia. Washington, DC, World Bank. http://documents.worldbank.org/curatn ed/en/462941519229451139/Learning-for-all-towards -quality-education-for-enhanced-productivity-and -economic-growth-in-Indonesia.
- Kostan, H. 2017. Representasi Sosial Mengenai Siswa dengan Disabilitas pada Siswa Non-Disabilitas di SMP Inklusi di DKI Jakarta.
- Male, C. and Q. T. Wodon. 2017. *Disability Gaps in Educational Attainment and Literacy*. Washington, DC: World Bank.
- MoWECP (Ministry of Women Empowerment and Child Protection) and BPS (Badan Pusat Statistik). 2018. *Profil Anak Indonesia*, 113. Jakarta: MoWECP.
- Nakajima, N., A. Hasan, H. Jung, S. Brinkman, M. Pradhan, and A. Kinnell. 2016. "Investing in School Readiness. An Analysis of the Cost-Effectiveness of Early Childhood Education Pathways in Rural Indonesia." Policy Research Working Paper 7832, World Bank, Washington, DC.
- Olusanya, B., V. Krishnamurthy, and D. Wertlieb. 2018. "Re: Global Initiatives for Early Childhood Development Should Be Disability Inclusive." *Pediatrics* 141. e20174055. 10.1542/peds.2017–4055.
- PLAN. 2015. Are Schools Safe and Equal Places for Girls and Boys in Asia? https://plan-international.org/ publications/are-schools-safe-and-equal-places-girls -and-boys-asia-0.
- RISKESDAS2018. Riset Kesehatan Dasar, Ministry of Health. https://www.kemkes.go.id/resources/download/ info-terkini/hasil-riskesdas-2018.pdf.
- Suryadarma, D. 2015. "Gender Differences in Numeracy in Indonesia: Evidence from a Longitudinal Dataset." *Education Economics* 23 (2): 180–198.
- SUSENAS 2018. Survei Sosial Ekonomi Nasional. Badan Pusat Statistik.
- Susanti, D. 2018. "Motif Kepala Sekolah dalam Penyelenggaraan Sekolah Inklusi SDN Pajunan II Kalitidu Bojonegoro." Jurnal Paradigma 6 (1).
- Susanti, D., J. Priebe and A. Bah. 2020. The hard truth: Challenges of primary education in rural and remote Indonesia, World Bank Blog
- UNESCO Institute of Statistics (United Nations Educational, Scientific, and Cultural Organization). 2018. *Education and Disability: Analysis of Data From 49 Countries*. Information Paper Number No. 49 Paris, France: UNESCO. http://uis.unesco.org/en/news/education-and-disability -analysis-data-49-countries.
- UNICEF (United Nations Children's Fund). 2016a. *Child Marriage in Indonesia: Progress on Pause*. New York: UNICEF. https://www.girlsnotbrides.org/wp-content/

uploads/2016/11/UNICEF-Indonesia-Child-Marriage -Research-Brief-1.pdf.

- —. 2016b. Towards Inclusive Education: The Impact of Disability on School Attendance in Developing Countries. New York: UNICEF.
- 2018. Progress in Measuring Global School Enrollment Gaps for Children with Disabilities. UNICEF. https://blogs.unicef.org/evidence-for-action/progress -in-measuring-global-school-enrollment-gaps-for -children-with-disabilities/.
- UNICEF (United Nations Children's Fund) and MoEC (Ministry of Education and Culture). Forthcoming. *SDG4 Monitoring Report 2019*. Jakarta: UNICEF.
- Vargas-Barón. E., J. Small, D. Wertlieb, H. Hix-Small, R. Gómez Botero, K. Diehl, P. Vergara, and P. Lynch. 2019. "Global Survey of Inclusive Early Childhood Development and Early Childhood Intervention Programs." RISE Institute, Washington, DC.
- Wardany, O. F., M. F. Hidayatullah, and M. Wagimin. 2018. "Activities for Fostering Disability Awareness and Friendship in Inclusive Schools." *Indonesian Journal of Disability Studies* 5 (1): 106–14.
- WHO (World Health Organization). 2011. Summary World Report on Disability. https://apps.who.int/iris/bitstream/ handle/10665/70670/WHO\_NMH\_VIP\_11.01\_eng.pdf.
- ------. 2015 Indonesia 2015 Fact Sheet. https://www.who. int/ncds/surveillance/gshs/2015\_Indonesia\_GSHS\_ Fact\_Sheet.pdf.

- World Bank. 2018a. Growing Smarter: Learning and Equitable Development in East Asia and Pacific. Washington, DC: World Bank. doi:10.1596/978–1-4648–1261–3.
  - ——. 2018b. Human Capital Project. Washington, DC: WorldBank.http://www.worldbank.org/en/publication/ human-capital.
  - 2018c. "Why Do Indonesian Adolescent Boys Have Poorer Schooling Outcomes than Girls?" EAP-GIL Policy Brief 5, World Bank, Washington, DC. http://documents.worldbank.org/curated/en/1686215 43604051631/.
  - ——. 2018d. World Development Report: Learning to Realize Education's Promise. Washington, DC: World Bank.

#### **Government laws and regulations**

- Law No. 8/2016 on People with Disabilities. http://www. dpr.go.id/dokjdih/document/uu/1667.pdf.
- MoEC Regulation No. 70/2009 on Inclusive Education. https://jdih.kemdikbud.go.id/arsip/Permendikbud\_ Tahun2009\_Nomor070.pdf.
- MoEC Regulation No. 58/2015 on Administering School/ Madrasah Exams or Other Equal Forms. http://simpuh. kemenag.go.id/regulasi/permendikbud\_58\_15.pdf.
- MoEC Regulation No. 15/2018 on Meeting the Work Expenses of Teachers, Headmasters, and School Supervisors. http://simpuh.kemenag.go.id/regulasi/ permendikbud\_15\_18.pdf.



### CHAPTER 4

# Preparing and supporting teachers



Good teachers are central to student learning. To improve their quality, Indonesia can select only the most qualified and motivated candidates and to assist them more effectively in their training and professional development, both before they enter the classroom and throughout their careers. Without consistently better instruction, Indonesian students are unlikely to achieve the foundations for later learning or gain the skills needed for the 21st-century workplace in a competitive and globalized economy.

More than 3.3 million teachers work in Indonesian classrooms every day, along with 365,600 professors and lecturers at the tertiary level and 826,300 in ECED (MoEC 2020; EMIS 2020). For students to learn, teaching has to be effective, since well-trained and motivated teachers are the most fundamental ingredient for learning after the students themselves. Indonesia should focus on hiring the brightest students to be teachers, train and pay them well, and deploy them efficiently and equitably across the archipelago. It needs to continually develop teachers' skills through effective professional development. And to keep the best teachers in the classroom, it can provide incentives based on performance and accountability.

The quality of teaching varies widely, and standards are unevenly attained. Ample evidence from across the globe shows the central importance of teachers in the education process. For example, a good teacher increases the academic knowledge of U.S. students by 1.5 academic years, while low-quality teachers increase it by only half an academic year (Hanushek 2011). That generates large differences in learning, depending on the quality of teachers as students' progress through their formal education. Problems persist in teaching quality despite efforts to improve it. Selecting and supporting teachers to focus on classroom instruction throughout their careers is one of five factors that drives learning, according to the World Bank's Growing Smarter report (2018a). Indonesia has made efforts to improve the quality of teaching, but extensive problems persist.

Indonesia's large number of teacher training institutions (421) produce more than three times the number of candidate teachers required by the public service system. The very large number of candidates, roughly 300,000 in 2017, includes many of low quality, linked to the fact that 58 percent of the teacher training institutions are themselves of low quality and not accredited.<sup>84</sup> What's needed now is to shift from the *quantity* of teacher graduates to the *quality* of teacher graduates.

With teachers eligible to retire at age 60 in Indonesia, an estimated 55 percent of civil service teachers in the MoEC system will retire in 10 years starting in 2018 (SAKERNAS 2005 and 2015). The quality of the system in the decades ahead will depend on the policies to replace this cohort of retirees. Action is needed to ensure that the best possible replacements are employed regardless of the mechanism for hiring them.

#### **Teacher selection**

The most effective way to improve teacher quality and therefore student learning is to hire only the highest-guality candidates to become teachers. The planned increase in hiring of civil servant teachers of about 100,000 each year for next 10 years has the potential to transform the quality of the entire primary and secondary education system. Among observable characteristics, subject matter knowledge is one of the most important teacher characteristics for student learning (World Bank 2018c). The 2011 moratorium on hiring teachers and 2013 prohibition on using local government funds to hire teachers has resulted in multiple parallel systems for hiring educators in Indonesia, making it challenging to ensure those hired meet the highest standards.

Teachers are recruited either through the civil service or as "honorarium" teachers, who are on a lower pay scale than the civil service. Honorarium teachers were usually hired to respond to an earlier deficit of teachers or, as is still the case, since the absolute number of teachers is adequate, to respond to personal or financial considerations. District governments and schools resort to hiring non-civil service teachers to fill vacancies using various selection processes and criteria and tapping a variety of funding sources to pay their salaries.

Classroom teachers fall into different categories, with different hiring processes and different qualifications, salaries, and benefits. For the Ministry of Religious Affairs, civil service teachers and principals make up 19 percent of the workforce, and non-civil services 81 percent (MoRA 2018 Simpatika). For the Ministry of Education and Culture, civil servants are 40 percent of the teacher workforce, while teachers hired by community foundations (yayasan) are 25 percent, honorary teachers hired by the districts are 7 percent, and part-time teachers (often hired directly by schools) make up the remaining 29 percent (World Bank 2019).

Civil service teachers are known as PNS teachers (Pegawai Negeri Sipil, or civil services). PNS teacher candidates take a basic competency test (SKD) and subject-specific test (SKB) administered by MoEC or MoRA following the national civil service (BKN) exam. These are separate from the certification process.

#### Civil servant teacher hiring pathway<sup>1</sup>

Step one: *Identification of Need.* Law No. 14/2005 on Teachers and Lecturers on teacher employment, deployment, and transfers and MoEC Regulation No. 20/2010 give districts and provinces the authority to identify needs for civil servant teachers and teaching personnel:

- Each school supplies data on the need for teachers by subject matter to the district (primary and junior secondary education) and province office (senior secondary education). School also enters the same data into DAPODIK of MoEC.
- District and province offices send the teacher request to BKD (Regional Personnel Office) and BKD sends the request to KemenPAN-RB (the Ministry of Administrative and Bureaucratic Reform).
- MoEC monitors the existing number of teachers in each school, updates the data on schools' needs for teachers and informs KemenPAN-RB on the number of teachers (per subject) needed.
- KemenPAN-RB asks for confirmation on the request, sent by BKD and MoEC, to BKN (National Civil Service Agency). BKN is the agency that manages the database of civil servants and determines the number of new civil servant teachers to be appointed. BKN sends a confirmed number of new civil servant teachers to be appointed to KemenPAN-RB.<sup>85</sup>
- KemenPAN-RB determines the allocation of new teachers to be appointed to district and province offices.

Step two: Selection. All aspiring civil servants, including teachers, take the National Civil Service Agency (BKN) examination, which is a standardized online civil service exam (Tes Seleksi Kompetensi Dasar or SKD—basic competency selection test). Those wanting to be teachers take an additional exam set by MoEC which includes some subject-specific questions. Candidates who achieve above the minimum score on the BKN exam are then sent to the districts and provinces for selection. Districts and provinces can select any candidate from the pool, and there is no deselection based on low scores on the MoEC portion of the examination. School councils have no legal right to be involved in civil servant or contract teacher appointments, transfers, or removals.

#### Contract teacher hiring pathway

Contract teachers are hired by districts and provinces for one academic year using local funds. The requirements for contract teachers vary by province and district.

#### Honorarium teacher hiring pathway

Recruitment takes place at the level of the school. BOS or other locally generated funds, such as parents' contributions, are used, and there are no uniform standards for hiring, so quality varies greatly.

#### Preparing teachers

Indonesia faces a considerable challenge in providing an education workforce to deliver high-quality teaching to every student across a country of 17,000 islands and more than 700 ethnic and linguistic groups. The government takes this challenge seriously and continues to refine its policy framework to raise the status and quality of teachers and to improve education standards.

## A major reform in 2005 increased teacher qualifications and pay

Indonesia launched a major drive to improve the skills of its teaching workforce in 2005 by passing a comprehensive Teacher and Lecturer Law (Law No. 14/2005) to upgrade the career paths and management of the nation's teachers. The law, aimed at improving teacher gualifications and pay scales, mandated a university degree and teacher certification to upgrade teacher's competencies, before they were eligible for a professional allowance known as TPG (Tunjangan Profesi Guru). As a result, the share of teachers with the minimum Bachelor's (S1) degree increased from 37 percent in 2006 to 90 percent in 2016 (figure 4.1). By 2018 approximately 50 percent of teachers in Indonesia were certified, 17 percent were eligible for certification, and 30 percent were not eligible for certification (figure 4.2).

The professional allowances that accompanied the new certification process have led to pay increases, effectively doubling the income of certified teachers. This has aligned teachers' status with other professions such as law and medicine and provided incentives for teachers to upgrade their qualifications. Many preservice lecturers, principals, and teachers indicated that the perception of teaching as a career is improving rapidly and that more students are now attracted to enter the profession because of these policies.

Building on the 2005 Teacher Law, Indonesian policymakers have made further changes. For example, the initial model of teacher certification, mostly based on a teacher portfolio with no demonstrable impact on student learning, has been modified. In 2012, the Pendidikan dan Latihan

<sup>1.</sup> This pathway is for the recruitment of MoEC teachers; the MoRA recruitment pathway is similar.



#### FIGURE 4.1 Most teachers have university Bachelor's degrees

*Source:* Teacher census 2006 and DAPODIK 2016. *Note:* S1 denotes Bachelor's degree; PNS and non-PNS refer to civil service and non-civil service status of teachers.

Profesi Guru (PLPG) model required a 90-period (60 hour) teacher training course. And in 2018, the new Pendidikan Profesi Guru (PPG) model requires training of one year for new teachers and six months for existing teachers.

The quality and effectiveness of candidate selection, training, and certification all need improvement. Indonesia should make the most of the impending retirement of more than half of civil servant teachers by filling these positions with only the best candidates. To do this, the quality of preservice training institutions can be upgraded with training coordinated across the system and institutions consistently accredited. To take advantage of having a large number of applicants, underqualified candidates, particularly in the area of subject knowledge, should be removed from the selection pool.

#### **Reforming preservice teacher education**

Indonesia's regulatory requirements for prospective teachers are clear. Since the passing of the Teacher Law, the minimum academic requirement for entry into the teaching profession is a four-year university degree at the S1/D4 level.

Regulating teacher training institutions, considered by educational experts to be of utmost importance, is insufficiently addressed by existing policies.<sup>86</sup> Regulating annual student intakes more tightly, to correlate these more directly with

#### FIGURE 4.2 Half of general education teachers are certified, and a significant number of noncertified teachers are also eligible for certification



*Source:* DAPODIK 2017, teacher census 2006 and 2016. *Note:* S1 denotes Bachelor's degree. PNS and non-PNS refer to civil service and non-civil service status of teachers.

demand for newly graduated teachers, and expanding access to existing (and mandatory) postgraduate teacher training programs are of critical importance for education administrators at the subnational level.

Recruiting and training the right teachers is critical for the future of education in Indonesia. Despite improvements, there are still problems with creating a pipeline of qualified applicants who can meet the desired standards (box 4.1).

Despite an increase in those attending teacher colleges in recent years, teaching is still not attracting the best candidates into the career. In high-performing systems, such as those in Finland, Japan, and Republic of Korea (box 4.2), scores of those who want to become teachers are above the national average. In Indonesia the average 2015 PISA score of those who want to study to become teachers was below the national average. An OECD analysis of 2018 PISA data indicates that students who have ability in math and science want to become engineers and scientists rather than teachers.<sup>87</sup>

Admissions should be based on testing applicants' suitability for teaching. Designing selection procedures that test applicants' knowledge and characteristics (their suitability for teaching) before they begin training would likely improve the efficiency and effectiveness of preservice training. The set of characteristics people need if they are to

#### **BOX 4.1** Who decides to enter the teaching profession?

Indonesian teachers used to be caricatured as the downtrodden, poorly paid Oemar Bakrie in the popular Iwan Fals protest song. But the profession has become more attractive since the 2005 Teacher Law increased the salaries of certified teachers.

Indeed, the cohort of students entering preservice education in Indonesia is changing. In the past, many students refused entry to other faculties entered teacher education departments linked to their desired future—as in commerce or English—with no intention of becoming teachers or entering teaching. Now, Indonesia's certification system and the accompanying professional allowances have made teaching a more attractive career choice, and more students are entering the teaching profession (World Bank 2018c). The number of students in teacher training colleges increased nearly fourfold—from 516,609 in 2006 to 1,934,326 in 2012—and public institutes of teacher education (LPTKs) tend to be more selective in the candidates they take in.

But there has been criticism that the large pay increase has not achieved the desired increase in quality. A 2016 study of the salary adjustment, "Double for Nothing," concluded that in the short term there was no positive impact on student learning: "Despite this improvement in teacher pay and satisfaction, there was no impact on teacher effort toward upgrading their own skills, on teacher effort in the classroom, or on the ultimate outcome of student learning." Even so, the pay increase has increased the desirability of teaching as a profession in Indonesia, which can have a long-term impact on education and ultimately on development by attracting higher performing teachers (de Ree et al. 2017).

## **BOX 4.2** Republic of Korea's restriction of teacher training admissions raised applicant quality

The Indonesian government has no control over the number of applicants admitted to private preservice training institutions. The doubling of salary through certification has made teaching a more appealing profession, resulting in a significant oversupply of candidate teachers and wide variations in quality. Restricting the number of admissions could be helpful.

Korea's success in attracting top students to primary teaching is one example of how restricting training places can be effective. This was achieved primarily by limiting the number of places for the four-year undergraduate degree required to become a primary teacher—to ensure that supply meets demand. As a result, primary teaching is very attractive, and primary education teachers come from the top 5 percent of school leavers. This contrasts with fair and average school systems, which draw their teachers from the bottom 30 percent of school leavers (Barber and Mourshed 2007).

become effective teachers is well known, and these characteristics can be identified before students enter teaching. Such characteristics include high overall literacy and numeracy, strong interpersonal and communications skills, a willingness to learn, and the motivation to teach. Successful systems design selection procedures to test for these skills and attributes and select applicants who possess them before they enter training (OECD and ABD 2015).

The quality of teacher training programs remains inconsistent, and the quality of the graduates they produce should be improved. Some of the major problems include an oversupply of often poorly trained teachers, a mismatch between the subject training of teachers and subject vacancies arising in schools (particularly secondary schools), a lack of multigrade teaching skills in small schools, and inexperience in the use of problem-solving skills and child-centered methods in the classroom.

## Raising the standards of teacher training colleges

The government is trying to raise standards at teacher training colleges, known as LPTKs (Lembaga Pendidikan Tenaga Kependidikan, or Institutes of Teachers Education), most of which are private. One element for raising standards is that as of 2018 only LPTK with an accreditation level of A or B are eligible to implement the required one-year postgraduate teaching qualification (PPG). Most of the private colleges are rated C. This does not include teacher training institutions under MoRA.

While it is difficult to slow the growth of private institutions, the government is attempting to assure quality by entrusting PPG certification to only 45 institutions, which have A and B accreditation ranks. Currently there are 422 LPTKs across the country—of which only 41 are public. Of the 41 public LPTKs, 7 percent are rated A, 35 percent B, 23 percent C, and 35 percent are not yet accredited (figure 4.3).

Most of the accredited institutions are located in Java and big cities on other islands. The former Ministry of Research, Technology, and Higher Education (MoRTHE) was preparing an affirmative policy to expand the eligible list by including selected LPTKs accessible in remote districts, though many of these are accredited C or unaccredited, which improves geographic equity but raises quality concerns.

More high-quality teacher training institutions are needed both to train preservice teachers and to provide courses for certifying existing teachers. The 45 institutions do not have enough capacity. In addition to the core task to educate their own students, in the past 12 years, the 45 institutions have served about 1.5 million teachers in the certification process and tens of thousands of others in the process of academic upgrading to S1/D4. They have limited staff to provide all these services, and teacher loads are excessive.

In addition, students entering preservice teacher training programs (post-Bachelor's) often lack basic subject knowledge. Institutions must be reoriented to respond to basic gaps in subject knowledge in aspiring teachers to strengthen the capacity of Indonesia's teacher workforce. Higher standards for entry into teacher preservice training programs should allow teacher training institutions to focus on pedagogy as well as content.

The Directorate General of Learning and Student Affairs (DGLSA) of MoRTHE, now a part of MoEC, has a key role in managing the PPG program and ensuring that the LPTKs meet the requirements before granting them approval to conduct the PPG program. Indonesia has sought to learn from and apply the lessons of good practice in teacher training. MoEC Regulations No. 8/2009 and No. 87/2013 have attempted to set a new standard for preservice teacher training, and the PPG program's approval and monitoring systems are intended to function as a quality assurance mechanism.

#### **Deploying teachers**

#### **Challenges of teacher distribution**

Indonesia has several different systems for hiring and deploying teachers. But placing qualified teachers in areas in need is still a challenge because of the lack of timely information about requirements. The result is that teachers are deployed unevenly across the country. Alternative approaches to filling rural and remote area teaching positions should be explored, focused on developing local teaching talent in these areas. This type of approach has been implemented through central and district governments and LPTKs, with the district identifying potential candidates and providing



Source: MoRTHE 2015. https://ristekdikti.go.id/wp-content/uploads/2016/01/RAKERNAS-REFORMASI-LPTK.pdf.

allowances, while the central government provides tuition fees in designated LPTKs. However, on graduating from institutions in urban areas, some teachers choose not return to their districts.

Overall, Indonesia has an oversupply of teachers, counting both PNS and contract teachers, but they are unevenly distributed throughout the education system. Entry to teacher training is unregulated, so the competencies of graduates vary considerably—variation that continues in the process of teacher allocations. Data are inadequate about where teachers are most needed, for what levels, and for what subjects. Some schools have a teacher deficit, some a teacher surplus, and the discrepancies between districts are large.

The regional differences in the distribution of teachers by education level are very sharp: richer districts, especially those in Java and Bali, have access to more educated teachers. The share of teachers with a senior secondary or below education is under 20 percent in all districts in Java, but in some districts in Papua or Sulawesi, it reaches 60 percent. Making the distribution of teachers more equitable by ensuring that poor and remote schools have an equal share of qualified and experienced teachers might raise overall levels of learning and narrow learning disparities (box 4.3) (Cerdan-Infantes et al. 2013).

Supplying adequate numbers of high-quality teachers to the underdeveloped, border, and underdeveloped regions (3T) of Indonesia and to vocational senior secondary schools (SMKs) is a continuing challenge. Although the government has implemented programs such as the Bachelor's of Education in Border, Remote, and Underdeveloped Regions (SM3T) and the Frontline Teachers program (GGD), some teachers simply do not want to be deployed to remote areas. In addition, 3T districts do not have the financial capacity to fund the numbers of teachers that they need. Some 3T districts have also rejected teachers from the SM3T and GGD programs in favor of hiring local and non-civil service teachers (Kesuma et al. 2018).

#### Matching the supply of teachers with demand

To hire and deploy teachers more efficiently and equitably requires more reliable data on supply and demand. To get this, existing databases on teacher management information systems must be interlinked and kept current. To avoid oversupply, teacher training institutions can set quotas for student teacher intake (Kesuma et al. 2018).

Demand for teachers, as compiled by MoEC, was not communicated regularly to the former Ministry of Research Technology and Higher Education (MoRTHE) and to the higher education institutions that are the main suppliers of professional teachers. Better teacher demand data could improve student intake planning. But the lack of valid and reliable higher education data, relating specifically to the need for new graduate teachers, is a significant contributing factor in the current lack of matching teacher demand and supply. If such data were available and accessible to LPTKs, student intake planning could be improved substantially.

The lack of data calls for establishing a structured mechanism at the central level, such as a joint team involving representatives from MoEC, KemenPAN-RB, BKN, the Ministry of Home Affairs (MoHA), and the Ministry of Finance (MoF). That team would ensure better coordination of efforts and foster regular and timely communications to comprehensively address issues related to public sector demand for teachers and their allocation, recruitment, deployment, and distribution in Indonesia (Kesuma et al. 2018).

## **BOX 4.3** Teachers who received an allowance to teach in remote areas tended to have lower absence rates

Some interventions have had a measure of success in tackling the uneven distribution of well-qualified teachers. The government introduced a remote area allowance in 2007 to encourage teachers to teach in more rural areas. In 2012, some 53,000 teachers received this allowance, a small number relative to the scale of the challenge. Some evidence from a study in Papua in 2011 suggests that teachers receiving the allowance were more motivated and had lower absence rates than other teachers (OECD and ADB 2015). Another recent study (World Bank 2019) found similar results, where teachers who received remote area allowances had lower absenteeism rates (20.2 percent) compared with nonrecipients (26.6 percent). But the evidence is mixed, with a 2010 SMERU teacher absenteeism study finding that teachers who received a remote area allowance had higher absenteeism rates compared to other teachers in the same school (Toyamah et al. 2010). Training schools (LPTKs) are not currently required to apply quotas to the number of students they admit, so the number of teaching graduates produced by LPTKs is arbitrary and not responsive to changes in demand for new teachers.

Examples of good practices in assessing the demand for teachers have been identified in Semarang city, Gorontalo district, and East Jakarta municipality, among others. One common good practice is raising awareness among all relevant stakeholders, all the way from the executive to the legislative level, about the teacher redistribution process. A second is collecting data on the demand for teachers from all public schools. And a third is conducting in-depth verification of the collected data. For teacher selection for employment, these districts used local government budget resources to contract non-civil service teachers, requiring them have the same level of qualification and competencies.

## Efficiency opportunities in the retirement wave and multigrade teaching

The average age of teachers is increasing. The largest cohort of teachers are between 35 and 50 years old and, starting in 2018, 55 percent of all civil service teachers will retire over the next 10 years—about 960,000 individuals (World Bank 2018c). This wave of retirements presents a unique opportunity to address teacher supply and distribution issues by setting new pupil-teacher ratios and by not replacing teachers who retire from already overstaffed schools, while giving priority to filling positions in schools with high pupil-teacher ratios.

The current nine-teacher minimum staffing norm is not efficient or realistic for small primary schools, particularly in remote areas.<sup>88</sup> Eliminating this staffing norm in small primary schools would require teachers to learn how to teach students with diverse learning needs across multiple grades. Multigrade teaching will be essential to providing choice for pupils and to meeting the range of needs of different Indonesian contexts, particularly rural and remote communities. Good multigrade practices were developed in a variety of donor-supported programs, but few still exist because of MoEC's lack of interest and because many rural and remote schools have adequate numbers of teachers due to deployment policies and local contracts. But more widely sharing the good practices past multigrade teaching could more widely provide an incentive to moving away from wholeclass teaching and rote learning.<sup>89</sup>

By definition, the multigrade approach emphasizes child-centered, interactive learning. Collaborative learning and teaching across grades and levels should be possible for highly skilled and motivated professional teachers. Changing the culture of the school and taking account of local circumstances will be a key role for head teachers (OECD and ADB 2015).

#### Continually developing teachers' skills

In-service teachers need better content knowledge, well-structured lessons, effective classroom management, and a commitment to higher-order problem solving. This can be achieved though more effective professional development for current teachers to master pedagogical and subject matter competencies (box 4.4). Teachers also need to adopt inquiry and problem-solving methods so that students have 21st-century-based learning outcomes.

To continually develop teachers' competencies requires that teachers can build on their formal education throughout their careers. They need regular feedback and assessment—and high-performing teachers should work to improve the skills of others. In Indonesia's decentralized system, local governments have to help develop teacher competencies. High-quality local educational leadership and supervision need to be developed, and local governments and communities should be involved in improving teacher quality. Teacher working groups (clusters)—viable avenues for

#### **BOX 4.4** Indonesian government definitions of competencies

According to MoEC Ministerial Regulation No. 16/2007, teachers are required to have four competencies:

- Pedagogic competence—to plan, deliver, facilitate and evaluate learning.
- Personal competence—wise, charismatic, stable, mature, objective, with a good personality.
- Social competence—good verbal and written communication skills; use of communication technology; good relationships with student, parents, colleagues; good social skills; collaborative.
- Professional competence—content knowledge and mastery in the subject they teach.

teacher professional development—should be expanded, formalized, and adequately funded. Another important function of clusters is to lower the gap between the best and worst schools. Qualified core teachers need to be available to share their knowledge, and school principals and supervisors should support working groups. Teachers need more time for professional development, and rural teachers should have the same opportunities to participate in professional development.

Developing human capital through the continual improvement of teachers' skills and knowledge is an important building block of world-class education systems (Barber and Mourshed 2009). Effective performance appraisal systems do not just judge teacher performance, they also link explicitly to ongoing professional development opportunities that increase teacher knowledge and capability and help improve student outcomes. The bottom line is that students are entitled to be taught by competent teachers who keep themselves up to date with developments in their profession (Lowrie and Patahuddin 2018).

## How teachers develop competencies in Indonesia

One issue is that teacher training has not been clearly mandated as a responsibility of either central or local government. Without a clear mandate, district financing of teacher training remains uncoordinated and dependent on local government priorities. Teachers can develop competencies through a number of channels:

- Induction as a new teacher, as well as probation, mentoring, and systematic professional assessment.
- Continuing professional development: Functional training and collective activity (for example, teacher working groups/peer learning), academic publications, and the development of innovative practices.
- Feedback and supervision by supervisors and school principals.
- Support structures for teachers, including provincial and district education offices (Dinas, the Education Quality Assurance Agency (LPMP)), and school committees and councils.
- Continuing formal education.

#### New teacher induction and probation

Teachers new to a school and community should be properly introduced (inducted) into their new environments. An important first step in teacher professional development is ensuring that new teachers understand well the community context in which they are teaching (economic, social, religious, cultural)—and therefore the context from which their students come—and also the particular environment of the school (history, vision, mission, and so on).

Similarly, the probation processes mandated in Indonesia for new PNS should be seriously followed. New teachers should not automatically "pass" their probational period if they have not demonstrated the competencies needed to be a teacher for the rest of their professional lives. Experienced principals and supervisors could assess new teachers using standardized criteria and instruments to identify strengths and areas for improvement. Providing guidance to low-performing teachers, extending their probation period if they have not shown improvement, and even terminating them if they do not meet expectations should be options taken seriously in MoEC and MoRA.

#### Working groups and peer learning

Teacher working groups are the most viable avenues for teachers to receive continuous professional development—Kelompok Kerja Guru (KKG) at primary level, subject teacher working groups Musyawarah Guru Mata Pelajaran (MGMP) at secondary level, and principal working groups (KKKS). All should be at the forefront of in-service teacher training programs to improve teacher competencies. International research and experience consistently show that teachers learn best in communities of practice (Wenger 1998). Continuing professional development is an essential ingredient of any successful and improving education system, and this is best undertaken in school or teacher working groups—for primary teachers, this is usually in school clusters (Fullan 1992, 2010, 2015).

In Indonesia, these groups need additional support. In some districts, the working groups are very active, while in others they are defunct or meet infrequently. The Indonesian system of school clusters (gugus) and teacher working groups is well established but is often not used to best effect as a vehicle for teachers' professional development (Ragatz and Kesuma). This is partly due to the lack of useful materials, tight teacher schedules, and the costs to transport to group meetings, especially for teachers living in remote areas. In 2017, the Ministry of Education and Culture issued guidelines for the development of the teacher working groups, stressing their role in supporting professional development and the urgent need for them to realize this role.

Working groups need additional learning materials to cover pedagogical practices. Learning workshops should be better geared to the needs of teachers. Teachers need to fit meetings into their



schedules and have time to do this. And members should have access to the internet to enable professional development to continue outside the confines of the working group meetings. Financing differs across districts, but groups need to have stable and adequate funding. Project-based and government-funded MGMPs have more structure and have preplanned materials, resources, and meetings. The support and involvement of school principals are key to working group success. And school supervisors need to be involved since they can advise members and coach and help establish collective learning communities in schools and across school networks. Using WhatsApp or Facebook groups is an effective means of connecting cluster members and for connecting different clusters for specific grades or subjects.

Peer-to-peer learning helps teachers improve and can enhance student learning (Schleicher 2012, Lieberman and Miller 2011, McLaughlin and Talbert 2010). In Shanghai, China—where students routinely perform well on international tests teachers participate in teaching-research groups for mentoring and evaluation by peers during classroom observations (Liang, Kidwai, and Zhang 2016). In areas in Indonesia where these systems are working well, teachers can share their teaching challenges through KKG and MGMP meetings and receive input from their peers on how other teachers address similar challenges. These working groups can also improve teachers' content knowledge, especially for teachers who lack specialized educational backgrounds. Establishing collective learning communities in schools and networks across schools is thought by many researchers to be the best way to operationalize peer-to-peer learning (Lieberman and Pointer Mace 2008, Pacific Policy Research Centre 2010, McLaughlin and Talbert 2010, Lieberman and Miller 2011).

#### Continuing professional development

The government is putting more emphasis on continuing professional development, using established better practices as a means to improve teaching quality and urgently help meet higher teacher competency standards. The Open University (Universitas Terbuka, or UT) provides a pathway for teachers who need to upgrade their training. It has an extensive network and good working relationships with provincial universities. It also has a smart teachers' portal that contains a wide range of materials for teachers, including education laws, teaching workshops, video case studies, and new ideas to discuss and try.

#### The role of principals and supervisors

Principals in Indonesia need support to develop the skills that will enable them to play their mandated roles in managing teacher induction, probation, performance assessments, and appraisals; in mentoring, promoting, and sanctioning teachers; in disseminating information about teacher performance to the local community and local government; and in being accountable for overall school performance, as well as in demonstrating good practices themselves.

Similarly, school supervisors need support to develop the competencies required of them by Ministerial Regulation No. 12/2007. This regulation defined the competencies required of school supervisors in six dimensions: personal competence, managerial supervision, academic supervision, education evaluation, research and development, and social. A review by the Australia–Indonesia Basic Education Project (2007) found a large number of deficiencies in the knowledge and skills of school supervisors. The review team formed the view that these deficiencies still exist and affect supervisors' ability to undertake their tasks.<sup>90</sup> Indonesia now needs to address the weaker elements of the appraisal system by appointing principals and supervisors on merit rather than by mere length of tenure or experience or for other, more personal reasons—and by providing training to enable them to evaluate and support teachers through feedback that helps them improve teaching. In the longer term, Indonesia should consider expanding the appraisal framework to develop a merit-based system of progression and promotion for teachers, since international evidence indicates that this will further strengthen the quality of the teaching that learners experience.

While the principal is at the center of the devolved system of school-based management in Indonesia,<sup>91</sup> their current skills do not enable them to manage their leadership role well. In high-performing systems, principals are instructional leaders who take a positive stance in improving the quality of teaching and learning at their schools, as reflected in improved student outcomes. Many principals in Indonesia do not have adequate training or knowledge of school management and leadership and so are unable to lead their teachers in ways that will achieve better student outcomes. This deficiency was recognized by MoEC, and a regulation was issued in 2018 that explicitly



recognizes the instructional leadership role of the principal for teachers in the school (MoEC Regulation No. 15/2018). Both support to principals as well as enforcement of the regulation through monitoring and supervision will be important for it to be effective.

Principals in Indonesia are often selected on the basis of an examination, or they are nominated by a district education office rather than selected through a formal merit-based process. Most seem to receive little training. Some principals have been able to attend a Principal Preparation Program (PPP) managed and implemented through the Institute for the Development and Empowerment of School Principals, based in Solo, Central Java. Senior teachers nominated by their districts as potential future principals are prequalified for this position and are then meant to enter a queue for future vacancies in their districts. But some districts continue to appoint principals for other reasons. For many principals, professional development consists only of briefings on policy documents issued by the district office, or short management courses. Principals' working groups (KKKs) are meant to support principals but also need the increased financial and bureaucratic support suggested above for the teacher working groups.

It is not surprising, then, that many principals do not actively support staff development. This is a concern because the most powerful activities they can engage in are promoting, encouraging, and motivating their staff to participate in teacher learning and development—and providing instructional support to their teachers as needed (Robinson 2007).

Given the importance of school-based management in the context of decentralization, principals also have many other management and leadership roles. This includes leading the important processes of school self-assessment, improvement planning, and budgeting for and use of BOS and other funds. It also includes collaborating with the community as a whole and specifically with the school committee to gain support for the school.

#### Addressing absenteeism

Teacher absenteeism and the practice of teachers having several jobs mean that unit costs are often much higher than they need to be. Teacher absenteeism appears to be most damaging to children from poorer rural areas—those for whom it could be reasonably argued that the need for stable and high-quality teaching is of greatest importance.

Multiple studies on teacher absenteeism have been conducted in Indonesia, with the trend of general improvement but remaining high in rural areas and showing large variations. Through unannounced visits to schools by survey teams, a 2003 cross-country study found that almost one in five teachers in Indonesia was absent from the classroom (Chaudhury et al 2006). In 2008 the SMERU Research Institute followed the same methodology and noted an overall reduction in the teacher absenteeism rate from 19.6 to 14.1 percent. The same study found that the overall reduction in teacher absenteeism was due to the combined influence of improved management by districts, greater experience in decentralized education service delivery, and better incentives for teachers. In particular, the study associated lowered absenteeism with more regular supervision of schools, higher salaries, and teachers' overall sense of improved welfare. However, the teacher absence rate remains very high in remote areas (23 percent). Following the same method, a 2014 study also found that absenteeism decreased to 9.4 percent (ACDP 2014). Absenteeism has also been examined extensively in Papua. One study in the Papua highlands found an absenteeism rate of 50 percent (UNICEF 2012), while another study on Papuan schools found 33.5 percent teacher absenteeism, reaching 43 percent in remote schools (Surhati 2013). The average absence among a sample of absent teachers in Papua was 70 days and some absences were even a year in duration (Surhati 2013).

In addition to impacting student absenteeism, teacher absenteeism also impacted student learning outcomes (Suryadarma 2004; Suryadarma et al. 2004; Suryahadi and Sambodho 2013). The negative effects of teacher absenteeism are compounded because teachers are not regularly trained in using multigrade teaching techniques -they cannot successfully take over classes when another teacher is absent. Teacher absenteeism, when combined with student absenteeism, leads to learning that is random and discontinuous. In many regions of Indonesia, student absenteeism rates were significantly lower in schools where the teacher absence rate was zero than in schools where the teacher absence rate was above 20 percent (Toyamah et al. 2010).

#### Incentivizing and motivating teachers

## Salaries can be set to attract and retain qualified teachers

To attract good students to teaching and to keep good teachers in the classroom, teachers can receive incentives that motivate them to stay up to date and ensure student learning. Indonesia now has attractive salaries but could focus more on providing progressive salary and benefit schemes, to attract and retain qualified teachers and to signal that teachers are supported.

Incentives can be based on performance, and teachers can be held accountable for that performance. Nonfinancial incentives, such as career opportunities, can attract talented individuals into teaching and provide reasons for talented teachers to stay. These incentives should aim to keep the best teachers in the classroom, not in management.

The government pays professional allowances to 1.6 million teachers, and the total funding for the TPG was Rp 58.5 trillion for 2018, or about 13 percent of the total education budget. About half a million teachers are eligible for certification, and, if they were to be certified, this would require an increase in TPG expenditures of 50 percent.

A key criterion to maintain the professional allowance (TPG) is that teachers have to teach 24 teaching hours (which translates into 18 actual hours in the classroom, or about 3 hours a day) with a total workload of 40 hours a week. In part because teachers—particularly in smaller schools —struggle to attain 24 teaching hours a week, especially at the secondary level and particularly in rural areas, they are forced to teach at multiple schools and/or teach outside of their credentialed area in order to fulfill the hourly requirement. Because of this constraint, activities such as library management and adult education classes can also now be counted toward teaching hours, which enables teachers to retain their certification.

Teacher certification was intended to improve teacher qualifications (and ultimately their performance and student achievement), with the parallel objective of improving teacher salaries. But the incentives implicit in these two objectives were not always well used. Pressured by MoF to fully use mandated funds, MoEC itself pressure politicians, teacher associations, and teachers to accelerate and modify the certification process. This delayed the reform process and, particularly in the first few years, lowered certification requirements (Chang et al. 2014).

An evaluation of the certification program in 2012 found that student scores had not increased, but teacher welfare had, with teachers quitting their second jobs (de Ree et al. 2017). In 2012 and in 2018, the certification procedure was revised, but the impact of this new mechanism on student learning has not been assessed.

Teachers need to be motivated to perform. There are ongoing efforts to improve teacher performance through social accountability and linking teacher pay to teacher evaluation, such as the one promoted by the KIAT Guru pilot (box 4.5). The impact evaluation shows significant improvement in student learning outcomes. MoEC plans to expand KIAT Guru to all remote schools in Indonesia starting in 2021. MoEC and MoF should include positive lessons from this pilot into the payment of the TPG for all teachers nationwide (World Bank 2018a).

#### **Non-PNS teacher salaries**

In general, the salary for non-PNS teachers is based on the unit cost of the teaching fee per hour. Their salary per month is expected to be equal to the amount of Upah Minimum Pemerintah (UMP) or the government minimum wage, which is about Rp 2,500,000 (US\$167) a month. However, this salary system usually applies only for the non-PNS teachers who are assigned by the local government using the local government funds. Teachers hired on school contracts may get considerably less.

A non-PNS teacher teaching about eight hours a week will receive only about Rp 320,000 (US\$21) a month (World Bank 2019). The KIAT Guru Baseline Survey found that average salary of school-contracted teachers was at US\$40 per month, compared with PNS teachers at US\$600 per month. Schools are allowed to pay non-PNS teachers using BOS funds, with guidelines regulating the percentage of funds that can be used for this purpose. In February 2020, MoEC announced that up to 50 percent of BOS can now be used to pay school-contracted teachers.

The recruitment of teachers at school level relied on a 15 percent allocation provided by the School Operational Assistance Grant (Bantuan Operasional Sekolah—BOS). Recently this was changed to 50 percent of BOS (MoEC Regulation No. 8/2020). Schools with limited resources may need to rely solely on BOS for recruiting temporary teachers. Furthermore, the quality of temporary teachers recruited may not meet the quality standards set for civil service teachers, which may ultimately be reducing the quality of teaching and learning, based on analysis conducted by the World Bank.

Teachers in secondary schools are often expected to teach only the subject for which they are certified, and this makes it nearly impossible for teachers in small schools to teach full time. This could be addressed through options including revising regulations that limit the teaching of a subject other than that of the teacher's degree, adjusting preservice courses so that students become qualified in a major and a minor subject, and providing in-service courses and incentives to encourage teachers already in service to add an additional subject to their repertoire. Longer-term certification processes could be revised to require graduation in two subjects. Past policies of giving

#### BOX 4.5 Kiat Guru pilot program

#### KIAT Guru is a pilot program that aims to improve teacher presence, service performance, and student learning outcomes in remote primary schools

KIAT Guru (Teacher Performance and Accountability/Kinerja dan Akuntabilitas Guru) pilot is a collaboration of MoEC, TNP2K (National Team for Acceleration of Poverty Reduction), five disadvantaged districts, and the World Bank. Absenteeism in remote schools (19 percent) is twice the national rate (9 percent), with negative consequences for student presence, retention, and learning outcomes (ACDP 2014; UNICEF 2012, Usman et al. 2004). A key feature of KIAT Guru is that it empowers communities, including parents, to hold teachers accountable and ties the payment of teacher remote area allowance (Tunjangan Khusus Guru) to teacher presence. A community-led student learning diagnostic test provided information on basic literacy and numeracy outcomes to compare with the national curriculum target. This information is publicly shared and becomes the basis for community members to develop a joint agreement with teachers to improve the learning environment in school and at home. Teacher presence is recorded using an Android-based application and verified by

grants to each individual school, regardless of the number of students, encouraged the formation of small schools in urban as well as rural areas. Although there are disadvantages in doing so (see chapter 3), there are now significant opportunities to merge schools and achieve increased economies of scale in staffing and operational funding, particularly in urban areas. Additional funding is also now being provided to good performing schools and those in remote and isolated areas (OECD and ADB 2015).

## Gender differences, particularly in leadership positions

There are striking gender differences in the education workforce. There are about 40,000 more female teachers than male teachers at the primary level, while there are about equal numbers of female and male teachers at the junior secondary and senior secondary levels.<sup>92</sup> In terms of school principals, there are only 8,900 female principals, or 32 percent of total principals in East Java. community members, who also evaluate service delivery performance on a scorecard.

#### KIAT Guru results were statistically and significantly better than control schools

In 2016, one year after the pilot was launched, student learning was assessed. Language learning outcomes improved from 37.5 percent to 50 percent, and math outcomes from 37.4 percent to 48.8 percent. Teacher presence in school improved from 78 percent to 83 percent, and classrooms with teachers increased from 81 percent to 87 percent. KIAT Guru results were statistically and significantly better than control schools (at 0.19 standard deviation in mathematics and 0.17 standard deviation in language) (Gaduh et al. 2020). Starting in 2019, the Government of Indonesia expanded KIAT Guru and adapted the mechanism to urban secondary schools. KIAT Guru provides evidence-based policy for the government to introduce effective conditions for the US\$6 billion of annual spending on teacher allowances, including the Teacher Certification Allowance (Tunjangan Profesi Guru). An additional survey conducted in 100 schools indicated that compared to seniority-based pay, almost all surveyed teachers preferred performance-based pay (Perez-Alvarez, et al. 2020).

A study on civil servants (Sacks and Pierskalla 2018) indicates that males are more likely to be promoted to higher-ranked positions than females. There are several drivers contributing to the low number of females in leadership and management positions in the education sector, including the availability of equal opportunities for training, the multiple demands on women's time, and views held by women and men of women's leadership capabilities. To bring greater awareness of the lack of women in leadership positions, reports on the number of promotions and positions awarded should be publicized more broadly at district and provincial levels, as well as the percentages of females and males in civil servant positions. Direct measures to address this imbalance should include mandating targets for school director, Pengawas, Dinas, and ministry positions. Indirect measures can also be pursued, such as including information during preservice training about requirements for hiring for leadership positions and the fact that these positions are open to women. As part of a long-term approach, stories about successful female and disabled leaders could be incorporated into the school curriculum to help foster a more inclusive culture (Afkar, Yarrow, Surbakti, and Cooper 2020).

#### Recommendation 6a: Improve the quality of preservice institutions and the candidates that enter them

The civil servant teacher salary and certification payment attracts people to enter teacher education institutions, and the high demand for this education has encouraged the opening of additional private (and often low-quality) teacher education institutions. Preservice teacher education can be improved with an updated curriculum, blended approaches to offline, online, and distance teaching and learning, and more in-school and better supervised teaching practice, beginning in the first year of the candidates' education. This can be linked to more robust engagement by the accreditation body of teacher training institutes, as well as publication of the rate of acceptance of graduates of individual institutions to civil service teaching positions.

- Improve preservice institutions through better licensing and accreditation.
- Strengthen preservice institutions through targeted technical and financial support especially those in eastern areas—to stimulate improvements in quality and increases in accreditation ratings.
- Increase selectivity of LPTKs and enroll fewer, higher-quality candidates.

#### What can be changed or improved?

- The accreditation process for LPTKs could be strengthened and linked to the licensing process (including reducing the time lag between licensing and accreditation).
- The accrediting institution, BAN–PT, could also be strengthened to ensure that it has the capacity and authority for meaningful accreditation processing.
- LPTKs require support to improve their quality to meet accreditation standards, particularly in the eastern region since it is lagging behind.
- In addition to improving the institutions, it is also important to ensure the appropriate number and quality of teacher candidates entering the institutions.

#### What are the options to implement this change?

For improving the quality of preservice institutions:

 Policies and regulations for the operational licensing and establishment of new LPTKs could be revised with greater quality thresholds to control the number and quality of such institutions—such as the number of lecturers with the required higher degrees and the availability of the infrastructure and resources, such as schools for practice teaching.

- Funding and technical support could be provided to BAN-PT to ensure that it has the capacity and authority for a meaningful accreditation process.
- Grants/financing could be provided to incentivize LPTKs to meet the strengthened accreditation system. For example, grants could be provided to the 15 best LPTKs in each tier to help meet the quality standards to move up to the next tier (A, B, or C). This would involve looking at the accreditation report and assessing areas they would like to focus on improving. The grants would be provided to help LPTKs improve in these areas to meet the strengthened accreditation system.
- Although politically challenging, LPTKs that are not meeting and are not on track to meet accreditation standards in the near future could be closed. (Note that a different threshold could be applied in the eastern region.)

For improving the quality of candidates:

- To improve teacher preparation, MoEC and MoRA can jointly raise standards for enrollment in LPTKs. MoEC and MoRA could set competency standards of new teacher candidates. The Directorate General of Higher Education (DGHE) MoEC and Directorate General (DG) Islamic Education MoRA could incorporate these standards into the selection and entry process.
- In order to ensure the appropriate number of entrants, the DGHE and DG Islamic Education MoRA could identify qualified LPTKs and determine guided quotas for each of them.

## Recommendation 6b: Recruit the best teacher candidates and distribute them effectively

The caliber of teaching, including through better hiring. Indonesia should ensure that it has enough highly qualified teachers in the right locations, particularly in rural, remote, and low-performing schools.

#### What can be changed or improved?

## Indonesia can afford to hire only the most qualified candidates

Indonesia can insist on hiring only the most qualified candidates to become teachers. It can educate and pay them well, deploy them efficiently and equitably across the country, and provide incentives and support for continuous improvement. There



can be continual development of teachers' skills through more effective professional development, including lower-cost online options if proved effective. Given the need to reach more than 4 million teachers, new strategies have to be tested and scaled up in order to keep the best teachers in the classroom. Robust teacher evaluation systems can implemented and linked to incentives based on performance. Preparing teachers better requires targeted reforms, coordinated efforts, and clear and consistent implementation of regulations across independent training and decentralized administrative systems—a major challenge.

Indonesia can ensure that it has the right number of highly qualified teachers in the right locations, particularly in low-performing, remote, and rural schools, and that teachers are performing at their best. With 55 percent of civil service teachers retiring over 10 years starting in 2018 (about 960,000 individuals) (World Bank 2018c), there are major opportunities and risks to reshaping the teacher workforce for the next generation. Here are five ways to accomplish this:

## Attract and hire the best candidates and pay them more equitably

Many teachers lack the basic subject knowledge to effectively support student learning (Yarrow,

Masood, and Afkar forthcoming, Ragatz et al. 2015, Al-Samarrai et al. 2013). Hiring only highly qualified teacher candidates with strong knowledge of the subjects they will teach, whether as civil services (PNS) or as contract and honorarium teachers, is central to improving student learning (de Ree 2016). In addition, teacher pay within schools can be made more equitable—more dependent on performance and less on the hiring mechanism. Honorarium teachers' salaries are far below minimum wage at less than a fifth of a certified civil service teacher's income (Yarrow, Masood, Rythia, and Afkar forthcoming). This gap in pay should thus be narrowed.

#### Resist political pressures in hiring

Numbers of non-civil service teachers have grown in recent years, with uneven quality control. The large pipeline of retirements presents an opportunity to begin addressing the imbalance in quality. While some existing highly qualified contract teachers can be hired into newly opened civil service positions, no candidates who lack qualifications should be selected despite political and other nonprofessional reasons for doing so.

No one should be teaching who is not qualified —whether it is schools hiring honor teachers, districts and provinces hiring contract teachers, or PNS teachers hired centrally. All new teachers must have some minimum subject knowledge and meet standards for the profession.

#### What are the options to implement this change?

- MoEC and MoRA can help attract the best teacher candidates by enhancing the visibility and increasing the status and reputation of accredited LPTKs. This can be done, for example, through the more rigorous selection of entering students and actively advertising among senior secondary graduates that teaching is a worthwhile and profitable career.
- MoEC, MoRA, and MoHA can set minimum standards for hiring teachers across contract types by working closely with provinces and districts. Subject knowledge of the subject(s) to be taught can be one of the main requirements for teachers hired into new and vacant PNS posts.

#### Recommendation 7: Improve professional development and calibrate incentives

#### Ensure continuous professional development

Teacher competencies can be continually improved through high-quality teacher professional development linked to career progression and promotion. This can begin by serious processes of induction and probation and continue through systematic and regular assessment processes. Special focus should be on the design and use of student learning assessments to improve teaching and student learning.

Professional development is often sporadic due to the variation in funding of activities by districts, minimal evidence of impact, and the fact that teachers in remote schools tend to have fewer opportunities. This is partially addressed by the recent Zonasi reform (MoEC Regulation No. 51/2018), but more work and attention are needed to effectively support teachers, supervisors, and school principals. The teacher and principal working groups can be strengthened by increasing their resources, blending on-the-job training and in-the-job mentoring, and expanding their responsibilities.

There is a high level of interest in using online learning to improve teacher practices and student learning. Excellent evidence exists on the efficacy of some EdTech interventions, but no rigorous evidence exists on the impact of online learning in Indonesia. Before committing resources to specific online learning programs, MoEC and MoRA can work with online teacher training providers to evaluate products in the public and private domains to identify promising practices and highest-guality options.

## Experiment with ways to increase accountability through incentives

Certified civil service teachers who are absent two days out of five receive the same payment as those who work all five days and come early and stay late to help struggling students. Teachers generally do not receive incentives based on performance. Indonesia has piloted the use of incentives (the KIAT Guru pilot in rural areas as well as the Daerah Khusus Ibukota Jakarta program), and these can be adapted and tested more widely to try to improve both equity and performance. Some existing teacher allowances can be made conditional, tied to objective and pofessional development to improve teaching competence.

## What are the options to implement this change?

- MoEC and MoRA can build on current reforms, improving professional development by enforcing procedures around induction, probation, and teacher assessment; ensuring greater coordination at the local level among LPTKs, district governments and other actors working with teachers; and strengthening teacher, principal, and supervisor working groups and coaching to support their efforts to increase the quality of teaching and decrease disparities in learning achievement among schools.
- MoHA, MoEC, and MoRA can work together to further test, adapt, and then implement existing teacher incentive programs more broadly.
- MoRA and MoEC, working at the national and subnational level, can address gender disparities, particularly for principals, by encouraging and providing more opportunities for female teachers to become civil servants and principals, and by creating mentorship and leadership programs.

#### References

- ACDP (Analytical and Capacity Development Partnership). 2014. "Teacher Absenteeism in Indonesia." Policy Brief, November 2014, Jakarta, Education Sector Analytical and Capacity Development Partnership. http:// repositori.kemdikbud.go.id/8560/1/Policy-Paper -ACDP-Teacher-Absenteeism-English-FINAL.pdf.
- Afkar, R., N. Yarrow, S. Surbakti, and R. Cooper. 2020. Inclusion in Indonesia's Education Sector: A Subnational Review of Gender Gaps and Children with Disabilities. Policy Research Working Papers, World Bank, Washington, DC. https://doi.org/10.1596/1813–9450–9282.
- Al-Samarrai, S. 2013. Local Governance and Education Performance: A Survey of the Quality of Local Education Governance in 50 Indonesian Districts. Washington, DC: World Bank. http://documents.worldbank.org/ curated/en/794841468044380862/Main-report.

- Barber, M., and M. Mourshed. 2007. *How the World's Best-Performing School Systems Come Out on Top.* New York: McKinsey & Company. https://www.mckinsey. com/~/media/McKinsey/Industries/Public%20and%20 Social%20Sector/Our%20Insights/How%20the%20 worlds%20best%20performing%20school%20systems %20come%20out%20on%20top/How\_the\_world\_s\_best -performing\_school\_systems\_come\_out\_on\_top.pdf.
- ——. 2009. Shaping the Future: How Good Education Systems Can Become Great in the Decade Ahead. Report presented at the International Education Roundtable, July 7, Singapore, McKinsey Education.
- Cerdan-Infantes, P., Y. Makarova, S. Al-Samarrai, and D. Chen. 2013. "Spending More or Spending Better: Improving Education Financing in Indonesia." Policy Brief, World Bank, Washington, DC.
- Chang, M. C., S. Shaeffer, S. Al-Samarrai, A.B. Ragatz, J. de Ree, and R. Stevenson. 2014. *Teacher Reform in Indonesia: The Role of Politics and Evidence in Policy Making.* Directions in Development: Human Development. Washington, DC: World Bank. https:// openknowledge.worldbank.org/handle/10986/16355 License: CC BY 3.0 IGO."
- Chaudhury, N., J. Hammer, M. Kremer, K. Muralidharan, and F. Halsey Rogers. 2006. "Missing in Action: Teacher and Health Worker Absence in Developing Countries." *Journal of Economic Perspectives*, 20:1, 91–116.
- de Ree, J., K. Muralidharan, M. Pradhan, and H. Rogers. 2017. "Double for Nothing? Experimental Evidence on an Unconditional Teacher Salary Increase in Indonesia." Policy Research Working Paper 8264, World Bank, Washington, DC.
- Fullan. 1992, 2010, 2015. *The New Meaning of Educational Change*. New York, NY: Teachers College Press.
- Fullan, M. 2010. All Systems Go: The Change Imperative for Whole System Reform. Thousand Oaks, CA: Corwin.
- Gaduh, A., Pradhan, M., Priebe, J., and Susanti, D. 2020. "Scores, Camera, Action? Incentivizing Teachers in Remote Areas." RISE Working Paper Series. 20/035. https://doi.org/10.35489/BSG-RISE-WP\_2020/035.
- Hanushek, Eric A. 2011. "Valuing Teachers: How Much Is a Good Teacher Worth?" *Education Next* 11 (3): 40–45.
- Kesuma, R., A. Utz, P. W. Bodrogini, and R. Pruwana. 2018. "Efficient Deployment of Teachers: A Policy Note." Working Paper, World Bank, Washington, DC.
- Liang, X., H. Kidwai, and M. Zhang. 2016. *How Shanghai* Does It: Insights and Lessons from the Highest-Ranking Education System in the World. Washington, DC: World Bank.
- Lieberman, A., and L. Miller. 2011. *Teacher Leadership.* San Francisco, CA: Jossey-Bass.
- Lieberman, A., and D. H. Pointer Mace. 2008. "Teacher Learning: the Key to Educational Reform." *Journal of Teacher Education* 59 (3): 226–234.
- Lowrie, T., and S. Patahuddin. 2018. "Developing Indonesian STEM Education through Enhancing Teachers'

Spatial Reasoning." Background paper prepared for World Bank Office, Jakarta, Indonesia.

- McLaughlin, M. W., and J. E. Talbert. 2010. "Professional Learning Communities: Building Blocks for School Culture and Student Learning." *Voices in Urban Education* 27 (1): 35–45.
- MoEC (Ministry of Education and Culture). 2016. DAPO-DIK (Data Pokok Pendidikan Dasar dan Menengah).
- 2017. DAPODIK (Data Pokok Pendidikan Dasar dan Menengah).
- 2018. Statistik Pendidikan Indonesia 2017/2018. Jakarta.
- ——. 2019. Data Referensi Pendidikan. https://referensi. data.kemdikbud.go.id/index21.php.
- MoRA (Ministry of Religious Affairs). 2018. EMIS (Education Management Information System).
- MoRA (Ministry of Religious Affairs). 2018. Simpatika (Sistem Informasi dan Manajemen Pendidik dan Tenaga Kependidikan).
- MoRTHE (Ministry of Research, Technology, and Higher Education). 2018. Statistik Pendidikan Tinggi 2018. Jakarta.
- OECD (Organisation for Economic Co-operation and Development) and ADB (Asian Development Bank). 2015. *Education in Indonesia: Rising to the Challenge*. Paris: OECD Publishing.
- Pacific Policy Research Centre. 2010. "21st Century Skills for Students and Teachers." *Research & Evaluation*. August. Kamehameha Schools, Research and Evaluation Division, Honolulu, HI.
- Perez-Alvarez, M., J. Priebe, and D. Susanti. 2020. Teacher Accountability and Pay-for-Performance Schemes in (Semi-) Urban Indonesia: What do Education Stakeholders Think? (English). World Bank. Washington, DC.
- Ragatz, A., and R. Kesuma. 2009. "Teacher Working Groups in Indonesia: A Study of the Current Situation



and Opportunities for Increased Effectiveness." Background paper prepared for World Bank Office, Jakarta, Indonesia.

- Ragatz, A., S. Iskandar, R. Kesuma, S. Sugiarti, and A. B. Ragatz. 2015. Indonesia—A Video Study of Teaching Practices in TIMSS Eighth Grade Mathematics Classrooms: Understanding What Teaching Practices Are Used, Why They Are Used and How They Relate to Student Learning (English). Washington, DC: World Bank.
- Robinson, V. 2007. "School Leadership and Student Outcomes: Identifying What Works and Why?" ACEL William Walker Oration, Australian Council for Educational Leaders (ACEL), Sydney, Australia.
- Sacks, A., and J.H. Pierskalla. 2018. *Mapping Indonesia's Civil Service* (English). World Bank. Washington, DC.
- SAKERNAS (Survei Angkatan Kerja Nasional). Various years. Badan Pusat Statistik.
- Schleicher, A. 2012. Preparing Teachers and Developing School Leaders for the 21st Century: Lessons from around the World. Background Report for the International Summit on the Teaching Profession. Paris: OECD Publishing. https://www.oecd.org/site/eduistp2012/ 49850576.pdf.
- Surhati, S. 2013. "Trends in Education in Indonesia. Education in Indonesia."
- Suryahadi, A. and P. Sambodho. 2013. Assessment of Policies to Improve Teacher Quality and Reduce Teacher Absenteeism. SMERU Working Paper, Jakarta: SMERU Research Institute. http://www.smeru.or.id/sites/default/files/publication/improveteacherquality.pdf.
- Suryadarma, D., A. Suryahadi, S. Sumarto, and F. Halsey Rogers. 2004. The Determinants of students performance in Indonesian public primary schools: the role of teachers and schools. SMERU Working Paper, Jakarta: SMERU Research Institute. http://www.smeru.or.id/ sites/default/files/publication/determinanteng.pdf.
- Toyamah, N., B. Sulaksono, M. Rosfadhila, S. Devina, S. Arif, S.A. Hutagalung, E. Pakpahan, and A. Yusrina. 2010. "Teacher Absenteeism and Remote Area Allowance Baseline Survey." Jakarta: SMERU Research Institute.
- UNICEF (United Nations Children's Fund). 2012. We Like Being Taught: A Study on Teacher Absenteeism in Papua and West Papua, Technical Report.
- Usman, S., Akhmadi, and Suryadarma, D. 2004. When Teachers are Absent: Where Do They Go and What Is the Impact on Students? SMERU Research Institute, Jakarta. http://www.smeru.or.id/en/ content/when-teachers-are-absent-where-do-they -go-and-what-impact-students.
- Wenger, E. 1998. Communities of Practice: Learning, Meaning, and Identity. Cambridge: Cambridge University Press. https://doi.org/10.1017/CBO9780511803932.

- World Bank. 2018a. Growing Smarter: Learning and Equitable Development in East Asia and Pacific. Washington, DC: World Bank. doi:10.1596/978–1-4648–1261–3.
  - ——. 2018b. Indonesia Economic Quarterly: Learning More, Growing Faster. June. Jakarta: World Bank. https:// openknowledge.worldbank.org/handle/10986/29921.
- ——. 2018c. World Development Report 2018: Learning to Realize Education's Promise. Washington, DC: World Bank. https://www.worldbank.org/en/publication/ wdr2018.
- 2019. Primary Education in Remote Indonesia: Survey Results from West Kalimantan and East Nusa Tenggara. Washington, DC: World Bank. https://docn uments.worldbank.org/en/publication/documents -reports/documentdetail/383471576785203185/primary -education-in-remote-indonesia-survey-results -from-west-kalimantan-and-east-nusa-tenggara.
- 2020. Indonesia Public Expenditure Review 2020: Spending for Better Results. Washington, DC: World Bank. https://openknowledge.worldbank.org/handle/10986/ 33954 License: CC BY-NC 3.0 IGO.
- Yarrow, N., Masood, E. Rythia, and R. Afkar. Forthcoming. Measuring the Quality of Education Services in Indonesia. Jakarta: World Bank.

#### **Government laws and regulations**

Law No. 14/2005 on Teachers and Lecturers. https://jdih. kemenkeu.go.id/fulltext/2005/14TAHUN2005UU.htm.

- MoEC Regulation No. 12/2007 on Standard of School/ Madrasah Supervisors. http://simpuh.kemenag.go.id/ regulasi/permendiknas\_12\_07.pdf.
- MoEC Regulation No. 16/2007 on Standard of Teachers' Academic Qualifications and Competence. http:// vervalsp.data.kemdikbud.go.id/prosespembelajaran/file/ Permendiknas%20No%2016%20Tahun%202007.pdf.
- MoEC Regulation No. 8/2009 on Preservice Teacher Training Program. http://luk.staff.ugm.ac.id/atur/Permen 08-2009.pdf.
- MoEC Regulation No. 20/2010 on Norms, Standards, Procedures, and Criteria in Education. https://luk.staff.ugm.ac. id/atur/Permendiknas20–2010NormaPendidikan.pdf.
- MoEC Regulation No. 87/2013 Preservice Teacher Training Program. https://luk.staff.ugm.ac.id/atur/Permendikbud 87-2013PendidikanProfesiGuru.pdf.
- MoEC Regulation No. 15/2018 on Fulfilment of Teacher, Principal, and School Supervisors workloads. http://simpuh. kemenag.go.id/regulasi/permendikbud\_15\_18.pdf.
- MoEC Regulation No. 51/2018 on New Students Admission. https://jdih.kemdikbud.go.id/arsip/PERMENDIKM BUD%20NOMOR%2051%20TAHUN%202018.pdf.
- MoEC Regulation No. 8/2020 on BOS Guideline. https:// jdih.kemdikbud.go.id/arsip/Salinan%20Permendikbud %20Nomor%208%20Tahun%202020.pdf.



#### How to connect all Indonesian schools in 2020?

Providing connectivity to schools can contribute to improving access to and the quality of student education when used effectively. It can also help teachers access resources for training and support, even while schools are closed to students during COVID or other crises. However, there is a risk that internet and technology access will be limited to well-resourced schools in urbanized environments. Currently, just over 55 percent of Indonesian schools under MoEC have some form of internet connection, while the percentage for MoRA is slightly higher—59 percent.

This is what it would take to connect 100 percent of schools to the internet:

- Ensure that all schools within reach of the existing fiberoptic network are connected to it for affordable, high-capacity broadband internet. Close to 50 percent of all schools are affordably within reach of a fiber-optic connection, while only 1 percent are connected to it.
- Provide mobile broadband connections to schools that cannot connect to the fiber-optic network. An estimated 45 percent of the 50 percent of schools not able to connect to the fiber-optic network could be connected in this way.
- Conduct a detailed assessment of how to connect the remaining 5 percent of schools. Connecting these schools would require a more detailed assessment to determine the most cost-effective solutions. Many might benefit from ongoing mobile (broadband) deployment, while the rest might be required to connect via satellite.

#### Introduction

Providing connectivity to schools can potentially contribute significantly to improving access to and the quality of education when used effectively, while also becoming more important as the knowledge economy expands and diversifies the range of education, management, and commercial services that can be conducted online. Even with slower internet connections, it is possible to use technology to improve the efficiency and effectiveness of school administration, management, and communication, while also enabling schools to gain access to a diverse range of online commercial services. As the reliability and speed of internet connections improve, so does the capacity to use technology to provide an array of professional development, curriculum support, and online learning services to principals, educators, learners, and their parents-improving access to quality educational resources, training school personnel of all types, and enabling learners to study in more flexible and independent ways with support from their teachers.

In Indonesia, there is a risk that internet and technology access will remain the preserve of well-resourced schools in urbanized environments, but this is not a necessary future given the widespread availability of internet access already in place across the country. With political will and judicious use of financing mechanisms already available, it is both affordable and technically feasible to deliver internet connections to *all* Indonesian schools. This spotlight provides information on what would be required to make this vision a reality and identifies the mechanisms that can be used to achieve it.

#### The status quo

According to data from DAPODIK 2019, just over 55 percent of Indonesian schools under the Ministry of Education and Culture (MoEC) have some form of internet connection, with a few notable variations according to school type (table S1.1). Meanwhile, based on data from the Ministry of Religious Affairs (MoRA) Educational Management Information System (EMIS), there is a slightly higher rate of connected schools for schools under MoRA; around 59.3 percent schools were connected in 2018/2019 (see table S1.1).

#### TABLE S1.1 Connected MoEC and MoRA schools

School type	With internet	Without internet	Percent connected	
MoEC schools				
Sekolah Dasar (SD)	78,863	70,198	52.90	
Sekolah Luar Biasa (SLB)	1,349	893	60.20	
Sekolah Menengah Atas (SMA)	9,404	4,508	67.60	
Sekolah Menengah Kejuruan (SMK)	9,713	4,554	68.10	
Sekolah Menengah Pertama (SMP)	22,342	18,126	55.20	
Total	121,671	98,279	55.30	
MoRA schools				
Madrasah Ibtidaiyah (MI)	18,029	6,922	72.30	
Madrasah Tsanawiyah (MTs)	6,198	11,165	35.70	
Madrasah Aaliyah (MA)	5,728	2,437	70.20	
Total	29,955	20,524	59.30	

Source: DAPODIK, MoEC (2019), and MoRA EMIS (2019).

While this represents a good initial base of connected schools, it is important to disaggregate these further by connection type given the significant variances in connectivity speeds and download limits between them (table S1.2).

The distribution of school connectivity across the country is shown in figure S1.1. DKI Jakarta Province ranked highest, with around 73.2 percent of schools connected to the internet. Papua Province is the least connected province educationally, with only 21 percent of schools having internet access.

However, the story is slightly different for MoRA schools, with Kalimantan Utara reported as having the lowest internet coverage (3.1 percent) compared with other provinces in Indonesia within the same year (figure S1.2).

These variations are important as the utility of different internet connection differs widely according to their speed and cost. The above data, for example, suggest that there is a significant variance between schools that are within reach of a fiber-optic internet connection and those that actually have one, which seems a lost opportunity given that residential tariffs for fiber-optic connections are reasonably affordable (see below).

Connection type	Typical connectivity specifications	Number of schools connected	Percentage of schools connected
MoEC schools			
Mobile broadband (Telkomsel, Smartfen, Indosat, XL, etc)	Flexible and low setup cost, higher average GB/month recurring cost (around US\$1.20 for each GB per month)	92,405	42.00
Fiber optic	Permanent connection, higher setup cost, and lower access than mobile broadband connection. Unlimited monthly connection with speed differentiation, with average recurring cost between US\$20 (10 MBps) and US\$150 (200 MBps) per month.	22,371	10.20
JARDIKNAS <sup>1</sup>	An internet connection provided by MoEC through Telkom since 2006 but reduced significantly after 2015. The connection has with max speed of 32 or 64 KBps (4 KBps or 8 KBps in real terms).	232	0.10
Satellite/VSAT	Internet access that reached remote areas in Indonesia. Very high setup cost, with even higher recurring monthly cost. The average cost per GB each month is US\$8.80.	485	0.20
Other	Other or unknown type of internet connection	6,178	2.80
Total MoEC schools		121,671	55.30
MoRA schools			
Telkom/Speedy	Mix of Indiehome connection with average 10 MBps speed, as well as outdated copper line Speedy with average 1 MBps (0.25 MBps) average speed.	17,481	34.70
Fiber-optic	Permanent connection, higher setup cost and lower access compare to mobile broadband connection. Unlimited monthly connection with speed differentiation, with average recurring cost minimum	240	0.40
Wifi/Telkom Indieschool	US\$20 (10 MBps) and maximum US\$150 (200 MBps) per month. Wifi ID connection with average speed of 2 MBps for each user. Currently free provided by Telkom. <sup>2</sup>	5,827	11.50
Satellite/VSAT	Internet access that reached remote areas in Indonesia. Very high setup cost, with even higher recurring monthly cost. The average cost per GB each month is US\$8.8.	76	0.20
Other	Other or unknown type of internet connection.	6,353	12.60
Total MoRA schools		29,955	59.30

#### TABLE S1.2 School connections by type, MoEC and MoRA

Source: DAPODIK 2018, 2019.

Notes

1. https://sekolah.jardiknas.kemdikbud.go.id/unduh; https://id.wikipedia.org/wiki/Jardiknas\_Schoolnet.

2. https://www.antaranews.com/berita/352523/telkom-indischool-fasilitasi-wifi-100000-sekolah.



## FIGURE S1.1 Percentage of distribution of school connectivity map by province, MoEC, 2018/2019

Source: DAPODIK 2019.

## FIGURE S1.2 Percentage of distribution of school connectivity map by province, MoRA, 2018/2019



Source: EMIS 2019.



FIGURE S1.3 Internet speed of schools by province, 2018/2019

Source: World Bank staff, based on 2019 nPerf data.

#### How do we connect all schools?

To attain connectivity for Indonesian schools, there are two related considerations:

- How can we get 100 percent of schools connected to the internet?
- How can we ensure that all connected schools have the best possible internet connection available to them?
   A strategy to achieve this might incorporate the follow-

ing key elements:

- Ensure that all schools within the fiber-optic network are connected to it to get affordable, high capacity broadband internet. About 30 million homes (with about 70 million people) are able to connect to the fiber-optic network. This suggests that close to 50 percent of all schools should be affordably within reach of a fiber-optic connection (though only 1 percent are currently exploiting this opportunity). According to the websites of internet service providers, an entry-level subscription (20 MBps) starts at US\$20/month, while a 100 MBps residential service costs US\$60/month.
- Provide mobile broadband connections wherever possible to all remaining schools that cannot connect to the fiber-optic network—either LTE or 3G connections, depending on availability. While such connections would not enable direct internet access on any significant scale

for students, they would at least provide an initial connectivity solution for schools to access online services, communication tools, management applications, online professional development opportunities, and downloadable educational resources for use by teachers in the classroom. According to the Ministry of Communication and Informatics, by the end of 2018, GSM reportedly covered 98 percent of the population, while faster 3G and LTE connection reached 93 percent and nearly 96 percent respectively.93 This suggests that most schools not within range of the fiber-optic network could access the internet via LTE and/or 3G connections, especially if outdoor antennae boost the connection. Assuming that school access to mobile broadband mirrors general population access, this means that 45 percent of the 50 percent of the schools unable to connect to the fiber-optic network could be connected in this way, bringing the total of connected schools to 95 percent.

 Assess how to connect the remaining 5 percent of schools. Schools that are not able to connect to the internet either via the fiber-optic network or mobile broadband tend to be on remote islands and in other remote locations, such as the interior of Papua. Connecting these schools would require a detailed assessment to determine the most cost-effective solutions. Many might benefit from ongoing mobile (broadband) deployment

#### **SPOTLIGHT 1**

(such as the USO Fund 5000 BTS blank spot). The remaining schools might be required to connect via satellite, which would limit functionality given the high current cost of satellite capacity. Given these high costs and relatively poor quality of satellite connections, this might be considered a solution of last resort.

#### How can it be arranged?

MoEC can provide support for local governments:

- Develop a road map and brief guidelines to connect all schools in Indonesia by 2022, to be used as a guideline for local governments and schools to compose their connectivity plan.
- Advise the Ministry of Home Affairs (MoHA) to reinforce the importance of connecting all schools to achieve education quality targets, through issuance of circular to all local governments.
- Provide affirmation measures for off-grid schools—both for electrification and internet access.
- Conduct monitoring and evaluation to ensure that program targets are met.

MoRA can provide support:

 Generate technical guidelines and instructions for local provincial offices and educational institutions to procure high quality internet connections for all learning institutions under MoRA.

With policy guidance and coordination support from MoEC, MoRA, provincial, district, and municipality education offices can establish priority programs to connect all schools in their region. This will require the local government to:

- Work with Communication and Informatics Offices (Dinas Kominfo) and their schools, to develop differentiated plans for schools in the use of technology based on the availability of internet services.
- Cover initial investments of basic equipment (such as modems, routers, laptops or tablets, and projectors) and initial internet packages using local government budgets (APBD, Anggaran Pendapatan dan Belanja Daerah) or special allocation funds (DAK, Dana Alokasi Khusus) for education. Schools will continue to use BOS (Regular, Kinerja, and Afirmasi) to pay the recurrent costs of internet subscriptions.

#### FIGURE S1.4 Possible framework agreement implementation process



- Provide financial and technical support to schools outside the electricity grid to procure alternative sources of energy.
- Establish service agreements with vendors for installation service and maintenance, particularly for schools in remote areas.
- Process is similar for MoRA, working with district and province level MoRA offices.

#### Framework agreements as a procurement tool

Framework agreements are preliminary agreements entered—ideally over longer, multiyear periods—between a central institution and service providers that serve as an umbrella document for an individual school contract with one or more selected companies. Such agreements are commonly used by governments to facilitate ICT procurement. For example, both the Netherlands and the United Kingdom use framework agreements for such purposes. Similarly, the Government of Indonesia already uses framework agreements for similar purposes.<sup>94</sup>

Framework agreements could provide a good contracting vehicle between MoEC and telecommunications operators/providers to facilitate procurement of connectivity at reasonable prices. They provide a means to outline the key points of the required service provision, to establish quality standards with the value for money for bulk purchasing, and initiate a "mini competition" among these operators to provide a better and wider scope of services for schools across Indonesian provinces.

Both MoEC and individual schools will benefit from such agreements. MoEC will be able to leverage them to increase the number of schools with access to connectivity faster. Framework agreements reduce the transaction cost and time to purchase connectivity through a centralized contract. Schools can work within the negotiated terms and conditions agreed at the beginning of the process to use BOS funds to buy quality connectivity and gain direct access to better after-sales service.

Here is one suggested outline of how a framework agreement could be harnessed for this purpose:

## Further expand the use of ICT to improve teaching and learning

Once connectivity is in place and ready for schools to use in their teaching and learning plans, it then becomes possible to expand the use of technology further for all students. The BOS Kinerja and BOS Afirmasi programs were launched in 2019 to enable schools in the outermost and border areas, as well as those performing well, to procure ICT equipment for teaching and learning such as PCs, laptops, tablets, and projectors as well as for internet connectivity (MoEC Regulation No. 31/2019 on BOS Kinerja and Afirmasi).

Schools can use these above funding schemes to reduce student-computer ratios and increase the exposure of students to technology, enabling them to learn more effectively and acquire 21st century skills. In 2020, the utilization of BOS Kinerja is no longer specifically targeted for ICT equipment and connectivity but following the regulation on regular BOS which have also allowed to fund multimedia learning facilities procurement. BOS Kinerja allocation in 2021 was removed because one of the indicators used in its calculation, that is the national exam score, will not be available as the national exam will no longer be implemented (Financial Note 2021, Book II page 3–91).

## Why should we connect schools to the internet?

The internet can deliver education technology for student and teacher learning, as well as administrative applications to improve education quality and efficiency. Investing in connectivity can help to address high inequality, low school capacity, lack of capacity of educators, lack of access to curriculum materials and learning resources, and low levels of reporting of even basic school management and financial information. This is particularly important in the time of COVID–19, where teachers need support in providing effective remote instruction as well as in closing learning gaps once schools re-open.

Connectivity is a means to an end not an end in itself, since not all EdTech investments will necessarily improve student learning. Initiatives that expand access to computers and internet alone generally do not improve kindergarten to grade 12 student grades and test scores though they do increase computer use and improve computer proficiency (Bhardwaj, Yarrow, and Cali 2020). Many novel applications of technology to education, such as interactive whiteboards or virtual reality, attract wide interest from school administrators but have not yet been rigorously evaluated for their efficacy.

Current reforms being considered by MoEC include digital wallets for schools and improved student assessment and teacher training support. These will likely require improvements in school connectivity. What schools, principals, teachers, and MoEC and MoRA do with the connectivity to transform it into improved student learning outcomes is of central importance. There are currently gaps in standards for data privacy and security for education technology products in Indonesia—and a complete lack of impact and cost-effectiveness measurements for Indonesian Ed-Tech products. These products can boost student learning, but that depends on regulatory and support steps by government and greater and more informed use in schools.<sup>95</sup>

#### Reference

Bhardwaj, R., N. Yarrow, and M. Cali. 2020. *EdTech in Indonesia: Ready for Take-off?* Washington, DC: World Bank. https://openknowledge.worldbank.org/handle/10986/33762.

#### **Government laws and regulations**

Financial Note 2021, Book II page 3–91.

MoEC Regulation No. 31/2019 on BOS Kinerja and Afirmasi. https:// siplah.kemdikbud.go.id/file/Permendikbud%20Nomor%20 31%20Tahun%202019.pdf.

MoEC Regulation No. 24/2020 on BOS Kinerja and Afirmasi.



- 2. Kewajiban seseorang yang berkunjung ke kebun binatang adalah ...
- 3. Manakah yang harus dilaksanakan terlebih dahulu, hak atau kewajiban? Jelaskan! Jawab :\_

Jelaskan bentuk pemanfaatan sumber energi air sesuai dengan gambar berikut !



#### Mustan Bahasa Indonesia KD 3.3

- 1. Orang yang dapat memberikan informasi yang benar saat d c. juru kamera d. narasumber
- b. wartawan
- 2. Pertanyaan yang disampaikan kepada narasumber sebaiknya
- a. banyak dan seragam b. mudah dipahami c. berulang-ulang d. sulit dijawab
- 3. Pertanyaan yang tepat untuk diajukan kepada narasumb
- a. Bagaimana cara merawat hewan agar tetap sehat?
- b. Mengapa hewan-hewan ini berada di tangan Bapak?
  c. Kapan Bapak terakhir mengenakan seragam untuk bekerja?
  d. Apakah Bapak memahami jenis-jenis hewan yang hidup di hutan?

presidente presidente presidente porta

Chang Bugis Manassar pada ma Bester sumatra bagian timur keplatan perdagangan Selat M. sai Jalur pelayaran di Selat M. utara wilayah kalimantar. - Serta menjadi wira samudra ya

oleh para pedagang, pelaut dan b 2. Bagaimana cara membuat Peratru Pir

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### **CHAPTER 5**

# Managing the education system to deliver learning


ndonesia's education system transformed in the past two decades. Previously highly centralized, the education system now consists of multiple different levels of authority and responsibility. A series of reforms has created a decentralized structure comprising a complex set of laws and regulations; multiple actors at the central, provincial, district, and school levels; and devolved management.

While the changes have put new emphasis on schooling, particularly by increasing financial resources for education, decentralization has created some major challenges, including low capacity in certain areas as well as weak systems for tracking results and accountability for quality of education service delivery.

To improve education results, overall governance of the education sector should be enhanced, including actions to expand capacity, align regulations, and close regulatory gaps. Upgrading capacity and improving accountability are the highest priority challenges. Indonesia should now put a greater focus of learning outcomes by enhancing the tracking, monitoring, and evaluation of results and empowering and enabling district offices, clusters, and schools to analyze these results and take action to improve them. Doing all this will help Indonesia to improve learning and catch up with regional peers.

## The system's size and geographic spread pose particular challenges

Decentralization laws shifted the management of education to more than 500 districts administering some 340,000 schools and other learning institutions across Indonesia's sprawling tropical archipelago. Some 42,800 are classified as 3T schools (Terdepan, Terluar, Tertinggal, or border, outermost, and underdeveloped). The districts have varied socioeconomic and geographic conditions and institutional capacities that affect their ability to implement education policy and deliver learning to students.

Shifting the responsibility in education service delivery to such heterogeneous districts has prompted concerns about the capacity of districts, both big and small, to run education programs effectively, as well as concerns about the lack of transparency in the use of resources, and the diversion of funds to other district-level projects.

State educational institutions dominate the education system, particularly at primary and junior secondary levels. However, the private sector also plays a significant role, accounting for around 48 percent of all schools, 31 percent of all students, and 38 percent of all teachers (though the

majority of private schools are not truly private as the government pays teacher salaries through civil servant teachers who teach in private schools, contract and honorarium teachers who are paid through local government budget and/or BOS funds). The "private" educational system is dominated by religiously oriented schools that tend to be community-based nonprofits that are in fact "non-public" rather than "private" in a commercial sense, as well as by institutions of higher education. Of the registered early childhood education and development services, 97 percent are "private" and receive state subsidies.

While local governments manage the schools, provincial and central governments have clearly defined roles (see table ES.1). The central government sets nationwide education standards, establishes the national curriculum, and administers learning assessments. It provides funding to schools and local governments and retains the authority to hire and fire civil service teachers. School principals are selected by provincial and district education offices.

#### Role of central government ministries

At least ten ministries and central institutions are involved in managing the education system.

The Ministry of Education and Culture (MoEC) formulates policy in the fields of early childhood education, basic education, secondary education, tertiary education, nonformal education, and cultural management. It implements the policies to improve the quality and welfare of teachers and other educators, as well as education staff. And it implements research and development programs in the fields of early childhood education, basic education, secondary education, tertiary education and nonformal education, and culture. The ministry also develops the national curriculum for secondary education, and nonformal education, early childhood education, and fosters Indonesian language and literature.

Religious schools are supervised by the Ministry of Religious Affairs (MoRA) (see box 1.2 in chapter 1). MoRA shares responsibility with the Ministry of Education and Culture for a single national education system, integrating state, religious, private, and other schools. According to the Education Law, schools under their supervision follow the national curriculum and are subject to the quality assurance system. There are 50,478 religious schools and madrasahs under MoRA, serving 8,211,836 students. These schools and madrasahs hire 629,185 teachers and education personnel. MoRA also supplies teachers of religious subjects to non-MoRA schools. There are 241,020 teachers of religion managed by MoRA and present in MoEC schools (11.2 percent of MoRA's budget for Islamic education is spent on this).

The Ministry of Education and Culture (MoEC) is responsible for higher education and teacher training institutions.

The Ministry of Home Affairs (MoHA) is involved as part of its role of supporting and supervising local governments.

Other important central roles include:

- *Standards*—the Education Standard Agency (Badan Standar Nasional Pendidikan, BSNP) and the National Accreditation Agency (BAN).
- *Finance*—the Ministry of Finance (MoF) and the Ministry of National Development and Planning (BAPPENAS) as part of their role of budget planning and execution.
- Hiring—the Ministry of Administrative and Bureaucratic Reform (KemenPAN-RB) in its role of hiring public service teachers similar to the Civil Service Agency (Badan Kepegawaian Negara— BKN) and Teacher Training Institutes (Lembaga Pendidikan Tenaga Keguruan—LPTKs).

## Responsibilities in Indonesia's decentralized system

As formulated by the education and decentralization laws, education management is a joint responsibility of schools, school committees, districts, provinces, and the central government. Cooperation of central ministries and local governments, needed to ensure good education outcomes, is sometimes limited.

District-level education results depend on geography, culture and language, poverty levels, parental engagement, and other socioeconomic conditions, as well as on the governance and implementation of education service delivery, including effective planning and budgeting and low levels of perceived corruption.

Indonesia's reforms were designed to bring school management closer to the beneficiaries, including by increasing parental and community involvement in education decision-making in schools. However, although most schools formally established the institutions and processes required for school-based management, participation in school management varies significantly, limiting the positive impact on teacher performance and student results (box 5.1).

The parental participation and representation in school management and decision-making are often low. According to a 2012 RAND study, most principals consulted with teachers, district staff, and other school principals before making decisions, but community and parent participation in school decision-making was very limited. Members of school committees, designed to facilitate parent and community involvement in education, rarely participated in school affairs. Commonly, as required by governmental guidelines, the committee chair was simply asked to sign off on decisions already made—which they usually did without asking questions.

Principals have considerable autonomy in a large number of school decisions. School committees are present in all schools, but the selection of their members is not transparent (Al-Samarrai et al. 2014). Besides transparency concerns, a lack of clarity about regulations for school committees has also impeded the full implementation of school-based management. Despite government attempts to clarify their role, gaps remain in the definition of the roles and functions of school committees, parents, and community leaders in the teaching and learning process.

The roles and responsibilities of school committees in planning and monitoring education service delivery are governed by the Education Law, while the roles of local governments are governed by the Decentralization Law, particularly for implementing the MSS for education services.

The MSS describe the minimum quality and quantity of education services that should be delivered by the local education authority and the district-level offices of MoRA, ensuring that in every school and madrasah at least the minimum conditions are provided for quality teaching and learning.

Devolution required appropriate implementation capacity by school committees and district-level authorities as well as clear engagement rules. But capacity is heterogeneous, and rules are not clearly defined. The MSS should guide the decisions of education stakeholders, but MSS compliance has been low, and even lower in smaller districts.

The Decentralization Law establishes that the management of basic education as a responsibility of districts, under the guidance of the MSS established by the central government. The standards are a moving target—there were fourteen district indicators and thirteen school indicators for basic education (MoEC Regulation No. 23/2013), with varying levels of connection to student learning, and as of 2018 this was reduced to three areas of MSS, each with two or three requirements (MoEC Regulation No 32/2018). Despite the changes toward a simpler model, the mechanisms to monitor MSS compliance are weak, with many relying on self-reporting. Overall compliance of schools with the MSS was low, although it appears to be rising

#### **BOX 5.1** Improving the effectiveness of school committees

The capacity of school committees to prepare effective plans to use education resources is limited, and in many cases, the school committees need guidance to use the BOS (Bantuan Operasional Sekolah) and other education funds to achieve the prescribed standards. Recently MoEC, following the experiences of Surabaya and DKI Jakarta to improve budgeting at the school level, has been piloting an electronic budget planning platform (eRKAS). The platform allows schools to budget their school resources to achieve the national education standards, and districts and provinces to monitor, in real time, school decisions.

Source: Paker and Raihani 2011.

As established by the Education Law, school committees are important for the governance of the education sector. Existing evidence demonstrates a positive impact of parental and school committee participation on student learning outcomes in Indonesia (Chen 2011). Most schools have the institutions and processes for school-based management, but the selection of their members was not transparent, and their participation in school decisions was limited. A recent study found school committees were not aware of the standards the school should achieve and, therefore, did not plan actions to achieve them (World Bank 2018b).

as the standards are reduced. The law does not establish sanctions for failure to achieve the MSS, and does not generate strong incentives among service providers to prioritize their achievement.

There are important differences among private and public schools. In public schools, districts have relatively high participation in teacher-related policies and policies related to school admission and textbook selection. Private schools have much more autonomy in developing and implementing such policies.

Several districts have low capacity for the governance of education service delivery, and improvements in governance capacity have been slow, though there are some promising capacity development programs (box 5.2).

#### Multiple funding flows

Indonesia's Constitution, as amended in 2002, protects the financing of the education sector by establishing a minimum threshold of 20 percent of the National Budget (Anggaran Pendapatan dan Belanja Negara, APBN) to be allocated to education. Similar mandates apply to local government budgets.

Indonesia's spending on education as a share of the national budget is one of the largest in the world, but the relatively small portion of GDP that goes into the national budget (3.1 percent in 2018) means that education spending is relatively low.<sup>96</sup>

To implement the functions assigned through the Decentralization Law, local governments rely on the transfers from the national budget as well as locally generated resources. The transfers received by the local governments can be either earmarked or non-earmarked, with different governance structures:

Non-earmarked transfers. The General Allocation Grant (Dana Alokasi Umum, DAU) is the main non-earmarked transfer. It provides resources to local governments without conditions on their use. However, local governments must use the resources to cover expenses such as civil servant salaries, including teacher civil servants, and to implement local policies.

*Earmarked transfers.* The Special Allocation Fund (Dana Alokasi Khusus, DAK) includes several earmarked transfers. Through these transfers, local governments facilitate the implementation of central government programs. The main DAKs are:

BOS transfers. The School Operational Assistance Grant (Bantuan Operasional Sekolah) program supports schools' operational needs. Schools use these transfers based on guidelines issued by the central government. The local governments and school committees are meant to be involved in approving the expenditure plans of schools, but the involvement varies significantly, with the committees often little involved in this planning, resulting in a low level of accountability of the school to the committee.<sup>97</sup>

Teacher professional allowance (TPG). Through this transfer, local governments pay the TPG. Teachers are entitled to the TPG if they are certified and meet certain requirements for teaching loads. The local governments' involvement in the TPG is mostly restricted to paying the TPG.

#### **BOX 5.2** The World Bank's MELAYANI Program

The MELAYANI program, supported by the Australian Government's Department of Foreign Affairs and Trade, attempted to increase local government capacity to address service delivery challenges at the district level. It did this by helping district governments identify meaningful problems, break them down, analyze their parts, and develop and refine solutions. The methodology for problem-solving built on the problem-driven iterative adaptation methodology (PDIA), focused on building team ownership of problems and solutions, empowering local staff to innovate and experiment, using data to understand problems and their causes, and iterating to sustainable solutions. The program emphasized that government staff must do the work to understand the problem and identify and implement solutions, allowing each district to structure teams and work as they wished. MELAYANI provided tools to support the process, which was guided by a trained coach who was supported by a mentor with expertise in the methodology. The program aimed at understanding both key challenges in building problem-solving capacity and cultivating government ownership, as well as the possibility for scaling up this type of support.

MELAYANI worked in three districts—Kubu Raya (West Kalimantan), Bojonegoro (East Java), and Belu (East Nusa Tenggara). The districts each selected one challenge to tackle from a list of three—high levels of stunting, high levels of infant mortality, and low quality of primary education. The program found that local governments can problem solve and undertake basic analysis to inform their decisions, but that they needed strong support to do so. However, when they do undertake analysis on their own, in terms that they understand, they seem more likely to act on the results and think more broadly about opportunities for improvement.

For example, in Belu, the lack of any correlation between test scores and number of certified teachers by school challenged the team's initial belief that low educational performance was being driven by uncertified teachers. Digging deeper into the problem, the team began to recognize the importance of school-level management in student performance-teachers being supervised by headmasters, teachers having access to teaching resources at various levels, and better engagement with parents. With a better understanding of the problem, the district officials began to look across their programming for opportunities to improve, including changing headmaster training, teacher training, and programming and accountability of school monitors (district staff tasked with supporting schools).

Source: McLaughlin 2020 a, b, c.

Transfers for infrastructure or DAK–Fisik. Unlike the BOS or TPG, these transfers are based on requests made by the local government to address infrastructure needs.

Funding runs through a complex set of flows controlled and sourced through different ministries, as discussed in chapter 2 (figure 5.1). Resources to subnational governments include earmarked and non-earmarked transfers, and each district and province decides the share of the non-earmarked transfers allocated to the education sector and how they are spent on education related goods and services.

Most central budget education financing is allocated to 514 districts and 33 provinces across Indonesia. In 2020, 37 percent of the education budget was allocated to central government ministries (MoEC, MoRT, MoRA, and others). Most of the rest of the education budget was transferred to regional governments (54 percent). The remainder goes to the national education fund (LPDP), which received 9 percent of the total education budget in 2020. Of the amount transferred subnationally, 53 percent was sent to districts and provinces in the form of general allocation funds (DAU). Provincial and district governments have control over DAU funds. The revised budget 2020 has followed the new nomenclature and the budget for higher education has been moved to Ministry of Education and Culture. In the revised 2020 budget, the Ministry of Education and Culture is allocated Rp 70 trillion (14 percent of the total education budget) to manage general education from early childhood to higher education (tertiary), while the Ministry of Research and Technology gets a reduced allocation to Rp 1.8 trillion (0.3 percent) (figures 5.2 and 5.3).

Provincial- and district-level governments make their own budgets with available funds, deciding on how much to allocate to education based on



## 80 60 40 20

2014

2015

#### FIGURE 5.2 Distribution of the education budget, 2010–20

Ministry of Research, Technology, and Higher Education Ministry of Religious Affairs Other ministries 💻 BA BUN (Bagian Anggaran Bendahara Umum Negara)

2012

2013

2011

Percentage of total education expenditure

100

0

2010

DAU (General Allocation Fund)

Ministry of Education and Culture

DAK (Special Allocation Fund)

Teacher professional allowance

Special Autonomy Regional incentive fund Revenue sharing fund

Teacher special allowance

2017

BOS (School Operational Assistance)

BOP-PAUD

2016

Management fund for cooperative and

2019

2018

2020

- small and medium-size enterprises National Education Development Fund

Source: National Budget (APBN), various years.

## FIGURE 5.3 Distribution of the education budget, 2020



*Source:* Presidential Regulation No. 72/2020 on Revised State Budget 2020. *Note:* Most preprofessional TVET is included within the MoEC system.

> their priorities. DAU, DAK, and other transfers are complemented by these subnational government's own revenues.

> According to the World Bank's Public Expenditure Review (PER) for education, provinces with lower populations tend to spend more per student than larger ones but are less effective in meeting required standards (World Bank 2020).

> In 2017, the average budgeted resources per student in small provinces was Rp 8.4 million (US\$590), while per-student budgeted resources in larger provinces was Rp 4.5 million (US\$316). While some smaller provinces may have a large proportion of rural schools with small numbers of students and thus higher per-student costs, the difference of 87 percent is large (World Bank 2018b).

> Reflecting the province results, small districts receive larger transfers per student than large districts, but have lower capacity on average to administer them, indicating a serious mismatch and underlining the need to understand better how education resources are channeled to districts, particularly the smaller ones. Improvements in efficiency in using these resources will require capacity development at the district level.

> The PER analysis also underlines the low spending in early childhood education and development (ECED). ECED spending is a negligible share of central government spending, despite being a government priority and recognized as critical for the well-being of children, their future educational achievement, and other key aspects of social and economic development. In 2018, funding for ECED accounted for only 4.5 percent of the Ministry of Education and Culture budget (Rp 1.8 trillion). In 2015, to support the expansion and operation of preschools, the government launched a new DAK

non–Fisik (BOP–PAUD or Bantuan Operasional Penyelenggaraan Pendidikan Anak Usia Dini/ Early Childhood Education Operational Grant). The BOP–PAUD program's coverage is planned to reach about 7.4 million children in 2020 or only 22 percent of children aged 6 and below (World Bank 2020).

The government should strengthen ECED coverage by giving early childhood education sufficient funding within the current 20 percent envelope and improving the governance framework. The recent mandating of MSS for ECED is an important step forward, but if the MSS are not enforced to ensure minimum levels of quality, children will learn less than they should, risk not reaching their full potential, and more likely repeat or fail in later levels of education. MoEC and MoHA should train local government on MSS for ECED and require local government to fulfill them.

#### Increasing efficiency in expenditure

Some important measures with the potential to increase efficiency in the expenditure in the sector were implemented during 2014–19:

*Incentives.* MoEC introduced performance-based BOS or BOS Kinerja in 2019. While the award criteria are complex and thus unlikely to send a clear signal to schools about what to focus on, the awards do consider changes in performance, a major positive development.

Information. MoEC improved the reliability of its information system DAPODIK. Thanks to DAPODIK, MoEC has better information on the number of students, the number of teachers, and the conditions of schools (box 5.3). Different actors in the education sector could use this information to improve the targeting of education expenditures.

*Budgeting.* Several districts and provinces are requesting that schools do their budgets using the electronic planning platform eRKAS. The platform should help schools prioritize the use of their resources in the fulfillment of the MSS and the National Education Standards and improve the education outcomes of students. This initiative, now being evaluated, should be expanded if results are positive.

*Teacher pay.* The World Bank supported MoEC on a KIAT Guru pilot (see box 4.5) to link teacher pay to improve teacher attendance and performance. The original pilot tested pay-for-performance mechanisms for teachers in rural areas to improve teachers' presence, performance, and student learning outcomes. Based on the success of this pilot, the expanded KIAT Guru Phase 2 project is now working to identify the most effective institutional arrangement for the government to scale up the most effective intervention proven in the original pilot—social accountability mechanism and pay-for-performance mechanism based on teacher presence. KIAT Guru Phase 2 targets an additional 207 primary schools in very disadvantaged villages and 50 secondary schools in developed villages/urban locations.

## Challenges of governance, structure, decentralization, and accountability

#### Central government data requests from provinces and districts do not correlate with student learning

The central government focuses on multiple sets of indicators, sending mixed signals to provinces and districts. One set of signals comes from MOHA's Minimum Service Standards (MSS), which are few in number but regularly revised. All of the standards should be achieved, and while some subnational governments exceed them, many others fail to meet them year after year, with little to no accountability for this lack of achievement (World Bank 2018a). There are no established mechanisms at any level that reward the achievement of these standards or sanction failure.

A separate, very large set of signals comes from the National Education Standards (NES), a subjective set of 595 questions for school principals, with no external verification of the reported information.<sup>98</sup> In total, it asks 2,055 questions of principals, teachers, supervisors, students, and school committees, obliging schools to spend a considerable amount of time filling out and compiling all this information each year.

While both the MSS and NES signals correlate with each other, neither closely correlates with student learning, one of the central functions of an education system. This means that the information requested by the central government from schools and subnational governments, which is used for decision-making, is not necessarily linked to improvements in system performance. Since the data are not checked by direct observation, some are likely inaccurate as well. Further, no data are publicly available on MSS achievement, suggesting a lack of interest or follow-up on this basic quality-of-service delivery metric.

There are efforts to more effectively use MSS. In the past two years, MoHA's MSS policy has been continuously improved, with greater attention

## BOX 5.3 DAPODIK—A platform with big potential

In 2014, MoEC launched DAPODIK, a web-based platform that collects information on teachers, students, and school characteristics, allowing for direct monitoring of the achievement of some of the minimum service standards (MSS). DAPO-DIK is accessible to schools, districts, provinces, and the central government. MoEC is evaluating adding variables to this information system and designing strategies to improve its accuracy to support the management of education. DAPODIK's potential to support improvements in education sector management is enormous, as when the platform enabled MoEC to identify smaller schools that should be merged with larger ones to improve efficiency.

being directed toward the MSS fulfillment in district and provincial government planning, budgeting, and reporting. In the Sistem Informasi Perencanaan Daerah (SIPD) run by MoHA, the MSS tagging system enables MoHA to assess whether subnational governments' planning and budgeting documents—such as RKPD and RPJMD—have included MSS-fulfillment indicators or not. Among other requirements, this will be the basis of Mo-HA's approval for the submitted documents. MSS fulfillment is also used as one of the indicators for MoF and BAPPENAS agreeing on DAK and DID transfers to the districts and provinces. So, MSS in used as one of the tools to assess whether additional fiscal transfers to a region can be made or not. BAPPENAS is also planning to implement an MSS monitoring agenda, which will be used to further revise the MSS policy.

## Schools, districts, and provinces control most of the inputs that determine learning

MoEC's authority, according to the Education Law of 2003, is focused on hiring civil servant teachers, establishing curricula and competency standards, and administering student learning assessments. This means that basic inputs for student learning -such as the availability and quality of textbooks and other teaching and learning materials, as well as in-service teacher training and monitoring and supporting teachers, principals, and schools—fall largely under the authority of districts and provinces. To improve student learning, subnational spending and initiatives need to be aligned with regulations and support for learning at the center. The current lack of alignment between student achievement and the MSS and NES monitoring systems needs to change in order for student learning to increase at scale (box 5.4).

#### BOX 5.4 How does Indonesia measure school level success?

Indonesia has defined eight national standards to measure schools: (1) graduate competence, (2) education content, (3) learning process, (4) education assessment, (5) teachers and education personnel, (6) facilities and infrastructure, (7) management, and (8) funding. Each standard has associated criteria differentiated by school level. MoEC assigned the BSNP (National Education Standards Agency) to assist it to develop, monitor, and report on the achievement of the National Education Standards. MoHA coordinates the development of the standards and supervises their implementation. The measurement tools for assessing performance of schools on the standards are numerous (almost 600 items), subjective, and self-reported without direct verification. That makes them much less useful in

Source: MSS monitoring system.

measuring school success and learning achievement than simpler, more objective measurement tools designed to be verified by external observers.

The Minimum Service Standards (MSS) are derived from the national education standards. The NES are long-term goals, and are supported by the MSS as shorter-term standards meant as steppingstones to achieving the national standards. The MSS are the mirror image of the overly complex NES measurement tool; the MSS are too simple, and have been further reduced (MoEC 2018), making them less useful as a guide to schools for what to focus on to improve quality. And neither the MSS nor the NES assessment tools focus on learning achievement indicators, let alone correlate them with other indicators of quality.

## Integrating different types of education

One of the aims of the Education Law was to establish a single national system for education that includes state, religious, private, and semiprivate schools. The 2003 law integrated all schools under MoEC or MoRA into a single national system, but the administrative authority and the funding channels remained separate. The creation of the national education system aimed to facilitate the movement of students between the education systems regulated by the two ministries.

Private schools and madrasahs have expanded in recent years and tend to face multiple challenges related to performance, efficiency, and accountability. The number of private schools/madrasahs has increased, particularly at senior secondary level, and a large proportion are small—much smaller on average than public schools.

Available information shows that student performance in private schools is lower on average than in public schools, levels of accreditation are lower, and small schools face challenges in the use of resources (for example, teacher planning and management). Public funding of private schools is substantial, particularly through BOS grants and other subsidies, but the monitoring and assessment of private schools (against the MSS)—and therefore their accountability to MoEC which supports them and to the parents who pay for them —are weak (as for public schools). Indeed, public subsidies may create incentives to establish new private schools. In addition, private schools usually charge fees, some quite high depending on the school's reputation, so that parent household expenditure is generally higher for attendance in private schools (World Bank 2014).

Public schools, including madrasahs, are financed from district, provincial, and national sources. However, parents still pay a large portion of household income on uniforms, books, school equipment, school committees, extracurricular activities, and fees.

Private schools, often run by nonprofit and underregulated foundations, provide 12 percent of education services in grades 1–12. While technically not decentralized under MoRA's centralized system, the private schools are very loosely controlled.

#### Ensuring that minimum standards are met

Indonesia is trying to improve compliance with its MSS for education and has continued to disseminate its national education standards. But early childhood and upper secondary education, expanding in recent years, did not have the MSS to guide their service delivery. Published in 2018, the MSS became effective in January 2019. Also in 2018, the National Education Standards Agency (BSNP) launched the National Standards for Secondary Education. MoHA's MSS policy has become more sensitive to MSS fulfillment in provincial and district government's planning, budgeting, and reporting. The Sistem Informasi Perencanaan Daerah (SIPD) now includes MSS tagging that enables MOHA to assess whether subnational governments planning and budgeting documents such as RKPD and RPJMD have included MSS-fulfillment indicators.

#### **School accreditation**

School accreditation has also accelerated in recent years. Both public and private schools must renew their accreditation every five years, and new schools need accreditation. For 2018, the target was 54,000 schools and madrasahs, both new and those needing reaccreditation. The government is also trying to equalize access to accreditation, especially in remote areas.

MoEC strengthened its role in quality assurance through Peraturan Pemerintah No. 19/2015 on national education standards, which required that the governance and management of schools be accompanied by more adequate quality assurance to increase transparency and accountability in the education system.<sup>99</sup> Data on the eight components of the national education standard were mostly collected by teachers and principals, with varying degrees of support from supervisors. The data enable schools to prepare their school improvement plan.

However, although the indicators of quality assurance are related to student results, the relationship is tenuous. Available data for the school accreditation process show that schools accredited A tend to have higher scores in the National Exam than schools accredited B or C (figure 5.4). Schools accredited B tend to have higher scores that schools accredited C, but that difference is small. The econometric analysis shows that school accreditation explains only 3 percent of the variance in school results-that is, some schools accredited C have results higher than the mean result of schools accredited A (MoEC DAPODIK 2017 and Puspendik 2017). This can mean that even the "officially" best schools (accredited as A) are of the same quality as schools with a lesser accreditation -or that the accreditation process itself does not discriminate well between schools of different quality on student scores.

As a result of the various administration problems of the National Examination, different graduation criteria have been adopted. School examinations have now replaced the role of the national test to become a graduation criterion. In a recent MoEC regulation, students can graduate if they have completed the curriculum, earned a qualification of "good" in attitude, and passed the school examination. The school defines the minimum score to pass the school examination. These

## FIGURE 5.4 School accreditation and national examination scores, grade 9



Source: DAPODIK 2017 and Junior Secondary UN score data (Puspendik) for 2017.

Note: Accreditation of schools is based on a scale of A (highest) to C (lowest).

heterogeneous criteria applied by schools could allow low-performing students to graduate and continue to the next level without mastering the required skills and competency.

MoEC has also strengthened its capacity to gather data on the education system through the DAPODIK platform (see box 5.3), which allows data collection at the source (schools) and its use by education authorities at the district, province, and national levels. Better data have allowed important adjustments: for example, the reported number of teachers between school years 2014 and 2017 fell by about 10 percent because of DAP-ODIK's capacity to reduce duplicate reporting.

## Managing and financing schools and madrasahs to deliver learning

Most countries whose students perform well on international student achievement tests give their local authorities and schools substantial autonomy over adapting and implementing education content and allocating and managing resources. Greater school autonomy does not necessarily widen disparities in school performance if governments provide a framework for poorer performing schools to receive support to help them improve.

The argument in favor of decentralized decisionmaking in schools is that it fosters demand at the local level by giving voice and power to local stakeholders, decentralization can increase client



satisfaction and improve education outcomes as long as accountability measures balance the risk of elite capture. School autonomy and accountability can address some of the key challenges in education service delivery, but their potential is contingent. If schools are given some autonomy over the use of their inputs, they can be held accountable for using them in an efficient manner. Decentralizing power to the school can also improve service delivery to families whose children are excluded from education—by giving them a say in how local schools operate and by giving schools an incentive to ensure that they deliver effective services to these families and penalizing those that fail to do so.

However, the international evidence is mixed, and the preconditions for effective school-based management may not exist, considerably limiting its impacts in many contexts.

In Indonesia, the shift toward school-based management has been incomplete and has not resulted in measurable improvements in student learning or financial efficiency. While the government has devolved decision-making to the district and school levels, civil service teacher hiring is still primarily controlled centrally, and there are limits on how some types of school financing, such as BOS, are spent. Nonetheless, school principals have an official degree of autonomy over school budgeting and spending, within limits set by MoEC, in deciding how to use the BOS funds. The limited capacity of principals and school committees, along with cultural and other constraints, has likely reduced the potential impact of schoolbased management, especially in low income and rural areas. Student learning and equity could be further improved if schools were to focus resources and expertise on identifying and helping the lowest performing students and teachers—and if districts and provinces were to support the lowest performing schools to increase their capacity to implement school-based management. Effective accountability and incentives to achieve results is a prerequisite for school-based management and autonomy (World Bank 2018d).

#### **Preconditions for school-based management**

In many education systems, decentralizing decision-making to schools is regarded as an important part of effective school management, which in turn is necessary for improving student learning outcomes. Shifting school decision-making from central authorities to schools is motivated by aims ranging from improving the efficiency of decision-making to improving the responsiveness of public services to local demand, and to reducing political and social tension (Demas and Arcia 2015; Bardhan 2002). Decentralizing school decisionmaking to improve school management and ultimately the quality of education a school provides has been studied extensively (Barrera-Osorio et al. 2009; Bruns, Filmer, and Patrinos 2011). Two critical areas that emerge in this literature are budget management and personnel management, including hiring and firing teachers.

Studies have examined the impact of reforms to allow schools to manage part or all of their finances, especially in the context of school grants, and how these reforms have affected education outcomes, including test scores (Bloom et al. 2014; Blimpo and Evans 2011; Pradhan et al. 2011). Studies have also examined the link between personnel management and education outcomes (Hahn, Wang, and Yang 2014; Di Gropello 2006; Gillies, Crouch, and Florez 2011). But the impact of these interventions on educational outcomes, especially test scores, is mixed. The success of decentralization reforms relies on a wide range of factors. So, decentralization of school decision-making and improved school management are characterized as necessary but not sufficient conditions for improving learning outcomes (Arcia, Macdonald, and Patrinos 2014).

Effective school-based management balances school autonomy with accountability and accessibility of information on learning outcomes. To improve school management requires strengthening the overall system rather than just certain parts. For example, providing schools with autonomy over budgeting may not produce a better learning environment unless accountability and the use of learning assessments are also strengthened simultaneously (Arcia, Macdonald, and Patrinos 2014). This has not happened in Indonesia, where policy has moved away from accountability, as with abolishing the grade 6 exam in 2021.

Another key element of accountability is involving school committees in decision-making. Involving parents and local stakeholders can make services more responsive to the needs of the local community. There is international evidence on the positive impact on various educational outcomes of improving participation of local stakeholders, especially parents and community members, in school management. The outcomes studied include access to schooling (Di Gropello 2006; Chaudhury, and Parajuli 2010) as well as reducing dropouts and improving attendance and test scores (Jimenez and Sawada 2003; Skoufias and Shapiro 2006; Gertler, Patrinos, and Rubio-Codina 2006; Benveniste and Marshall 2004; Blimpo and Evans 2011; Jesse et al. 2010). Effectively harnessing participation to improve educational outcomes is challenging, and many factors can hinder the effectiveness of participation in school management -capture by local elites, poverty in the local community, which leads to a low priority being given to participation in school management, traditional subservience of parents to school officials, and the low capacity of stakeholders to make good decisions (Gunnarsson et al. 2009; Contreras and Contreras 2015; Shibuya 2014; Di Gropello 2006; Lugaz and De Grauwe 2010). Even if mechanisms hold schools accountable both to local stakeholders and government authorities, accessible assessment results are also needed for stakeholders and decision-makers to make decisions conducive to better learning in schools.

#### **BOS funding of schools**

The BOS program, set up in 2005, disburses millions of dollars in block grants to schools across the country on a per student basis (box 5.5). The program demonstrates Indonesia's commitment to provide quality education to students of all incomes. BOS funds have enabled children from poor families to go to early childhood education (under the name of BOP) and primary and junior secondary school. Community involvement and transparency are key elements contributing to the success of the BOS program. School committees comprising parents and local community members are tasked with planning and monitoring the use of BOS grant funds. Annual plans and quarterly expenditure reports are to be publicly displayed on school notice boards, with the aim of increasing transparency and deterring corruption and misuse of funds.

The per student value varies across education levels linked to the higher costs of facilities and materials required at higher levels. In 2019, the transfers were Rp 600,000 (about US\$42) for students in early childhood education, Rp 800,000 (about US\$57) for students in primary education, Rp 1 million (about US\$71) for students in lower secondary education, Rp 1.4 million (about US\$100) for students in general upper secondary education, and Rp 1.6 million (about US\$114) for students in vocational upper secondary education.

As mentioned, DAK funds are earmarked for funding the BOS grants, teacher professional allowances (TPG), and some school infrastructure. Total transfers to local government increased by 25 percent in real terms between 2011 and 2017, while the National Education Budget increased only by 16 percent. The largest increase in funding was through the DAK (84 percent), while the DAU increased by 11 percent.

These central transfers are complemented by the subnational governments' own revenues. Despite improvements in data collection by the Ministry of Finance, significant information gaps remain on the use of resources by local governments.

#### Increasing resources for schools

Despite the fiscal effort, Indonesia's education spending still remains lower than in other middleincome countries. For example, expenditure on education as a percentage of GDP was 3.3 percent in 2014, falling to 3.0 percent in 2018, compared with Malaysia (6.1 percent) and Vietnam (6.3 percent). Furthermore, Indonesia is among the countries with the lowest expenditure in purchasing power parity (PPP) terms among the PISA 2015 participating countries. While science scores on international tests increased between 2012 and 2015, learning levels were still 19 points below those predicted by Indonesia's income (World Bank 2018d). The results of the 2018 round of PISA fell further.

Having fewer resources affects the quality of education service delivery. For example, among the participants in PISA tests, Indonesian school principals were more likely to indicate a shortage of textbooks, school supplies, and infrastructure in their schools than their counterparts in countries that have higher education spending per student —Brazil, Mexico, and Thailand. But this is not necessarily only an issue of resources. Since school leaders have some autonomy on how to spend their allocations, it seems that principals choose hiring more teachers over other learning inputs, such as textbooks.

The 2018 study by the World Bank, Growing Smarter, found that high-performing systems in East Asia have mechanisms to guarantee effective spending, concentrate public spending on basic education, and channel resources to schools and districts failing behind (World Bank 2018a). High-performing countries also have accurate and timely information systems that allow them to allocate resources where they are needed, helping them to invest education resources efficiently. Vietnam's School Quality Audit Program is an example of an effective information system. This system collects information on school quality across Vietnam and allows the country to adequately prioritize educational resources and improve the efficient use of resources (World Bank 2018a). Chile has an innovative mechanism to distribute resources where they are needed most and thus to maximize efficiency of resources. It distributes resources on an estimated unit cost per student basis and provides

additional resources to schools and districts with greater needs (as with higher percentages of disadvantaged students). This mechanism is contingent on improvement plans, and to continue receiving the additional resources, schools and districts are evaluated on their progress in achieving specific targets (Murnane et al. 2017).

Schools have limited autonomy, however, in how they spend BOS and other resources, including those provided by the district. Some schools have the capacity to spend these resources well and could benefit from greater autonomy, while others lack the capacity and interest/incentive to do so. The challenge is to decide how much autonomy to give to schools in a decentralized system with school and district capacity and interest varying widely.

But information is lacking on the amount of resources allocated by local governments to education from their own revenues. About 23 percent of students in basic education live in districts in small provinces, which receive about 41 percent of the total national resources allocated to the subnational level (including provincial and district budget allocations) (World Bank 2018b.).

Improvements by the central government to more efficiently use BOS grants and TPG allowances for teachers should be matched by complementary actions by districts, particularly in districts with the largest amount of resources for education. The effectiveness and efficiency of district education spending need to be monitored, especially in smaller districts where managerial capacity tends to be lower-to ensure that the largest share of the education budget is used more efficiently. This will require hiring more qualified, motivated staff in district education offices (a challenge, given the politics of district governments), along with investments in capacity building and information sharing with districts that have higher levels of learning with students of similar backgrounds.

As Indonesia moves ahead with education reforms, supplementary mechanisms should link the use of BOS resources to improvements in student learning conditions-for example, rewarding schools with higher improvements. There has been some recent positive movement in this direction with BOS Kinerja. BOS policies could also more explicitly link funding allocations to quality assurance, such as achieving accreditation or meeting national standards. The government could enhance the poverty focus of BOS, already a priority, by adjusting for inflation and tweaking funding to provide additional funds for poor students. It could also limit the BOS grants allocated to private schools that charge high tuition fees. In addition, BOS has the opportunity to do more to empower

#### **BOX 5.5** Electronic performance-based school planning and budgeting systems

The education system under the Ministry of Education and Culture (MoEC) is highly decentralized. Most school costs under MoEC are covered by fiscal transfers from the center to provincial and district levels. One such type of transfer is school operational grants, known as Bantuan Operasional Sekolah (BOS) or school operational assistance. BOS funds are managed directly by schools, which have been delegated the autonomy to receive, plan and budget, spend, administer, and report their use. Experience has shown that many schools lack the capacity to use BOS funds effectively and efficiently to deliver better learning outcomes for students.

Under the BOS program, each school is required to conduct a School Self-Evaluation (SSE) against the NES and use the results to develop its spending plans accordingly. Every school has also been advised to develop a planning and budgeting system (Rencana Kegiatan dan Anggaran Sekolah or RKAS) to allocate and manage BOS funds. The concept of performance-based planning and budgeting was introduced to ensure that schools use the RKAS to improve their performance. Using the approach, each school can measure the progress of their achievement against the National Education Standards every year. A World Bank review of BOS in 2016 revealed that only some schools develop an RKAS annually, while others simply copy the previous year's data. Further, where they are developed, the RKAS is typically not based on the school's SSE results, which means that it is not systematically aligned with the eight NESs.

To help schools plan and allocate resources, the World Bank, in partnership with the Australian government, supported MoEC to develop an application called the Rencana Kegiatan dan Anggaran Sekolah Berbasis Elektronik (e-RKAS or electronic school plan). This tool enables schools to input and manage the RKAS electronically, which is more efficient, better structured, and in line with a performance-based planning approach. A first version of the e-RKAS was created by the Education Office in Surabaya, East Java, to simplify the approval process of school plans and budgets. A more advanced version was then developed by the World Bank team and piloted in schools in DKI Jakarta province in 2015–16. In 2017, the World Bank and MoEC piloted the eRKAS program in select schools in Central Java and Bali provinces and Gorontalo, Sidenreng Rappang, and Mojokerto city districts.

In 2018, MoEC tried to replicate the World Bank eRKAS system using a system that requires internet connectivity, but this proved challenging for schools without internet. Consequently, Gunung Kidul district in Yogyakarta province developed a partly online RKAS tool called the MoEC Aplikasi RKAS (ARKAS). The application is an offline tool that can downloaded from the Education Office website and used by public and private schools in areas with low or no internet connectivity. Since 2015, other electronic school planning and budgeting applications have been developed by district or province education offices. In March 2019, MoHA introduced a fully online application called Sistem Informasi Pengelolaan BOS (SIPBOS or BOS management information system), which focuses on planning, monitoring, and expenditure reporting of school BOS funds. MoHA considers this system to be a refinement of ARKAS as it has more complete electronic management and administrative systems for BOS, going from the school to the district and province levels. In the future the Government can take several steps to strengthen these systems and expand their use. These include eliminating duplication between the systems, expanding training to all schools, providing supporting facilities such as cloud storage, and developing clear regulations.

Source: World Bank forthcoming.

parents. Revitalizing parents' awareness, empowerment, and responsibility for schools through BOS could link to higher emphases on student achievement and greater demand for accountability (World Bank 2014).

The Ministry of Religious Affairs is also shifting to a more efficient and transparent system. In 2018, the Australian Government and World Bank also supported the ministry to pilot a Madrasah Electronic Planning and Budgeting System (e-RKAM) in 60 madrasahs in Jombang district and Yogyakarta province.<sup>100</sup> Having completed pilots successfully, MoRA has adopted the World Bank–financed program and will implement it nationally to 50,000 madrasahs through the Realizing Education's Promise project (running from 2020 to 2024).

#### Limited autonomy, capacity, and accountability are constraining outcomes for schools

Designing school-based management reforms and interventions that aim to improve educational outcomes is complicated and challenging. First, many factors affect student attendance and learning beyond school management. School management alone may not influence outcomes if other larger bottlenecks exist, such as teacher training and the suitability of pedagogic materials and curriculum. Second, engaging parent and community participation is also subject to cultural and social complexities that may hinder accountability, including capture by local elites. Testing the effectiveness of a reform aimed at further decentralization is important to understand how effective a reform is and how it needs to improve. One approach is to pilot a reform following a rigorous evaluation design, such as a randomized controlled trial, and then measure not just educational outcomes but also parent and community member participation. Such studies would provide policymakers with the information needed to update and fine-tune reforms before scaling up.

The World Bank uses a rating tool, known as the Systems Approach for Better Education Results (SABER), to identify strengths and weaknesses of education systems. The Bank adapted this to assess the effectiveness of policies and practices related to school-based management. In Indonesia, the tool was applied to a nonrandom selection of 116 public schools (World Bank unpublished).

The assessment found that the fundamental accountability and assessment practices to support further decentralization of school decision-making were being put in place (figure 5.5). The rating tool revealed greater scope for school autonomy in budget preparation. But the systems approach would suggest that accountability practicesespecially for personnel management (such as who gets hired on local contracts), as well as public release of learning assessment results-should be strengthened simultaneously. In other words, a reform providing schools with further autonomy would need to include stronger accountability and the dissemination of learning results in order to promote system improvement.

The strongest practices related to accountability of budget preparation to the school committee and the use and publication of learning assessment results. The participation of the school committee in preparing the school budget was reported by a majority of the principals at schools sampled to be either established or advanced. This was also true for using standardized assessments to make pedagogical, operational, and personnel adjustments and for publishing student assessment results.

The weakest practices are related to the autonomy of budget preparation and personnel management, the accountability of personnel management to school committees, and the socialization of learning assessment results. Of sampled schools, 64 percent were rated "latent" in their reported legal authority over management of the operational budget. This is a cause for concern since, under the 2003 law, the mandate for planning and executing school budgets lies with the school, within the constraints of MoEC standards



Source: World Bank 2018d.

such as how BOS funds can be used (World Bank unpublished).

While the principal is at the center of the devolved system of school-based management, their current skills do not always enable them to perform their management and leadership roles well. In high-performing systems, principals are instructional leaders who take a positive role in improving the quality of teaching and learning at their schools, as reflected in improved student outcomes. Many principals in Indonesia do not have adequate training or knowledge of school management and leadership and so are unable to lead their teachers in ways that will achieve better student outcomes.

#### **School autonomy**

Both indicators of school autonomy studied have scope for increased autonomy: a majority of schools do not have legal authority over management of their non-salary budget, and, for a majority of schools, staffing decisions about civil service staff are made by regional or local authorities, with central government authorities having final say. Schools also do not have the knowledge and capacity to execute budget management autonomously and require continual training in developing school self-analyses and improvement plans, budgeting BOS and BOSDA funds, performancebased budgeting (PBB), tracking progress using DAPODIK, and using electronic annual work plans to integrate PBB with monitoring, evaluating, and reporting results. Increases in school autonomy would be accompanied by corresponding increases in accountability.

Autonomy over, and local accountability of, personnel management decisions are rated poorly in most schools: 84 percent are rated emerging in autonomy, and 77 percent are rated latent in accountability. Given that the schools generally are able only to hire contract teachers, with civil service teachers hired from the center, this is not surprising. The teachers hired as civil service teachers have a permanent position in the government and are unlikely to consider themselves accountable to the school community. Most schools were rated emerging or advanced in disseminating learning outcome results, but a large proportion (39 percent) were rated as latent (World Bank unpublished).

Interviews with schools reveal a high degree of variation in their knowledge of standards and their capacity to carry out self-assessments, to set targets in the school improvement plan, to strategically plan and execute performance-based budgeting to achieve these targets, and to prioritize activities to meet the given standards (World Bank unpublished).

#### School accountability

Under the education and decentralization laws, education management is a joint responsibility of schools, school committees, districts, and the central government. An analysis by the World Bank documented the current lack of an accountability system to guide district-level decisions. A National Education Quality Initiative that strengthens the assessment system and improves its credibility could fill this gap. This initiative should also include financial data and the use of education resources at all levels to promote effectiveness and efficiency in the sector.

#### Recommendation 8: Strengthen accountability mechanisms through better data tracking and verification

- Keep better track of education trends by improving MoEC and MoRA databases.
- Hold stakeholders and decision-makers accountable for improving education quality by establishing an Education Quality Index.
- Use data from the index to direct assistance to lagging districts and schools.

#### What can be changed or improved?

- Hold stakeholders and decision-makers accountable for improving education quality by establishing an Education Quality Index for districts and provinces on student learning, education expenditures, and system performance. Information from the Quality Index can be made public at the presidential level, and the information should flow to provinces, districts, working groups, schools, and classrooms so that principals and teachers know in what areas their students need help—and this help can then be provided.
- Integrate and improve MoEC and MoRA databases to provide accurate and up-to-date data (and trends revealed by the data) to decision-makers across ministries and levels of government.
- Ensure that the databases clearly identify inequities and disparities in the system—such as between provinces and districts, urban/rural/ remote schools and large/small schools, and high-performing and low-performing schools so that action can be taken to reduce any existing disparities. Require district and province education officials to pass a customized online training course on the analysis of their own education data with a focus on identifying disparities.

 Design and establish verification mechanisms for data on school and ECED registration, infrastructure, staffing, and student access (enrollment) and learning outcomes for MoEC and MoRA.

## What are the options to implement this change?

#### For the Education Quality Index

- MoHA can work with MoEC and MoF to develop the technical guidelines for the subnational spending classification regulation (Government Regulation No. 12/2019) and plan to support subnational governments to implement the detailed education expenditure reporting guidelines to help answer key questions about education spending, including student unit costs by level of education, and spending on teacher training by teacher type (PNS vs. contract teachers) and level (primary vs. secondary).
- MoHA, MoEC, and MoRA can work together to develop a simple quality index, drawing from improved and simplified versions of MSSs and NESs as well as measures of student learning. MoHA can use the index to identify districts and provinces not meeting the minimum performance targets and in need of more support. MoEC can provide assistance to improve learning and school functioning to these identified districts and provinces, since MoHA is empowered to instruct subnational governments what to do, while MoEC is qualified to suggest to them what they should do to improve their performance. MoRA can do both functions within their system.
- The Office of the President could announce the results of each education quality index ranking each year to publicize the results in the national political discussion, signaling the importance of student learning and system performance by praising those that improved their results and calling on lagging regions to improve.
- Databases:
  - MoHA can mandate independent data verification as well as financial sanctions for misreporting.
  - MoEC can support districts and provinces to improve data collection and reporting both up the system to the ministry and down the system to the schools.

## Recommendation 9: Support existing institutions to improve service delivery

 Indonesia can build on reforms to improve learning quality.

- It can work through the institutions now in place to enhance accountability and promote results-based change.
- And it can link financial transfers more explicitly to quality.

#### What can be changed or improved?

- Support school improvement and enhance student outcomes using the building blocks already in place—principal and teacher working groups, school committees, education quality assurance institutes (LPMPs) and training colleges (LPTK), and the Dinas and their supervisors. All these building blocks need further capacity development, and the resulting aligned "architecture" of support can be directly involved in improving teacher performance.
- Work district by district to make staff more capable and accountable for the work they do, including clarifying the role of every Dinas unit in enhancing learning outcomes and requiring Dinas staff to remain in their positions following capacity-strengthening activities.
- Incentivize and hold accountable districts through performance-based budgeting and capacity building and support.
- Encourage all education stakeholders to participate in education service delivery.

#### What are the options to implement this change?

- MoHA, MoEC, and MoRA can work together to reform the current system, which does not incentivize districts or hold them accountable for producing good student learning outcomes. The system can move toward performancebased budgeting for stronger performers, and toward needs-based capacity strengthening and support for weaker performers.
- MoEC can improve the planned performancebased BOS program (BOS Kinerja) by simplifying the scoring mechanism to fewer and more objective observable criteria.

#### References

- ACDP (Analytical and Capacity Development Partnership). 2014. Teacher Absenteeism in Indonesia. Policy Brief. November 2014. Jakarta: Education Sector Analytical and Capacity Development Partnership. http://repositori .kemdikbud.go.id/8560/1/Policy-Paper-ACDP -Teacher-Absenteeism-English-FINAL.pdf.
- Al-Samarrai, S., M. C. Chang, A. B. Ragatz, S. Shaeffer, R. Stevenson, and J. J. de Ree. 2014. *Teacher Reform in Indonesia: The Role of Politics and Evidence in Policy Making*. Directions in Development: Human Development. Washington, DC: World Bank.



- Arcia, G., K. Macdonald, and H. A. Patrinos. 2014. "School Autonomy and Accountability in Thailand: Does the Gap between Policy Intent and Implementation Matter?" *Prospects* 45 (4).
- Bardhan, P. 2002. "Decentralization of Governance and Development." *Journal of Economic Perspectives* 16 (4): 185–205.
- Barrera-Osorio, F., T. Fasih, H. A. Patrinos, and L. Santibanez. 2009. Decentralized Decision-Making in Schools: The Theory and Evidence on School-Based Management. Directions in Development: Human Development. Washington, DC: World Bank.
- Benveniste, L., and J. Marshall. 2004. "School Grants and Student Performance: Evidence from the EQIP Project in Cambodia." Unpublished Working Paper, World Bank, Washington, DC.
- Blimpo, M. P., and D. K. Evans. 2011. "School-Based Management and Educational Outcomes: Lessons from a Randomized Field Experiment." Unpublished working paper, World Bank, Washington, DC. https://site resources.worldbank.org/EDUCATION/Resources/ Blimpo-Evans\_WSD-2012-01-12.pdf.
- Bloom, N., R. Lemos, R. Sadun, D. Scur, and J. Van Reenen. 2014. "JEEA-FBBVA Lecture 2013: The New Empirical Economics of Management." *Journal of the European Economic Association* 12 (4): 835–76.
- Bruns, B., D. Filmer, and H. A. Patrinos 2011. Making Schools Work: New Evidence on Accountability Reforms. Washington, DC: World Bank.
- Chaudhury, N., and D. Parajuli. 2010. "Giving It Back: Evaluating the Impact of Devolution of School Management to Communities in Nepal." Unpublished Working Paper, World Bank, Washington, DC. http://pubdocs.worldbank .org/en/107351529965141527/Nepal-Evaluation -Report.pdf.
- Chen, D. 2011. "School-Based Management, School Decision-Making, and Education Outcomes in Indonesia Primary Schools." Policy Research Working Paper 5809, World Bank, Washington, DC.
- Cislowski, H. 2018. "Review of the System for Assessment Student Learning." Mimeo.
- Contreras, N., and G. J. Contreras. 2015. Raising the Bar for Hispanic Serving Institutions: An Analysis of College Completion and Success Rates." *Journal of Hispanic Higher Education* 14 (2): 151–170.
- Demas, A., and G. J. Arcia. 2015. "What Matters Most for School Autonomy and Accountability: A Framework Paper." Systems Approach for Better Education Results (SABER) Working Paper 9, World Bank, Washington, DC.
- Di Gropello, E. 2006. "A Comparative Analysis of Schoolbased Management in Central America." Working Paper 72, World Bank, Washington, DC.
- Gertler, P., H. A. Patrinos, and M. Rubio-Codina. 2006. "Empowering Parents to Improve Education. Evidence from Rural Mexico." Policy Research Working Paper 3935, World Bank, Washington, DC.

- Gillies, J., L. Crouch, and A. Florez. 2011. *Strategic Review* of the EDUCO Program. Washington, DC: USAID.
- Gunnarsson, V., P. F. Orazem, M. A. Sánchez, and A. Verdisco. 2009. "Does Local School Control Raise Student Outcomes? Evidence on the Roles of School Autonomy and Parental Participation." *Economic Development and Cultural Change* 58 (1): 25–52.
- Hahn, Y., L. C. Wang, and H. Yang. 2014. Do greater school autonomy and accountability make a difference? Evidence from the random assignment of students into private and public high schools in Seoul. https://ssrn.com/abstract=2352765
- Hahn, Y., L.C. Wang, and H. Yang. 2018. "Does Greater School Autonomy Make a Difference? Evidence from a Randomized Natural Experiment in South Korea" *Journal of Public Economics*, 161 May: 15–30. https://ssrn. com/abstract=2352765 or http://dx.doi.org/10.2139/ ssrn.2352765.
- Jesse et al. 2010. Jesse, C., G. Lassibille, J. P. Tan, T. V. Nguyen 2010. "Managing for Results in Primary Education in Madagascar: Evaluating the Impact of Selected Workflow Interventions." *The World Bank Economic Review* 24: 303–329.
- Jimenez, E., and Y. Sawada. 2003. "Does Community Management Help Keep Kids in Schools? Evidence Using Panel Data from El Salvador's EDUCO Program." Discussion Paper, Center for International Research on the Japanese Economy, University of Tokyo.
- Lugaz, C., and A. De Grauwe. 2010. *Schooling and Decentralization: Patterns and Policy Implications in Francophone West Africa*. Paris: UNESCO.
- McLaughlin, K. 2020a. "Keeping it Simple: Supporting Government to Use Evidence." World Bank Operational Note 1, World Bank, Washington, DC. http:// documents1.worldbank.org/curated/en/30817159 3065198532/pdf/Keeping-it-Simple-Supporting -Government-to-Use-Evidence-to-Understand -Problems.pdf.
- McLaughlin, K. 2020b. "Digging Deeper: Iterating Understanding of a Problem." World Bank Operational Note 2, World Bank, Washington, DC. http://documents1. worldbank.org/curated/en/975591593066109246/ pdf/Digging-Deeper-Iterating-Understanding-of-a -Problem.pdf.
- McLaughlin, K. 2020c. "Iterating Implementation for Impact: Starting Small and Building Up." World Bank Operational Note 3, World Bank Washington, DC. http://documents1.worldbank.org/curated/en/ 999451593066878371/pdf/Iterating-Implementation-for -Impact-Starting-Small-and-Building-Up.pdf.
- MoEC (Ministry of Education and Culture). 2019. DAPODIK (Data Pokok Pendidikan Dasar dan Menengah).
- Murnane, R. J., M. R. Waldman, J. B. Willett, M. S. Bos, and E. Vegas. 2017. "The Consequences of Educational Voucher Reform in Chile." Working Paper 23550, National Bureau of Economic Research, Cambridge, MA.

- Parker, L., and R. Raihani. 2011. "Democratizing Indonesia through Education? Community Participation in Islamic Schooling." *Educational Management Administration & Leadership* 39 (6): 712–732.
- Pradhan, M., D. Suryadarma, A. Beatty, and A. Wong. 2011. "Improving Educational Quality Through Enhancing Community Participation: Results From a Randomized Field Experiment in Indonesia." *American Journal* of Applied Economics 6 (2).
- Shibuya, Kazuro. 2014. Case Study of School Autonomy and Accountability in Burkina Faso. Washington, DC: The World Bank.
- Skoufias, E., and J. Shapiro. 2006. "Evaluating the Impact of Mexico's Quality Schools Program: The Pitfalls of Using Non experimental Data." Policy Research Working Paper 4036, World Bank, Washington, DC.
- World Bank. 2014. Assessing the Role of the School Operational Grant Program (BOS) in Improving Education Outcomes in Indonesia. Jakarta: World Bank.
- ——. 2018a. Growing Smarter: Learning and Equitable Development in East Asia and Pacific. Washington, DC: World Bank. doi:10.1596/978–1-4648–1261–3.
- —\_\_\_\_. 2018b. Indonesia Economic Quarterly: Learning More, Growing Faster. June. Jakarta: World Bank. https://openknowledge.worldbank.org/ handle/10986/29921.
- ———. 2018c. Local Solutions to Poverty Annual Progress Report 2017. Jakarta: World Bank.
- ——. 2018d. School-based Management Policies in Indonesia and Their Implementation at the School Level. Washington, DC: World Bank.

World Bank. https://openknowledge.worldbank.org/ handle/10986/33954 License: CC BY-NC 3.0 IGO. ——. Forthcoming. *Leading Schools Digitally: Evaluation* 

- of the Electronic School Planning and Budgeting System (e-RKAS) in Indonesia. Washington, DC: World Bank.
- ——. Unpublished. "School-based management policies in Indonesia and their implementation at the school level—2018." Washington, DC: World Bank.

#### **Government laws and regulations**

- Government Regulation No. 19/2015 on Non-tax State Revenues that Apply to MoRA. https://peraturan.bpk. go.id/Home/Details/5583.
- Government Regulation No. 12/2019 on Subnational Spending Classification. https://peraturan.bpk.go.id/ Home/Details/103888/pp-no-12-tahun-2019.
- Law No. 20/2003 on the National Education System. http:// simkeu.kemdikbud.go.id/index.php/peraturan1/8-uu -undang-undang/12-uu-no-20-tahun-2003-tentang -sistem-pendidikan-nasional.
- Law No. 23/2014 on Regional Autonomy. https://peraturan. bpk.go.id/Home/Details/38685/uu-no-23-tahun-2014.
- MoEC Regulation No. 23/2013 on Minimum Service Standards for Basic Education in District/City. http://simB puh.kemenag.go.id/regulasi/permendikbud\_23\_13\_ lampiran01.pdf.
- MoEC Regulation No. 32/2018 on Technical Standards for Minimum Education Service. https://jdih.kemdikbud. go.id/arsip/PERMENDIKBUD%20NOMOR%2032%20 TAHUN%202018.pdf.
- Presidential Regulation no 78/2019 on education budget details for 2020. https://peraturan.bpk.go.id/Home/ Details/135245/perpres-no-78-tahun-2019.

### Technical and vocational education and training

Successful skill development systems produce students with the fundamentals and skills needed by the labor market. Having the right foundation requires a schooling system that maximizes learning in the classroom, on not only the cognitive dimension but also the socioemotional (chapter 4). Skills for the labor market are usually provided by the technical and vocational education and training (TVET) institutions and the non-TVET university sector (chapter 6).

#### Skills

Ensuring that the skills produced by education and training are aligned with labor market needs requires not only TVET institutions with adequate resources, but also constant coordination between the education and training providers (the supply) with the potential employers (the demand) to ensure the content is relevant. Effective coordination requires an adequate institutional design with the participation of the different stakeholders in skill development systems.

Industry 4.0 is rapidly changing the labor market and challenging the definition of a successful skill development system. It takes advantage of cyber-physical systems and requires workers equipped with specific 21st century skills, which include the traditional foundational skills but also high levels of resilience, problem-solving, and collaboration. Skill development systems in the context of Industry 4.0 will have to react quickly to the changing needs of the labor market and the rapid pace of technological change. Some occupations are experiencing dramatic changes in their required skills, and new occupations are appearing at an unprecedented speed while other occupations are disappearing. The system will therefore have to provide opportunities to upskill and reskill segments of the workforce displaced by Industry 4.0.

## Adjusting the skill development system for Industry 4.0

Indonesia has favorable conditions for economic growth, but slow progress in human capital development has limited the country in achieving its growth potential. The low quality of the labor force—with low cognitive and socioemotional skills—translates into low labor productivity and overall low competitiveness. Indonesia's labor productivity is onefourth of Malaysia's, and the estimated contribution of education to long-term economic growth is 1.8 percentage points per year lower than Vietnam's (World Bank 2018). For example, in the tourism sector, Indonesia is a leader in its attractiveness (4 out of 46) but among the last in the quality of its human resources (45 of 46) (WTTC 2015).

The government has shown a strong commitment to improve the quality of its labor force to promote economic



Source: Christoph Roser.

growth. Improving the quality of the labor force will require several actions to improve education outcomes that will provide young Indonesians with the right fundamentals and provide opportunities for lifelong learning. These will, in turn, allow the adult population to receive training to upskill and reskill in line with labor market changes and to have their new skills recognized through their experience in the labor force.

Indonesia's skill development system is defined by a series of regulations that determine some of the key institutions and relationships among them. These are meant to ensure that the number of graduates of TVET institutions and the content of their learning programs satisfy the needs of the labor market, but also that the skills acquired, either in TVET institutions or in the workforce, are properly certified and that TVET institutions have the right accreditation to deliver those skills.

#### The Indonesian skill development system

The National System of Skill Training (Sistem Pelatihan Kerja Nasional, SISLATKERNAS) links components of education and training with the goal of achieving a skilled labor force that can contribute to economic growth. Laws and regulations have been established to accommodate cross-sectoral demand on competency-based professional development of the workforce.<sup>101</sup> The main components of SISLATKERNAS are:

- The Indonesian National Competency Standards (SKKNI) and the Indonesian Qualification Framework (IQF) or Kerangka Kerja Nasional Indonesia (KKNI). Through these components, SISLATKERNAS recognizes the importance of clearly defining competency frameworks for each occupation and their packaging into the qualification framework.
- The National Skill Education and Training based on SKKNI and KKNI. Through this component, SISLATKER-NAS recognizes that the competency standards should guide the provision of training.
- *The National Competency Certification.* Through this component, SISLATKERNAS emphasizes that certification has to be based on the identified competency standards.

## Creating a relevant TVET system: Competency frameworks and a qualification framework

An effective skill development system requires clear definitions of what workers are expected to do in different occupations and the different skills they must possess to implement the tasks those occupations require. In some cases, direct links between demand and supply ensure alignment —such as direct links between tourism vocational high schools in Bali with cruise lines that guarantee alignment and high labor-market placement. In most cases however, direct links are difficult to establish, and standardization of the skills is needed.

#### **Education and training institutions**

TVET institutions, as established by SISLATKERNAS, design and implement competency-based programs (Pelaksanaan Pelatihan Berbasis Kompetensi, PBK). Their programs have to align with the SKKNIs according to different levels of the KKNI. TVET institutions can be either formal or nonformal. Besides foundational levels in the education system, formal institutions in TVET, public and private, comprise vocational secondary schools and polytechnics, both subject to MoEC regulations. The nonformal institutions are training providers of courses that usually are short-term, under the regulations of MoEC, the Ministry of Manpower (MoM), and several line ministries.

Indonesia has nearly 40,000 TVET institutions: public and private, formal and nonformal (table S2.1).

TVET institutions offer different types of programs. The most popular are ICT and business management. In all, Indonesia has 71,000 programs.

## Certification of education and training institutions

SKKNIs and KKNI should guide the competency certification process. In addition to being used as a reference in the

## TABLE S2.1Number of TVET institutions, by July2020

Leading ministry	TVET institutions	Number
MoEC	SMKs	14,301
	Community training/education institutions (including LKPs or nonformal courses)	18,911
	Polytechnics	304
	Community colleges	36
	Subtotal	33,552
MoM	BLKs	305
	LPK (nonformal course institutions)	5,020
	Community BLKs (a joint program with	
	MoRA)	1,113
	Subtotal	6,438
Total		39,990

Sources: Data from MoM Pusdatin (2020) and MoEC (2019).

*Note:* The MoEC subtotal does not include 2,501 institutes (Institut) and 238 school of higher learning (Sekolah Tinggi), many of which have vocational study programs or faculties.

#### **SPOTLIGHT 2**

design and implementation of education and training programs, SKKNIs and KKNI are to be used as references in the design and implementation of work competency certification. They should be used to formulate a competency certification scheme (Skema Sertifikasi) and assessment tools (Materi Uji Kompetensi, MUK). A competency certification scheme contains, among other things, the packaging of unit competencies (SKKNI) and assessment requirements. The assessment tool and materials will be prepared by an assessor team according to SKKNI.

#### Main challenges in the TVET system

Different countries have different structures for their skill development systems to respond to their specific needs. For example, Australia has an Industry Skills Council which oversees the overall process of skill development and use, while Canada has provincial councils with a similar mandate. But in Indonesia, despite ongoing change, the architecture of the system is not well defined with areas of duplication and important gaps. Thus, each line ministry takes the lead to organize its skill development systems without formal guidelines for the participation of some key players—such as those from the private sector—generating challenges for proper functioning. The current system also presents high levels of duplication. For nonformal training, two systems coexist, leading to duplication that wastes resources and weakens the quality assurance systems as training institutions migrate across systems if they face challenges in the quality assurance/accreditation process (figure S2.2).

#### The system has little relevant information to guide prioritysetting for training areas

Despite isolated efforts by different ministries, there is little information on the occupations in high demand, so the TVET system cannot focus its resources on them—a sharp contrast with other countries (box S2.1). The Ministry of Manpower, the Coordinating Ministry of Economic Affairs, and the Ministry of Education and Culture are producing a Critical Occupation List to provide information on the sectors in excess demand or supply for setting priorities on TVET investment decisions. The list is produced by merging information from the national statistics office and consultations with the private sector, but is not always comprehensive or current.

FIGURE S2.2 Two major skills training streams in Indonesia



Source: World Bank, Indonesia Skills Development Project.

#### **BOX S2.1** Labor market observatories

Labor market observatories (LMOs) aggregate, analyze, and curate information on labor market trends to help potential and current students, job seekers, training providers, employers, and policymakers make informed decisions about skills development. They analyze and monitor trends in labor supply and demand to identify mismatches. To work properly, they should have data on labor markets from diverse sources, collaborate with other agencies, have a sound statistical infrastructure in place, be responsive to the demands of their users, and provide information tailored to their needs. Internationally recognized LMOs include:

 Mi Futuro (Chile). This LMO collects information from education institutions on graduate outcomes and pairs it with data from tax and pension administrations to make information on the incomes of graduates of professional and technical programs publicly available.

#### Despite the central importance of aligning supply and demand, developing competency frameworks has been limited

Only about 20 percent of the required competency frameworks for 970 business areas have been adopted, with the lack of prioritization by line ministries one of the main factors (World Bank 2020). Some of the missing areas are high priorities. The development of standards was mostly partial and not based on a comprehensive competency needs map in the relevant sectors and fields.

Of the stipulated standards, only 38.4 percent were packaged in competency qualification packages (KKNI/Occupational). The rest were packaged in competency cluster packages. Of the competency qualification packages, only 68 percent were used/implemented as a reference in developing competency-based (PBK) programs. Their use/implementation as a reference in the development of a competency certification scheme was a bit more advanced, at 73.7 percent.

TVET institutions—including SMKs, polytechnics, and LPKs and LKPs—face multiple challenges in implementing SKKNIs, including curriculum definition, teacher capacity, in-frastructure gaps, and a lack of resources (World Bank 2020).

#### Nonformal training is patchy

Only 5 percent of the labor force reports having received on-the-job training (SAKERNAS 2019). Workers who did receive training are mostly employed in the financial sector and the public service. Firms in Indonesia offer fewer

- Sistema Nacional de Información de Educación Superior and Observatorio Laboral para la Educación (Colombia). These provide information to help families evaluate the quality and potential benefits of various courses of study. The former is designed as a comprehensive information system on higher education and the latter provides information on graduate characteristics and labor market outcomes (income and employability).
- Labor Market Information Portal (Australia). This contains up-to-date labor market data at national, state, regional, and local levels to help people understand their local labor market.
- Direction de l'animation de la recherche, des études et des statistiques (France): This analyzes labor market data and produces studies and statistics on areas of work, employment, and vocational training.

training opportunities to their employees than firms in other East Asian countries and globally (figure S2.3). Small and medium firms offer very little training, while large firms offer less than others in the region. The lack of a critical mass of firms in Indonesia demanding quality training contributes to an underdeveloped supply of relevant training, as does wage compression, which reduces worker demand for quality training.

There are not many indicators on the quality of TVET institutions, but existing indicators on SMKs signal quality problems. For example, SMK graduates register the highest unemployment rate among graduates from different streams of formal education (figure S2.4).

Some mechanisms support supply, but they need to be evaluated and expanded to guarantee impact. For example, MoF issued a tax levy through Regulation No. 128/2019 on internships and work training. This regulation provides the basis for tax deductions of up to 200 percent for companies supporting workforce development programs beyond their own staff.

## Recommendation 10: Expand access to and improve the quality and relevance of TVET

- Improve the availability and accuracy of information on labor market needs and guide the overall skills development system with strong participation of the private sector.
- Expand TVET to meet rising demand.
- Balance expansion with robust accountability mechanisms.



## FIGURE S2.3 Share of firms who report offering formal training opportunities for their employees

Source: World Bank, Enterprise Surveys 2009, https://www.enterprisesurveys.org/en/data.



### FIGURE S2.4 Unemployment rates by education type and level

Source: 2019 data, Badan Pusat Statistik, Survei Angkatan Kerja Nasional (SAKERNAS).

#### What can be changed or improved?

• Establish a governance structure to guide the overall skills development system with strong participation of the private sector. This structure should set priorities in terms of labor market needs and future expectations,

follow international good practice, and adapt itself toward labor market changes linked to Industry 4.0.

 Establish a reliable, timely, and easily accessible labor market information system through the strengthening of MoM's Manpower Information System (Sistem Informasi Ketenagakerjaan, SISNAKER) to identify labor market needs for use by training institutions, students, employers and job-seekers. The labor market information system could build on the existing job-matching platform (Ayokitakerja) to help guide existing workers toward growing or higher paying sectors based on skills required and training possibilities by occupation.

- Revitalize the development and use of the competency frameworks, ensuring that they are used as a dynamic mechanism for private sector participation in this process for all occupation levels of the IQF. Competency frameworks can benefit from those already defined in the context of ASEAN.
- Ensure that TVET institutions have the right infrastructure and teachers to deliver the competency frameworks. Mechanisms to share resources among institutions should be explored to maximize their use.
- Recognize skills by established and reliable certification and accreditation systems. This means improving the protocol and instruments used in the accreditation process, having the results audited by an external party, balancing expansion of TVET with robust accountability mechanisms, and measuring accountability through accreditation and performance-based funding.
- Evaluate current mechanisms to support the expansion of TVET, such as the current tax levy, to ensure adequate use of public resources.

#### What are the options to implement this change?

- The Government of Indonesia can establish a Skills Development Council with strong participation of the private sector to oversee overall skill development. The council would comprise the coordinating ministries such as BAPPENAS and the ministries traditionally in charge of skill provision, including MoEC, the Ministry of Manpower (MoM), and MoRA—as well as line ministries with training facilities, such as the Ministry of Industry, the Ministry of Transportation, and the Ministry of Tourism.
- Expand the features and use of SISNAKER for an improved labor market information system to monitor the

evolution of labor demand and supply, and also to provide information to job-seekers—including SMK and polytechnics graduates—on occupations.

- MoEC can expand the revitalization of the SMK program subject to an evaluation of current results. MoEC can continue consolidating the supply of SMK, merging ones with limited capacity with those with higher capacity. MoEC can continue and evaluate programs to revitalize polytechnics, as MoM can do for BLKs. MoEC can strengthen the capacity of the Technology Transfer Office.
- MoF can establish direct financing to accreditation agencies of universities and TVET institutions to assure the independence and capacity to undertake accreditation.
- MoEC can increase the internationalization of the higher education system by allowing greater freedom for foreign higher education institutions to provide services to Indonesian students across the country.

#### References

SAKERNAS (Survei Angkatan Kerja Nasional). Badan Pusat Statistik. MoM (Ministry of Manpower ). 2020. Pusdatin (retrieved August 21, 2020). https://pusdatin.kemkes.go.id/.

- MoEC. 2019. (Ministry of Education and Culture). *Higher Education Statistics Academic Year of 2019/2020.* Jakarta: MoEC.
- World Bank. 2018. Indonesia Economic Quarterly: Learning More, Growing Faster. June. Jakarta: World Bank. https://openknowledge.worldbank.org/handle/10986/29921.
- ——. 2020. Doing Business 2020. Comparing Business Regulations in 190 Economies. https://openknowledge.worldbank.org/ bitstream/handle/10986/32436/9781464814402.pdf.
- WTTC (World Travel and Tourism Council). 2015. *Indonesia: How does Travel & Tourism compare to other sectors?* https://www. wttc.org/-/media/files/reports/benchmark-reports/country -reports-2015/indonesia--benchmarking-report-2015.pdf.

#### **Government laws and regulations**

MoF Regulation No. 128/2019 on Tax Levy on Internships and Work Training. https://jdih.kemenkeu.go.id/fullText/2019/128~PMK.010 ~2019Per.pdf.

## **CHAPTER 6**

# Tertiary education—high expectations, average performance



he Government of Indonesia has high ambitions for tertiary education, essential to boost the nation's human capital and economic growth through increased productivity and competitiveness. The tertiary education sector is expected to contribute both highly trained people—engineers, scientists, technicians, doctors, teachers, and so on—and relevant research to drive innovation throughout the economy.

The Ministry of Education and Culture's (MoEC) new policies aim at encouraging universities to introduce innovative curricular and pedagogical practices, strengthening quality assurance at the national and institutional levels, modernizing governance and management through higher levels of autonomy and accountability, and adopting a sustainable financing strategy. Movement in this direction was initiated in January 2020, when the ministry announced the Freedom to Learn-Freedom Campus policy, which gives accredited higher education institutions (both public and private) the right to open a new program without prior approval from the ministry. The new policy also gives students the right to take courses outside of their formal program of study; spells out measures to strengthen the national accreditation system, opening the door for international accreditation; and proposes to grant much more autonomy to higher education institutions. The underlying philosophy of the new administration appears to be that tertiary education institutions will achieve better results if they have more freedom and flexibility to design

their strategies and manage their resources, and that competition can, in the long term, contribute to higher performance of the tertiary education system as a whole.

Today, the performance of the Indonesian tertiary education system is significantly below expectations. The supply of places is insufficient to meet the demand for tertiary education, and there are serious disparities in access and achievement. The quality and relevance of existing programs leave much to be desired, and the system's contribution in transferring relevant research and technology to the broader economy is low.

#### Increasing access and improving equity

Indonesia has more than doubled the gross enrollment rate in tertiary education over the last eighteen years, which is an important accomplishment. The gross enrollment rate in tertiary has increased from 14.9 in 2000 to 36.3 in 2018 (UNESCO 2000–18). Despite this rapid enrollment growth in the past two decades, Indonesia's tertiary education coverage lags behind many of its regional neighbors (figure 6.1). Furthermore, the country has not done enough to address disparities in access and success for underrepresented groups, especially low-income students, and to reduce the rural-urban gap, as well as the geographical gap between the western and eastern parts of the country. More than 70 percent of those enrolled belong to the richest income quintile of Indonesia's population, while students from the poorest three



#### TABLE 6.1 Distribution of tertiary education enrollment and institutions, 2012 and 2018

	2012				2012–18		
Type of institution	Institutions	Enrollment	Percent	Institutions	Enrollment	Percent	(percent)
Public universities	51	1,258,945	20.4	62	1,651,352	21.4	31.2
Open University	1	399,751	6.5	1	588,824	7.6	47.3
Public institutes/schools	8	76,806	1.2	12	94,579	1.2	23.1
Public community colleges			_	4	887	0.0	—
Public polytechnics	36	76,925	1.2	43	156,461	2.0	103.4
Public Islamic universities	47	220,758	3.6	65	502,879	6.5	127.8
Total public	143	2,033,185	33.0	187	2,994,982	38.8	47.3
Private universities	424	2,124,758	34.4	500	2,701,392	35.0	27.1
Private colleges	51	178,936	2.9	79	189,397	2.5	5.8
Schools of higher learning	1,383	1,265,532	20.5	1,449	1,251,226	16.2	-1.1
Private academies	1,099	355,694	5.8	973	226,235	2.9	-36.4
Private community colleges			—	14	950	0.0	
Private polytechnics	136	84,796	1.4	156	89,821	1.2	5.9
Private Islamic universities	375	127,307	2.1	714	255,416	3.3	100.6
Total private	3,468	4,137,023	67.0	3,885	4,714,437	61.2	14.0
Total	3,611	6,170,208	100.0	4,072	7,709,419	100.0	24.9

Source: PDDIKTI (Pangkalan Data Pendidikan Tinggi), Database of Higher Education, Ministry of Education and Culture.

Note: Public universities include the Open University for institutions and student enrollment. In this table, the author separates the Open University and public universities.

quintiles make up only 10 percent of university graduates.

Rapidly growing demand for tertiary education

Table 6.1 presents the distribution of enrollment and institutions in the Indonesian tertiary education system and their evolution over the past six years.

The data reveal several features of the Indonesian tertiary education system. First, there is a substantial degree of institutional differentiation overall, since the universities—public and private together-enroll only 57.2 percent of the total student population, with other types of institutions enrolling the rest. Within the public subsector, universities account for almost 70 percent of total enrollment, which indicates that there is room for more institutional differentiation through the development of public non-university institutions such as polytechnics and community colleges. Second, the main thrust of expansion in the past six years has been to increase enrollment in public institutions, contrary to what happened in previous times when the government relied on the private sector to drive enrollment growth. But the new strategy may not be financially sustainable unless the universities are allowed to charge substantial tuition fees, which is not the case today and would only increase many of the existing disparities. Third, the Open University,

despite its popularity for providing distance education, still accounts for a very small share of overall enrollment, less than 10 percent.

For equity, the 2012 Higher Education Law stipulates the obligation for the government to put in place concrete equity objectives and measures to reach disadvantaged populations. The overall target is to reach 20 percent of students from the lowest income quintile-very far from the current 11 percent (BPS 2018)<sup>102</sup>—with appropriate financial aid and non-monetary equity promotion measures. Low-income students are eligible for Directorate General for Higher Education (DGHE) grants and needs-based scholarships through the Bidikmisi scholarship program, which encourages high school students to pursue tertiary studies. In 2017, 339,348 students received Bidikmisi scholarships to complete their undergraduate studies. Some of the scholarships are earmarked for affirmative action on behalf of specific target groups, including students with disabilities, economically disadvantaged groups, and students from remote areas in eastern Indonesia. Additional financial aid is available from private, philanthropic, and regional government schemes.

To a large extent, the low proportion of lowincome students—2 percent for the lowest and 5 percent for the second lowest income quintiles —reflects a pipeline problem. Many students from disadvantaged groups do not make it through secondary school. And children from the poorest families that do graduate from secondary education, tend to enroll in higher-cost, lower-quality tertiary education institutions. The reason is that they are often less well prepared academically, may lack information about careers and academic programs, and so find it more difficult to find a place in the best public universities.

#### Meeting demand equitably

A succession of tertiary education reforms since the mid-1990s has led to a threefold increase in enrollment, making today's generation the most educated in the country's history. As reflected in the government's ambitious plans, demand for tertiary education is expected to continue growing strongly, given the rising incomes, the needs of the labor market for more skilled workers, and the increasing number of young people completing secondary education (table 6.2).

It is unlikely, however, that Indonesia's tertiary education system, with its present institutional configuration and financing model, could easily accommodate the rapidly growing number of high school graduates eager to continue their studies. And a substantial part of the unmet demand comes from outside Java and Bali. Absorbing the rapid growth of enrollment can best be achieved by increasing institutional differentiation, rather than following the traditional mode of building and funding new public universities with budgetary resources. From a public resource perspective, spreading enrollment growth across a variety of tertiary education institutions and delivery modalities—public and private, non-university, and online-rather than simply expanding the public university subsector-can be an effective strategy for achieving greater enrollment targets in a financially sustainable manner.

Indonesia already has a long tradition of private involvement in tertiary education. But as seen earlier, after several decades of increasing enrollment in private institutions, the trend in recent years has been to grow enrollment mainly by expanding the public subsector. If the government wants to promote further growth of private tertiary education as a part of its tertiary education development strategy, it should first make sure that private providers do not face regulatory hurdles that constrain establishing and operating good quality private tertiary education institutions (box 6.1). In the medium term, Indonesia could consider offering financial incentives to private sector institutions that meet high quality standards. This should include giving these institutions access to subsidized

## TABLE 6.2 Planned increase in the gross enrollment rate (percent) Image: content of the gross enrollment

2000	2015	2018	2015–19 plan	2020–24 plan	2045 target
14.9	29.2	34.6	36.7	43	60

Source: MoRTHE and BPS.

student loans for their students. At present, MoRA provides almost no financial support for private tertiary education institutions under its jurisdiction, losing an opportunity to encourage competition between public and private institutions.

The second line of action could be to strengthen and expand the non-university public subsector. Today, universities represent 68.6 percent of enrollment within the public subsector. In addition to protecting the resource base of the public universities by absorbing a significant proportion of secondary school graduates, non-university tertiary institutions can contribute by offering training opportunities that respond flexibly to labor market demand. The government could set up a network of community colleges in addition to strengthening the existing technical colleges and colleges of education. Community colleges already occupy an important place within differentiated systems, as in Canada, Republic of Korea, and the United States.

The third pillar of the government's expansion strategy could be to invest substantially in the expansion of the Indonesian Open University, which could offer good-quality learning opportunities to larger numbers of young Indonesians-following Thailand, whose two Open Universities absorb close to 40 percent of the overall tertiary student population. To ensure that the Open University operates as a leading-edge online institution, its leadership team could learn from the experiences and business models of other successful online institutions, such as Western Governors University in the United States, which pioneered a competency-based curriculum in the late 1990s. The current instructional delivery mode of the Indonesia Open University is distance learning where students conduct self-learning using printed materials. Face-to-face tutorials are available to support the self-learning. The university can improve the effectiveness of its instructional delivery mode by increasing opportunities for students to communicate and consult with tutors, mentors, professor, and experts through online platforms to discuss learning difficulties as well as other academic and administrative matters.

To ensure that expanding enrollment fully benefits students from underrepresented groups, MoEC

## **BOX 6.1** Removing regulatory barriers for private tertiary education institutions

To assess whether a country has favorable legislation and regulations for the private higher education sector, it is useful to consider five aspects:

- Barriers to entry. Are there any rules precluding the entry of private providers, including foreign ones? Until very recently, foreign private providers were not authorized in Indonesia.
- Institutional autonomy. Does the regulatory body allow full institutional autonomy (organizational, academic, financial, and HR) for private tertiary education institutions? In Indonesia, private institutions have full institutional autonomy.
- Eligibility for government subsidies. Can private institutions benefit from the incentives or subsidies available to public institutions, such as tax exemptions, land leases, and salaries of academics? In Indonesia, eligible private tertiary receive BOS (university operational assistance) to conduct research and community activities.
- Eligibility of private institution students for state scholarships or loans. Can students from private institutions benefit from government financial aid available to students who share the same socioeconomic characteristics but

Source: Authors' elaboration.

should step up its equity promotion efforts to translate into actual results the principles and targets contained in the 2012 Higher Education Law. This would involve combining financial support in the form of scholarships and loans to eliminate monetary barriers. It would also involve non-monetary measures, such as outreach and guidance to promising senior secondary school students, especially from rural and remote regions and poor families, and affirmative action to encourage enrollment and special support-mentoring, counselling, and accessible facilities—for students with disabilities to ensure their retention and completion in the system. Such efforts could help students from disadvantaged groups overcome psychological, motivational, and academic challenges.

#### Improving quality and relevance

Although many tertiary institutions have made progress in the quality of their programs in the past decade, the overall quality of tertiary education who are enrolled in public institutions? In Indonesia, private university students became eligible to receive Bidikmsi scholarship in 2013 (Bidikmisi began in 2010). Loans tend to be provided by commercial banks and private foundations, and students at private institutions are eligible, though reliance on loans by both private and public higher education students tends to be limited because the requirements are rarely met by students.

 Transparent quality assurance. Does the country have clear evaluation and accreditation criteria and procedures that apply equally to all tertiary education institutions? In Indonesia, BAN-PT, a semi-autonomous regulatory body, is responsible for establishing and implementing accreditation with the same criteria for all institutions.

Good practices for licensing tertiary education institutions include:

- Clear criteria and timelines applied consistently and diligently by the regulatory bodies.
- A small number of requirements in the licensing phase as opposed to the accreditation stage, which should legitimately combine a strong self-evaluation report and a thorough external evaluation by independent peers.

remains low in relation to global quality standards and the country's own aspirations. So far, only about a third of all tertiary education institutions and only 10 percent of the study programs have been accredited.

Of more than 4,000 Indonesian universities, only five appear in the international rankings— Gadjah Mada University ranked 254 in the world according to the 2020 QS World University rankings, the University of Indonesia ranked 305, the Institute of Technology Bandung ranked 313, Airlangga University in the 521–530 range, and the Bogor Agricultural Institute in the 531–540 range. All of the ranked universities are public institutions, illustrating the fact that quality challenges are most severe in the large private sector.

As discussed in Spotlight 2, without a comprehensive labor market observatory and regular tracer studies by tertiary education institutions, it is difficult to have objective data on the relevance of existing programs. However, the Ministry of Labor surveys of employers suggest a serious mismatch between the profile of graduates and the needs of firms, as revealed by the latest available results (2018). Employers report that graduates are lacking industrial training and key competencies such as communication (including poor command of English), creativity, critical thinking, and problem-solving skills. Diploma graduates are performing even less well than university graduates in this sense. Many graduates do not find jobs in their area of professional competence. For example, 30.9 percent of workers with an academic background in agriculture are working in the trade, finance, and real estate sectors (SAKERNAS 2018).

#### Improving quality

The government of Indonesia has done much to improve the quality of tertiary education institutions. First, it set up four independent accreditation agencies (called LAM—Lembaga Akreditasi Mandiri) to complement the work of the national accreditation body (BAN-PT): LAM for Natural Sciences and Formal Sciences; LAM for Economics, Management, Business, and Accounting; LAM for Education; and the Indonesia Accreditation Board for Engineering Education (IABEE). Second, it established the Indonesia Cyber Education Institute, which was attached to MoRTHE before being transferred to the Ministry of Education and Culture (MoEC), with the mission to monitor and regulate online education. Third, it defined 24 National Standards of Higher Education (SN Dikti), grouped into three sets of standards for each of the main three functions of universities: teaching, research, and community engagement. Fourth, it has provided funding to the country's flagship universities to specifically help weaker institutions prop up their quality standards. The Ministry is in the process of organizing an award system to recognize good performers among tertiary education institutions.

But many tertiary institutions continue to face serious issues that undermine the quality and relevance of their programs. They lack qualified academics—only 16 percent of lecturers nationally hold a PhD, half the percentage found, for example, in Malaysian universities. Their instructors mostly rely on traditional pedagogical methods with heavy emphasis on lectures and rote learning. Very few institutions cultivate close linkages with employers, resulting in an outdated curriculum. Even though some institutions organize at least one internship for their students during the course of their studies, only about 5 percent of tertiary institutions conduct regular tracer studies to find out what happens to their graduates. A quality culture is still lacking at both national and institutional levels. Many institutions that go through the accreditation process do it more often for the sake of formally meeting the standards rather than out of a genuine commitment to quality enhancement. And a large number of private institutions are too small to deliver education services effectively and efficiently—their average size was fewer than 400 students in 2018.

A 2008 World Bank survey showed that twothirds of employers complained about finding qualified graduates for professional and management positions. More than 50 percent of the employed population in 2015 was underqualified for their position. A 2018 McKinsey study estimated that demand for semiskilled and skilled workers would rise to 113 million by 2030, stressing the danger of skill shortages and mismatches for future economic growth. The Boston Consulting Group (2018) reported that due to low standards and low enrollment in tertiary education, Indonesian companies will struggle to fill almost half their entry-level positions by 2020.

BAN–PT does not assess institutions for accreditation directly, but instead relies on partnerships with the tertiary education institutions themselves as well as an online self-assessment system. BAN–PT's own capacity has not been externally assessed. So far, only 42.6 percent of the institutions operating under the authority of MoEC and 81.5 percent of study programs have been accredited. The situation is even worse for the Islamic institutions under MoRA. A mere 8.6 percent of institutions and 20 percent of study programs in Islamic higher education institutions have been accredited. It was estimated that in 2018, close to



2,000 institutions operated in Indonesia without accreditation. Assuming that no new institutions are created, this implies that it would take more than seven years at the present rate of accreditation, to accredit the entire tertiary education system, that they are all ready to be accredited, and that they all pass the accreditation process. Internal quality assurance systems are still in their infancy stage. Institutions that have them tend to view them as a compliance mechanism rather than a quality enhancement tool.

Indonesian universities are also characterized by low internationalization. Even though government policies support internationalization in theory—notably through seminars and workshops on internationalization and help for establishing international partnerships—tertiary education institutions in general lack formal structures promoting internationalization. Staff and student mobility is impeded due to an inadequate legal framework, language barriers, lack of qualified human resources, financial constraints, and fear of foreign influence, among others. Unlike what happens in Malaysia or Vietnam, foreign institutions, until very recently, were prohibited from operating or opening a branch campus in Indonesia.

Indonesia could implement the following policies to enhance the quality and relevance of its tertiary education system: talent development for academic staff, innovations in curriculum and pedagogy, internationalization, close universityindustry linkages, and strengthened quality assurance systems (table 6.3).

Quality assurance systems. Considering the large number of low-quality institutions in Indonesia today, especially in the private sector, the government should carefully monitor and possibly close down substandard institutions and programs, as it did in 2018 when 237 institutions under MoEC were merged with other higher institutions. In parallel, the government should consolidate existing quality assurance mechanisms and align their delivery capacity with the pace of creating new institutions and programs. Accreditation should focus more on processes and outcomes than on inputs. The same standards should be applied throughout the country but adapted to the specific nature and mission of the various types of institutions (for example, research-intensive universities, teaching universities, teacher training colleges, technical colleges, and online programs). To build the capacity of the institutions in the poorer regions and provinces, MoEC should support capacity-building partnerships between stronger institutions in the more developed

provinces and less experienced institutions elsewhere, rather than lowering accreditation standards for the latter.

In addition to strengthening the official quality assurance mechanisms, MoEC could offer incentives for establishing or consolidating internal quality assurance units in all tertiary education institutions to develop a genuine and effective quality assurance culture. Strengthening quality assurance should be accompanied by systemwide capacity-building that would touch all subsectors and levels of the tertiary education system: national, institutional, program, and administrative. Capacity-building can be through training, interning, twinning, shadowing, mentoring, workshops, learning by doing, and continually reflecting on current practices. The target audience should include policymakers, external quality assurance providers, institutional leaders, faculty members, and middle and low-level management and administrative staff.

#### Increasing relevance

Links with industry. Developing close links with industry is one of the most effective ways of increasing the relevance of tertiary education programs. Indonesian universities could use internships for undergraduate students, in-company placements of research students and academics, and practitioners from industry as visiting lecturers and members of curriculum development committees. Incorporating training for entrepreneurship into regular university programs can also help bring them closer to the productive sectors. A recent report prepared by the European University Association explains that the keys to promoting entrepreneurship at universities are collaboration, knowledge sharing, and allowing students to show initiative (Reichert 2019).

*Curriculum design and pedagogy.* Policies and incentives can encourage tertiary education institutions to adopt innovative approaches to curriculum design and pedagogy, taking advantage of new technologies (AI-based simulations, virtual reality, 3-D printing). The conventional content-based curriculum can be replaced by novel approaches such as problem-based learning; cooperative programs in partnership with industry, and competency-based programs; and multidisciplinary programs and research-based learning paths. Paradigm shifts in curricula and pedagogy require substantial innovations in the assessment system to support student-centered and outcome-based education. Internationalization. Indonesian universities could enhance internationalization by redesigning curricula in academic programs in partnership with foreign universities, increasing the number of courses in English in order to improve the mastery of English by students and faculty, seek international accreditation of selected programs, and implement student and faculty exchange programs with foreign universities. The government is in the process of allowing foreign providers to work in the country, which could give a boost to internationalization, as happened in Malaysia.

Talent development. In the medium and long terms, establishing a good talent development system would require revamping graduate schools to attract high-quality domestic and international PhD students and produce a good pipeline of doctoral and post-doctoral students. In the shorter term, research-intensive universities could introduce a tenure track for promising young researchers. To ensure that universities focus on leading-edge research and high-quality teaching, Indonesia could consider, following the examples of Australia, Taiwan, and the United Kingdom, a "teaching excellence" initiative, which would offer incentives to incorporate appropriately-defined "effective teaching" in the evaluation and promotion criteria for faculty, on par with excellence in research.

To recruit the best-qualified applicants for academic staff, universities should move away from one-step reviews of standardized applications to a staged process that includes written statements, portfolios, and interviews to align the trajectory and expectation of applicants with the values, institutional culture, and strategic orientation of the recruiting university. To assess the qualified applicants thoroughly, the hiring unit should organize a research talk, a teaching talk, and a conversation with students. Finally, radical changes in the employment status of faculty members can help develop an academic performance culture that rewards results. For example, Finland recently transitioned from a civil service status for all academic and administrative staff to having faculty and administrative staff be employees of their university.

## Strengthening research and technology transfer

Comparing Indonesia with its regional neighbors reveals poor performance in research output and

	Academic	Fiscal	Effective use of	Quality and		
Instrument	integrity	integrity	resources	relevance	Innovation	Equity
University instruments						
Strategic plan				~	<b>v</b>	~
Key performance indicators /scorecards			~	~	~	~
Budget			✓			
Financial audit		~	~			
Student satisfaction surveys	<b>v</b>			~	~	
Graduate employment surveys				~		
Employer and alumni surveys				~	~	
Assessment of learning outcomes added value			~	~		
Annual report (to parliament and the public)			~	~	~	~
Government instruments						
Licensing				~	~	
Accreditation/academic audit/evaluation	~		~	~	~	
Funding formula			~	~	~	~
Performance contracts			~	~	~	~
Scholarships/student loans/vouchers			~	~		~
Student engagement surveys				~	~	~
Labor market observatory				~		
Assessment of learning outcomes			~	~		
Rankings/benchmarking			~	~		

#### TABLE 6.3 Principal dimensions and instruments of accountability

Source: Authors' elaboration.

	Citable documents per million population		h-index	Patents per million population	Global Innovation Index rank	
Countries	2010	2017	2017	2017	2008	2019
Australia	2,741	3,352	848	251	22	22
China	249	356	712	233	37	14
Denmark	2,975	4,179	662	1,084	8	7
Finland	2,777	3,225	571	1,451	13	6
France	1,510	1,564	1,023	709	19	16
Germany	1,664	1,853	1,131	1,206	2	9
Indonesia	10	71	196	1.7	49	85
Japan	949	898	920	2,282	9	15
Malaysia	547	936	249	30	25	35
Netherlands	2,644	2,993	893	1,233	10	4
Philippines	13	28	205	1.4	63	54
Poland	777	1,096	479	114	56	39
Korea, Rep.	1192	1,491	576	2,341	6	11
Singapore	2,831	3,388	492	548	5	8
Switzerland	4,092	4,813	866	3,065	7	1
Thailand	140	212	289	3.2	44	43
United Kingdom	2,223	2,468	1,281	362	4	5
Vietnam	23	63	183	1.2	64	42

## TABLE 6.4Research and innovation capacity and output, Indonesia and<br/>benchmarking countries

Source: SCImago for research output, h-Index, World Intellectual Property Indicators 2017 for patents, Gender Inequality Index 2008 and 2019.

Note: Main challenges: The determinants of the present performance.

technology transfer (table 6.4). Even though the quantity of scientific publications increased substantially from 2008 to 2019, Indonesia's research output remains way below that of China, Malaysia, or Thailand. Indonesia's h-index, a proxy of quality and impact of scientific publications, is also low. It is no surprise, therefore, to see that the competitiveness of the Indonesian economy has deteriorated. While all Asian middle- and low-income nations in the benchmarking table improved their position in the Global Innovation Index over the past 10 years, Indonesia stands out as the only country with a significantly lower rank (85, down from 49).

The low research and technology transfer observed in Indonesia is largely associated with limited human resource capacity and insufficient funding. Most Indonesian universities lack the talent and the policies and incentives to attract and retain high-caliber researchers. In 2016, Indonesia's researcher ratio was only 1,071 per million population, far below Malaysia and Singapore, with 2,590 and 7,000 respectively. Despite an impressive increase in the number of PhD degree graduates in the past two decades, Indonesia is still missing a critical mass of high-guality research talent. Many university graduate programs are underdeveloped in faculty, financing, and other scientific resources such as science labs, equipment, and technology platforms.

For investment, Indonesia spends only 0.1 percent of GDP on gross expenditure for R&D (GERD) as a percentage of total GDP, far below China, Malaysia, Thailand, and Vietnam (figure 6.2).

University research is severely underfunded. Further, the limited resources available for research and technology transfer in universities are spread too thin, are not allocated on the basis of performance, and may not always be aligned with national and local priorities.

Another limiting factor is the low level of university-industry and international collaborations in Indonesia, the result of low demand from the private sector and insufficient industry-relevant research at the universities. A related challenge is that Indonesian universities do not have many links with leading-edge global research, such as worldclass universities and their world-class faculty, which would allow them to participate in collaborative research programs and internationalize their PhD programs.



#### FIGURE 6.2 GDP on gross expenditure for R&D as a percentage of GDP, 2015

For Indonesia to reap the potential of this sector, it needs to accelerate efforts to form a critical mass of high-level researchers. In the past three decades, Brazil's CAPES Foundation, operating as an arm of the Federal Ministry of Education, has coordinated the country's interventions to improve the quality of Brazil's academic staff through grants and rigorous evaluation programs. The government stepped up its efforts through its Science Without Frontiers initiative, which financed 25,000 annual scholarships for overseas studies at the Masters and PhD levels in highly ranked universities in OECD countries. Box 6.2 illustrates how a recent World Bank project has supported efforts to strengthen research institutes in Indonesia.

One key decision for the national science and technology strategy is how many research-intensive universities the country should have and can afford. This could be done by simply selecting a number of universities, as Thailand did a few years ago, to focus on research. Or it could be based on a competitive exercise (Excellence Initiative), following China, France, Germany, Japan, and Republic of Korea, to invite interested universities to design their upgrading strategy to become worldclass institutions at the leading edge of research. After selection, the government would need to commit adequate funding over the long run.

To facilitate inserting young doctoral graduates into dynamic research teams, Indonesia could also

consider funding postdoctoral schemes, emulating government programs in other parts of the world. Accredited universities could hire promising young researchers paid by government for up to two years, at no or little cost to the receiving institution, as Pakistan did in the 2000s.

#### Modernizing governance and management

One of the key dimensions of good governance at the national level is the ability of the government to steer all tertiary education institutions in a coordinated manner. However, the system is divided into three subsectors since the recent dissolution of the Ministry of Research, Technology and Higher Education (MoRTHE). Responsibility for secular higher education has gone to the Ministry of Education and Culture (MoEC). The Ministry of Religious Affairs (MoRA) is responsible for managing religious tertiary education institutions. And other line ministries supervise professional tertiary institutions.

The governance system is very centralized for human resources management and very loose for quality assurance. The academic and administrative staff of public universities are all civil servants, whose pay and administrative status are tightly controlled by the Ministry of Education, the Ministry of State Apparatus and Bureaucracy Reform, and the Ministry of Finance. As discussed earlier, accreditation requirements have not been

#### **BOX 6.2** Supporting research institutions

The Research and Innovation in Science and Technology (RISET) Project (US\$80 million), executed by the Ministry of Research and Technology, supports the government in improving the human resource capacity of science and technology institutions and strengthening technology transfer, institutional functioning, and data management of public research agencies (LPNKs). The project started in June 2013 and will end in December 2020.

RISET piloted and institutionalized the concept of a science and technology park for agriculture in five parks as well as at four technology transfer offices in non-ministerial public research institutes. Results of these pilots are helping implement a commercial model for LPNK products. The project strengthened the coordination of public research funding among public research agencies and research funding providers. It developed a technology readiness level training module, guidelines on the methodology of unit cost calculations of output-based research activities related to renewable energy, and advanced the research and development of the Monevrisbang online system for monitoring and evaluation.

Of the 457 researchers who have gone on to study abroad, 307 have graduated—228 Masters and 79 PhDs—and returned to work in their respective LPNKs. In addition, 1,982 participants attended various national and international training programs and professional courses linked to the LPNK flagships, which supports the national priorities in science, technology, and innovation.

Source: Brief on RISET.

enforced systematically, contributing to serious quality challenges.

The 1996–2005 Higher Education Strategy brought a paradigm shift in tertiary education, setting the foundation for greater autonomy, transparency, and accountability for public universities. After initial controversy over the advantages and drawbacks of granting more autonomy to tertiary institutions, the 12/2012 Higher Education Act provided, in theory, increased autonomy over institutional organization, finance (except setting tuition fees), student affairs, staffing, and management of facilities and infrastructure. But the creation of new academic study programs remained tightly regulated. Autonomy was expected to be a powerful lever to develop a more efficient and effective tertiary education system. However, the strong legacy of central control has limited the implementation of autonomy on the ground, particularly financial and staffing autonomy. For example, all promotions are still controlled by MoEC, while inadequate institutional capacity to exercise autonomy has contributed to incomplete implementation of the policy. For accountability to the public at large, apart from the partially implemented accreditation process, no other mechanism is in place to keep society informed about institutional performance.

Efforts to improve the quality of teaching and learning and raise the research output in Indonesian universities are unlikely to succeed without modern governance structures and processes. Universities need more freedom and flexibility to develop a transformational vision and a solid strategic plan to implement that vision. The government should consider the following policy directions to modernize its governance setup and processes for tertiary education development:

- Articulate an ambitious, comprehensive vision for the future of tertiary education and translate it into an actionable strategic plan with clear milestones and sufficient resources for implementation.
- Assign the overall responsibility for tertiary education to one single department in charge of steering and coordinating the human development strategy design and implementation.
- Outline the rules of engagement with a well-defined distinction between the responsibilities of the state and the rights and obligations of tertiary education institutions.
- Design and implement a comprehensive management information system to monitor the performance of the tertiary education system.

In the past two decades, universities in many OECD countries have converged in their structure and practice toward a stronger role for university presidents and their leadership teams, while becoming more autonomous and accountable (Fielden 2008, Salmi 2017). Indonesia should consider moving toward giving more power to university councils, appointing university leaders through a transparent selection process based on professional criteria, and having clear rules of engagement for increased autonomy and accountability.
Role of university councils. Clear decision-making responsibilities and accountabilities should be granted to strengthened councils, which would be responsible for appointing the university president, endorsing the strategic plan, and approving the budget. International experience shows that, to function effectively, university councils should have no more than 20 members, including a significant number—sometimes even the majority—of independent external members (Salmi 2017). In Ireland and the United Kingdom, the external members are chosen by the council to avoid political interference. Strengthened and empowered councils should have the authority to appoint their head.

Selection of university leaders. In recent years, a few countries—for example, Denmark and Finland -have transferred the responsibility to select university leaders to the university council. In this new approach, the council conducts a competitive search to appoint, on purely professional considerations, the most suitable candidate from a pool of candidates from within and outside the institution. The new president could be a foreign national with high qualifications and experience, as is the case at Nanyang Technological University in Singapore, KAUST in Saudi Arabia, and Nazarbayev University in Kazakhstan. The Government of Indonesia has encouraged a move in that direction, with a Korean president recently appointed to lead the Asia Cyber University.

Improve gender balance. While females enroll in tertiary education at slightly higher rates than males (51.5 percent), they tend not to enroll in STEM faculties (science, technology, math and engineering). For example, the national representation of female students in faculties of engineering is only 25 percent (Higher Education Statistics 2019). To address these gaps, tertiary institutions and government should act to reduce gender-barriers to entry and retention in STEM programs and academic professions, such as introducing scholarships or in-kind support for female students in specific STEM programs, providing grants for women's research projects in STEM-related fields at tertiary level, and revising HR policies and providing leadership training for female academics to improve recruitment and retention in senior academic positions.

Improve system resilience from COVID-19 and beyond. The current pandemic has demonstrated that globally, resilient education systems have been able to respond quickly and positively by reverting to on-line delivery. Their success has been possible because of (a) existing robust digital infrastructure, (b) technical and pedagogical capacity and the know-how to make the timely shift to effective online program development and delivery, and (c) the ability of all their students to fully participate in and benefit from this mode of delivery. In the context of the likely evolution of the current pandemic and anticipated future external shocks including climate change, natural disasters and others, the resilience of the Indonesian tertiary education system needs significant strengthening. An additional benefit is that it will afford institutions the ability to extend their reach to remote areas and in doing so, become more inclusive.

Table 6.5 summarizes the likely consequences and possible mitigation measures that the Government of Indonesia and the tertiary education institutions should consider together.

Of particular importance to implementing many of these recommendations is the need for the Indonesian government to strengthen access to broadband for all tertiary education institutions and students. It is recommended that a minimum of 100 Mbps–1 Gbps be available to all tertiary education campuses, keeping in mind the expected increases in data traffic and emergence of new applications between now and 2025. This involves three complementary steps:

- Further strengthen IDNET, the country's national education and research network. It can act as a single point of coordination to reach all universities in the country—and to connect them to international knowledge and digital resources. To achieve this goal, IDNET must focus on providing universal end-to-end service connectivity and not only on providing bandwidth to university sites. It may have to reassign staffing and borrow talents from universities in Indonesia to have the necessary technical capacity to implement these new responsibilities. Government support is needed to boost the broadband capacity of the network and ensure that the price is affordable for all tertiary education institutions.
- Work with commercial internet providers to ensure free or heavily-subsidized internet access for all students. The Ministry of Education and Culture must take the lead in negotiating access for all Indonesian universities to digital resources available in foreign institutions, institutes, and colleges.
- Complemented efforts to improve connectivity through interventions that help tertiary education institutions overcome challenges in connecting to adequate learning management systems and videoconferencing facilities.

#### TABLE 6.5 Matrix of COVID-19 effects and mitigating measures for tertiary education

Effects	Short-term—until August 2020	September 2020—June 2021	2021 and beyond	
lssues/ challenges	Staff members/students sick or dying	New admission criteria/procedures	Reduced public funding for higher education Freeze on hiring of new staff	
	from virus Temporary closures with no	Reduced public funding for higher education		
	alternative delivery Temporary closures and switch to	Reduced or increased research funding depending on field	Closure of institutions/programs due to student attrition/switching	
	online education Higher spending due to rapid	Closure of institutions/programs due to student attrition/switching	Lower enrollment of students from under-represented groups	
	investment in e-learning technology Financial/logistical difficulties for low-	Higher dropout rates among low- income students	Reduced number of international students	
	income students	More widespread use of technology-	More widespread use of technology-	
	(academic staff and students)	programs	programs	
	Lab- and field-based research on hold or delayed (regular and PhD research)	Reduced statting and salaries Greater need for academic and		
	Suppression/modification of exam and graduation requirements	psychological counseling		
	Suspension of graduation ceremonies, scheduled conferences, and academic events			
	Delays in renewal of leadership teams and/or university boards			
Mitigating measures	Short-term response	Medium-term recovery	Long-term resilience	
Government policies	Financial package for tertiary education institutions	Financial package for tertiary education institutions	Sustainable funding strategy for the tertiary education system	
	Student loan repayment moratorium	Strengthening of broadband access (capacity and pricing), including IDREN Training of academics in preparation and delivery of online education	Shift to income-contingent loans	
	Strengthening of broadband access (capacity and pricing), including IDREN		Quality assurance supports online education on par with on-campus	
	Training of academics in preparation and delivery of online education		education Strengthening of broadband access	
	Additional research funding in COVID–19 related areas	Flexibility in quality assurance requirements	(capacity and pricing), including IDREN	
	Flexibility in quality assurance requirements			
Institutional policies	Alternatives to face-to-face instruction	Increased alternatives to face-to-face instruction and better curation of	Mainstreaming of innovative curricular and pedagogical practices and next	
	Capacity building for online education teaching and learning (instructors and digital infrastructure)	online content Capacity building for online education and blended teaching and learning	generation assessment modalities Mainstreaming of predictive analytics and AI to identify at-risk students	
	Identification of students without	(instructors and digital infrastructure)	More systematic fund-raising	
	Provision of devices for low-income	innovative education practices	Strategic planning includes risk assessment and mitigation	
	students Financial support for low-income students	analytics and AI to identify at-risk students		
	Identification of at-risk students	Strengthened of academic and		
	Strengthening of academic and	psychological counseling/mentoring services		
	Adjustment of assessment	Increased fund-raising efforts		
	approaches and graduation requirements for this academic year	Increased internationalization "at home"		
	· · · · · ·	Better preparation for risk assessment and mitigation (including through relevant research on lessons from previous epidemics)		

Effects	Short-term—until August 2020	September 2020—June 2021	2021 and beyond
Support from firms and other organizations	Donations in cash or kind (laptops,	Donations	Donations
	tablets, protection masks)	Free online platforms for universities	Free online platforms for universities and colleges
	Free online platforms for universities and colleges	and colleges	
		Free educational resources for	Free educational resources for
	Free educational resources for	universities and colleges	universities and colleges
	universities and colleges	Networks for strengthening of online	Networks for strengthening of online education practices
	Networks for strengthening of online education practices	education practices	

#### TABLE 6.5 Matrix of COVID-19 effects and mitigating measures for tertiary education (continued)

Source: Authors' elaboration.

Institutions should include an IT office staffed with the right technical and managerial expertise to manage and maintain the network and infrastructure and to offer support to faculty and students. Providing laptops or tablets to students who have no computer access at home is equally important.

Institutional autonomy. To improve their performance, Indonesian tertiary education institutions should have meaningful control over the main factors affecting the quality and costs of their programs. Autonomy includes, among its many dimensions, the ability of each institution to set its own admission requirements, determine the size of its student body, and establish new programs and courses (academic autonomy). It also means the ability to make structural changes to the configuration of institutions (organizational autonomy). Institutions must also have the ability to assess tuition fees, establish eligibility criteria for financial assistance to needy students, and reallocate resources internally according to self-determined and transparent criteria (financial autonomy).

For staffing autonomy, Indonesia can consider two options to introduce performance elements in the management of academics and researchers, which would help the universities establish themselves as dynamic institutions of teaching, research, and technology transfer. The first would be to maintain the civil service status of academic staff but allow universities to establish benefits and rewards to recognize the actual performance and contributions of individual staff. The second would be to eliminate the civil service status of academic staff and make each university the employer—and assessor—of its academic and administrative staff.

Increased institutional autonomy should go hand-in-hand with a well-defined accountability framework. International experience indicates that good accountability practices involve at least two types of yearly reports: a financial audit report prepared by a credible private sector firm following international accounting standards, and an annual performance report showing progress against each university's own strategic objectives and yearly plan, which can be presented to parliament every year, as happens in the Canadian province of Quebec.

## Defining a sustainable financing strategy

The financing of tertiary education suffers two major constraints. First, government spending on tertiary education in Indonesia is small. The Indonesian Constitution stipulates that a minimum of 20 percent of government budget must be allocated to education, but tertiary education actually gets less than 5 percent of the total government spending on education despite the social returns to tertiary education. This is equivalent to 0.4 percent of gross domestic product (GDP), much lower than the 1.7 percent in Malaysia and 0.7 percent in Thailand. Public spending is estimated to represent only 25 percent of total spending on tertiary education, compared with the OECD average of about 80 percent and Thailand's 70 percent. The bulk of public funding goes to pay salaries directly to public tertiary education staff.

Public funding to help expand access to tertiary education is limited. It is estimated that financial aid provided to students enrolled in tertiary education institutions covers only 3 percent of the total costs to attend. There is no student loan scheme specifically to serve low-income students.

Second, public funding does not incentivize institutions to improve performance. The resources that the Indonesian public universities receive from government are not allocated on the basis of an objective and transparent funding model. Instead, they are negotiated directly between the universities and the Ministry of Finance, reflecting historical trends, the fiscal situation, and the influence of each university's president. As a result, the budget is not an instrument to ensure that the universities are aligned with the national development objectives and maximize their performance. Nor does it have built-in incentives to encourage the universities to be innovative in the types of programs they set up or in their curricular and pedagogical practices. Generally speaking spending is not closely linked to outcome targets and there is little accountability for results.

To mobilize additional resources for tertiary education, the government can increase cost-sharing in public universities, encourage public universities to diversify their sources of income, and promote more public–private partnerships (PPPs).

#### **Cost-sharing**

Higher cost-sharing in public tertiary education institutions cannot be envisaged without putting in place a comprehensive student aid system to ensure that qualified Indonesian students are not deterred by financial barriers from entering university education and completing their studies. Cost-sharing could be achieved by introducing a targeted free tuition (TFT) scheme, expanding the existing needs-based scholarship program, and setting up a sustainable student loan system as an income-contingent scheme.

Countries across the world can be divided into four main groups for cost-sharing in public universities.

- The first group are the richest countries whose public universities do not charge tuition fees.
- The second group, including China and Vietnam, comprises countries that charge fees to all students, with various forms and levels of financial aid to protect low-income students from financial hardship.
- The third group, with most former socialist nations in Eastern Europe and Central Asia and several Sub-Saharan African countries, allows the most academically qualified students to study free of charge or with low fees but require the other students to pay high fees.

 The fourth group comprises a small number of nations that charge substantial fees to only select groups of students, while exempting lowincome students.

Chile, Italy, South Africa, the Canadian province of Ontario, and the state of New York in the United States lead the group of countries or regions that have recently introduced targeted free tuition, a relatively new funding model whereby the poorest students are exempted from paying fees, following the example of some equity-conscious private universities in North and South America which offer needs-blind admission. The most equitable and sustainable approach could be for Indonesian universities to move to a targeted free tuition scheme (table 6.6).

In the medium and long term, the most sustainable approach would be to rely on student loans to provide financial aid to all needy students. But traditional, mortgage-type student-loan schemes, with a fixed repayment schedule, are vulnerable by design (Chapman et al. 2014). To avoid high default rates, the new loan program should consider borrowers' future incomes in their repayment schedules, following the income-contingent loans in Australia and New Zealand. It is widely considered to be a more sustainable source of revenue (not a one-way subsidy), more efficient (uses the tax system for tracking tax payees), and more equitable (a low repayment burden linked to future income streams).

#### **Resource diversification**

While the potential for resource mobilization is more limited in developing countries than in OECD nations, Indonesian public universities can step up their efforts to actively seek additional resources through donations, contract research, consultancies, continuing education, and other fund-raising activities.

Not all sources of income have the same potential. Contrary to what is commonly assumed, technology transfer is not, on average, a highly beneficial activity for generating income, even though it

#### TABLE 6.6 Sustainability and equity impact of various cost-sharing schemes

Cost-sharing modality	Financial sustainability	Equity impact
Free higher education for all	Very costly	Richer students more likely to benefit
Universal fees	Less demanding on fiscal resources	Equitable if financial aid available
Fees only for parallel students <sup>a</sup>	Less demanding on fiscal resources	Richer students more likely to benefit
Targeted free tuition	Costly	Potentially most equitable

Source: Authors' elaboration.

a. In many Sub-Saharan African and Eastern European/Central Asian countries, public universities have two admission systems. The brighter students do not pay fees, and those with slightly lower scores at the university entrance exam are also admitted but they have to pay fees (creating a cross-subsidization situation from poorer to richer students on average).



is a good way of ensuring the relevance of teaching and research. Experience suggests that providing continuing education, undertaking productive activities, and raising funds from alumni, philanthropists, and especially corporations, are the three most important income generation sources.

The government could encourage public universities to be more effective in their income-generation efforts by offering matching grants, a powerful instrument to stimulate the fund-raising activities of public universities, which would require some change in existing regulations for non-autonomous universities. In the Canadian province of Alberta, when the government introduced a matching grant program in 2006, it was so successful that the amount of philanthropic donations received by the universities exceeded the funds set aside for co-financing by the provincial government. In Hong Kong SAR, China, the matching fund program proved so effective that it inspired the British government to set up a similar scheme for its own universities. Between 2008 and 2011, the British government matched any eligible gift made to a participating higher education institution.

Two caveats. First, the government should not penalize the most enterprising universities by

reducing their budget as they become more adept at fundraising. Ministries of finance are often tempted to cut down the budget allocation to universities perceived as successful in raising funds from the private sector or from philanthropists. Second, in addition to providing the right financial incentives, the government should also guarantee a favorable taxation regime for stimulating philanthropic and charitable gifts to higher education institutions.

#### Public-private partnerships

A growing number of countries have relied on public-private partnerships (PPPs) to fund investments in tertiary education. The government could explore this as a way of mobilizing additional resources from the private sector and complementing its public investment in tertiary education. At the lower levels of education, PPPs sometimes include the provision of education services by private institutions that receive public subsidies, something which Indonesian institutions have tried but could do more of. But in higher education, PPPs are usually restricted to financing infrastructure projects (construction, management, maintenance). Most major PPP-supported infrastructure investments in tertiary education focus on student

Guiding principles	Indonesia funding model	Comments
Alignment with national priorities	+	No direct relationship
Performance orientation	+	No performance criteria considered
Equity considerations	++	Availability of scholarships from the DG of HE
Multiplicity of instruments	+	Only direct budgetary contributions
Objectivity and transparency	+	None
Stability over time	+	No guarantee of stability and no multi-year budget
Block grant allocation	++	This gives flexibility
Institutional autonomy and accountability	++	Insufficient

## TABLE 6.7Alignment of the Indonesian funding framework with international goodpractices

Source: Authors' elaboration.

+ is weak alignment; ++ is average/reasonable alignment.

accommodations and cafeterias developed on a build-operate-and-transfer basis, as in OECD countries such as France, the United Kingdom, and the United States, and in developing countries such as Nigeria and South Africa.

Indonesian universities could also explore entering PPPs for energy production, following recent experience from France and the United States. Ohio State University's 50-year contract with an energy company and an investment firm to run its utility system is the most striking example of the approach. The university received US\$1.1 billion at the outset, which included funding for academics as well as energy-related research and facilities. In exchange, it pays its partner annually, including a US\$45 million fee adjusted to inflation, as well as other fees for operations and capital investments in the project (Busta 2019). Along the same lines, an area worth exploring would be PPPs for building renewable energy facilities to generate solar and wind power on campuses, as the University of Bordeaux in France has recently started.

#### Performance-based budget allocations

Based on international experience, an adequate model for allocating public funds for tertiary education in Indonesia should be guided by eight principles—close alignment with national priorities, explicit links to performance, equity among all population groups, objectivity and transparency in the allocation process and criteria, consistency and compatibility among the various financing instruments in use, stability over time, institutional autonomy and accountability, and allocation as a block grant (table 6.7).

It appears that the present funding framework has few dimensions of alignment with international trends. The funding framework could be improved by making it more performance-oriented, offering better guarantees of stability over time, and having a greater diversity of instruments to meet the various needs of institutions that have different missions (research, general education, skill formation). To achieve this purpose, policymakers may consider the three types of innovative allocation mechanisms, separately or combined: funding formulas, performance contracts, and competitive grants.

Funding formulas. One of the most transparent and objective manners of distributing funds for recurrent expenditures is to use a mathematical formula linking the amount of resources allocated to indicators of institutional performance, such as the number of graduates, the employment rate of graduates, and/ or the research output. Denmark has a "taximeter model" in which 50 percent of recurrent funds are paid in relation to the number of students who successfully pass exams every academic year. In the Netherlands, half of recurrent funding is based on the number of degrees awarded as an incentive to improve internal efficiency. In Australia, funding for doctoral student places is based on a formula comprising graduates (40 percent), research outputs (10 percent), and research income (50 percent).

Performance contracts. These contracts are nonbinding regulatory agreements, negotiated between governments and higher education institutions and defining a set of mutual obligations. In return for the participating universities' commitment to meeting the performance targets established in the agreement, the government provides additional funding. The agreements may be with several or all institutions in a given higher education system, or with a single university. All or part of the funding may be conditional upon the participating institutions meeting the requirements in the contracts. The agreements can be prospectively funded or reviewed and acted upon retrospectively. Austria, Chile, Costa Rica, Denmark, Finland, France, and the United States have used performance contracts to nudge their public universities toward more innovative strategies and practices (Salmi 2017).

The main advantage of performance contracts is to encourage institutions interested in improving their results voluntarily without central edicts that are unlikely to be followed. For the government, performance contracts help align the behavior of higher education institutions with national policy objectives. For the institutions, they can bring additional resources to implement the strategic plan, if the institution has a transformative vision and the will to implement it.

*Competitive funds.* Competitive funds, which Indonesia has used in the past, have proven their value and strength as an effective resource allocation mechanism for transformative investment purposes. Under this approach, institutions are invited to formulate project proposals that are reviewed and selected by committees of peers according to transparent procedures and criteria. Positive experiences in Chile, China, Egypt, Indonesia, and Tunisia have shown the ability of competitive funds to help improve quality and relevance, promote curricular and pedagogical innovations, and foster better management—all objectives that are more difficult to achieve through funding formulas.

The actual eligibility criteria vary from country to country and depend on the specific policy changes sought. In Argentina, proposals could be submitted by entire universities or by individual faculties or departments. In Chile, both public and private institutions are allowed to compete. In Egypt, a competitive fund was set up in the 1990s to stimulate reforms in engineering education.

One of the principal benefits of competitive funds is the practice of transparency and objectivity on the basis of clear criteria and procedures and the oversight of an independent monitoring committee. An additional benefit is that they encourage universities to undertake strategic planning activities which help them formulate proposals based on a solid identification of needs and a rigorous action plan.

## Recommendation 11: Improve the quality, relevance, and equity of the tertiary education sector

#### What can be changed or improved?

To optimize the contribution of tertiary education to its ambitious development agenda, the government has signaled its intention to put in place a more flexible regulatory framework that would allow the most dynamic tertiary education institutions to transform themselves by introducing innovative educational and managerial practices. This chapter has outlined options to improve the contribution of tertiary education to equitably building human capital, summarized below.

## What are the options to implement this change?

Access and equity. MoEC can help to spread enrollment growth across a variety of tertiary education institutions and delivery modalities (public, private, non-university, and online) and push for the elimination of financial barriers for students from underrepresented groups. MoEC can work with public and private institutions to put in place comprehensive non-monetary equity promotion measures for increased outreach and the retention of students from underrepresented groups.

Quality and relevance. The Directorate General of Higher Education (DGHE) of MoEC can articulate and implement a proactive talent development strategy for academic staff. The Directorate of Learning and Students of DGHE can encourage innovations in curriculum and pedagogy as well as promote the internationalization of curriculum and the mobility of students and academics. The Directorate of Institutions of DGHE can develop closer university-industry linkages and strengthen quality assurance systems.

Research and technology transfer. The DGHE MoEC can continue to finance scholarships for PhD training at top universities overseas. The Directorate of Human Resources can provide funding for postdocs to build up research teams and select a small number of research-intensive universities for capacity building toward excellence.

Governance. DGHE MoEC can work with the tertiary education community to articulate a vision for the future of tertiary education, with an actionable strategic plan and sufficient resources for implementation. The Directorate of Institutions can make a clear distinction between the responsibilities of the state and the rights and obligations of tertiary education institutions. The Secretary of the Directorate General of Higher Education can design and implement a comprehensive management information system to monitor the performance of the tertiary education system. Sustainable financing. To mobilize additional public funding the DGHE MoEC can provide incentives to public tertiary education institutions to diversify their resources through contracts from continuing education, consultancies, research, and fund-raising. The Directorate of Institutions can promote public–private partnerships. The DGHE can introduce performance-based allocation mechanisms.

#### References

- Busta, H. 2019. "Colleges look to public-private partnerships for help with sustainability." *EducationDive*, 11 October. https://www.educationdive.com/news/plugging -in-colleges-seek-partners-to-help-reach-energy -goals/564868/.
- BPS 2018 https://www.bps.go.id/dynamictable/2018/07/ 11/1523/angka-partisipasi-kasar-apk-perguruan-tinggi -pt-menurut-kelompok-pengeluaran-2015–2019.html.
- Chapman, B., T. Higgins, and J. Stiglitz. 2014. Income Contingent Loans: Theory, Practice and Prospects. London: Palgrave MacMillan.
- Fielden, J. 2008. "Global Trends in University Governance." Education Working Paper Series 9, Education

Sector, Human Development Network, World Bank, Washington, DC.

- Reichert, S. 2019. "The Role of Universities in Regional Innovation Ecosystems." Brussels: European University Association Study. https://eua.eu/downloads/ publications/eua%20innovation%20ecosystem%20 report%202019–3-12.pdf.
- SAKERNAS (Survei Angkatan Kerja Nasional). 2018. Badan Pusat Statistik.
- Salmi, J. 2017. *The Tertiary Education Imperative: Knowledge, Skills and Values for Development.* Rotterdam: Brill/Sense Publishers.
- UNESCO (United Nations Educational, Scientific, and Cultural Organization). 2017. "Accountability in Education: Meeting Our Commitments." Background paper prepared for the Global Education Monitoring Report 2017/18, UNESCO, Paris.
- ——. 2020. UIS (UNESCO Institute for Statistics) Data 2020. Paris: UNESCO.

#### **Government laws and regulations**

Law No. 12/2012 on Higher Education. https://jdih. kemenkeu.go.id/fullText/2012/12TAHUN2012UU.htm.



## **CHAPTER 7**

# Managing Indonesia's multiple systems for learning



he preceding chapters have stressed the importance of learning across key areas of education, including (1) boosting learning, (2) starting early with readiness for learning, (3) promoting equity and inclusion in learning, (4) preparing and supporting teachers, (5) promoting skills for the labor market, (6) strengthening tertiary education. Further gains can be made by aligning the system as a whole for learning. This concluding chapter considers how to improve system coherence so that all aspects of the system drive toward student learning.

#### Schooling for learning

The 2018 *World Development Report* (World Bank 2018a) stresses that schooling is not the same as learning. Reform in Indonesia can advance on three fronts to build on its education reforms and improve results.

Assess learning to make it a serious goal. Use well-designed student assessments to measure the health of education systems, not primarily as tools for administering rewards and punishments. It also means using the results of these learning measures to spotlight hidden exclusions, make choices, and evaluate progress.

Act on evidence to make schools work for all learners. The volume and quality of evidence on how people learn has expanded in recent decades, along with an increase in educational innovation. Countries can make better use of this evidence to set priorities for their own practices and innovations.

Align actors to make the whole system work for learning. Classroom innovation is unlikely to have much impact if the system as a whole does not support learning. By taking account of technical and political barriers and mobilizing stakeholders, Indonesia can support innovative educators, administrators and subnational leaders on the front lines.

#### Assess learning—to make it a serious goal

Education service deliveryis affected by the resources available, institutional capacity, politics, and ad hoc restrictions, among other variables. Earlier reforms to strengthen assessment using computer-based testing—along with more recent structural reforms to redesign the assessment and the underlying student learning progression—are headed in the right direction, and more developments are expected in the near term.

The tradition of testing and assessment has revealed widespread learning weaknesses. Indonesia

has participated in all main international tests implemented since 1990, including Trends in International Mathematics and Science Study (TIMSS) and Programme for International Student Assessment (PISA). This allows for cross-country and acrosstime comparisons in learning outcomes that can identify strengths and areas for improvement.

Indonesia has recently started major changes in its national assessment system. Because of controversies surrounding the exams, the Ujian Nasional (UN) for grade 6 was cancelled and changed to a less high-stakes examination called the Nationally Based School Examination (Ujian Sekolah Berbasis Nasional, or USBN). The specified topics covered in the USBN are selected at national level, and test papers are then developed at district level to be used in all schools, so they are not comparable between districts or between years. In another major policy shift in December 2019, Minister Makarim announced the termination of the UN for grade 12, stating, "The implementation of national exam in 2021 will be changed to the Assessment of Minimum Competency and Survey of Character, which consists of the ability of language (literacy), the ability of math (numeracy), and the strengthening of character education."<sup>103</sup> While previous iterations of the national assessments had challenges and controversy, keeping the important advances of the less high-stakes assessment such as AKSI will be critical to be able to continue measuring the health of the system (box 7.1).

#### Act on evidence—to make schools work for all learners

Measurement should guide action. To do so, measured results must be available to stakeholders. Measures of learning can motivate action by increasing participation of stakeholders in outcomes and by making information available for reform. There is a need to make information about learning available and to support key stakeholders, including teachers, parents, districts, provinces, to use it. This information can come in the form of student assessment, such as AKSI, and it can also come through instruments such as the proposed Education Quality Index (see chapter 5), which is intended to bundle key information that can be used for decision-making.

One way to do this is to ensure greater ownership, engagement, and empowerment of decentralized actors to respond to local learning challenges. Improving the quality of service delivery is a particularly difficult challenge, poorly suited for a nationally homogeneous response. To drive more effective local responses, districts need support to understand the different education challenges

#### **BOX 7.1** Measuring the health of the system

AKSI, the Indonesian Student Competency Assessment (Asesmen Kompetensi Siswa Indonesia), is a mechanism to assess a representative sample of students starting in grade 4. It is meant to measure the health of the system rather than the achievement of individual students. The assessment, using a scoring system similar to PISA, was introduced in 2016 in primary schools and subsequently in lower (2017) and upper (2018) secondary schools. On its introduction in grade 4, 77 percent of the students tested at the lowest level of achievement.<sup>1</sup>

As of late 2020, AKSI has not been implemented in madrasahs. The Ministry of Religious Affairs is currently preparing the implementation of census-based standardized examination system at primary level to support improved service delivery and accountability for formal public and

1. http://puspendik.kemdikbud.go.id/inap-sd/.

private madrasahs. The examination will be built from the AKSI developed by MoEC and be implemented in 2021.

A new assessment, the Minimum Competency Assessment, is planned for launch in 2021 to map student competencies in reading and numeracy. The competency in reading will measure not only students' ability to read but also students' level of reading comprehension. Likewise, the competency in mathematics will measure not only students' ability to do analysis but also students' ability to do mathematical operations. The AKM is planned to be implemented in all schools and madrasahs.

The results from these assessments are used to map the student competencies and performance at school, region, and national levels.

that they face and the resources that they already possess to address them. The Ministry of Education and Culture (MoEC), together with the Ministry of Home Affairs (MoHA) and others, can take a stronger role in assisting districts to define their learning-related challenges, provide resources to respond to identified obstacles, and ensure that the education system remains focused on learning.

District leaders, bureaucrats, educators, and parents need to understand that the system is failing many children on the provision of basic literacy and numeracy skills. They can understand this problem not as a national issue, but as a local one, relevant to them and their own kids. They would benefit from seeing where they are doing well, so that they have a place to start moving forward. This means that they need data that are meaningful at the district, school, and class level. It is important that teachers have the capacity and flexibility to adjust their teaching to the needs of their students, and that their directors and school monitors have the ability to support them in doing so.

## Align actors—to make the whole system work for learning

Education systems require effective institutional alignment at a variety of levels and among multiple actors (World Bank 2018b).

Capacity levels matter for district and school level bodies; national, provincial, and municipal

governments; subnational education authorities; and national ministries of education. The strength of institutions can strongly affect the quality of interactions between education officials and providers, on the one hand, and stakeholders from civil society, especially parents and employers, on the other.

These interactions take place within contexts shaped by political influences and political culture. Politics can drive misalignments when the vested interests of different stakeholders collide. Misalignment can occur along every step of the policy process, from defining goals to designing and implementing policies to evaluating their effectiveness. Misalignment threatens to undermine the efforts of education systems to produce learning (World Bank 2018a).

Far too often, policies and investments in education are not well aligned with national economic development needs, as noted in the 2018 *World Development Report* (World Bank 2018b). This lack of alignment has the potential to undermine reforming education systems to improve learning. Overall government capacity may affect actions that affect student learning, but capacity in education systems is likely to have a greater impact.

Among leading education systems in East Asia, progress was made possible by a series of deliberate policy choices that fostered alignment (Wong 2017). These policies included setting targets and demanding results, advocating for education in national spending, and providing the impetus for cross-sectoral alignment.

## COVID-19 pandemic impacts and response

The COVID-19 pandemic is expected to have a large and negative impact on progress in all sectors of human development. This includes education, where we estimate that Indonesian children have already lost 16 points on the PISA reading scale and US\$367 in future annual individual earnings due to the four-month closure period from March 24 to the end of September 2020 (figure 7.2) (Yarrow, Masood, and Afkar 2020). We used the World Bank's Country Tool for Simulating COVID-19 Impacts on Learning and Schooling Outcomes and data from the forthcoming Measuring the Quality of Education Services in Indonesia survey to simulate and contextualize the potential impact of COVID-19 school closures on learning outcomes, proficiency levels, enrollments, and expected earnings for Indonesian students in primary and secondary school (Azevedo et al. 2020). The estimate for the eight-month closure scenario shows that these losses are expected to increase as schools gradually re-open (and possibly re-close). Given unequal access to resources to support learning while schools are closed, children from poorer households are expected to lose more learning than children from wealthier households (Yarrow, Massod, and Afkar 2020).

Figure 7.3 summarizes the current and potential transmission channels for the impact of COVID-19 on education, including increased drop-outs due to economic hardship and loss of income. If, by July 2020, the income shock is -1.1 percent, the rate of out-of-school children (OOSC) is expected to increase by 0.13 of a percentage point for primary students, equivalent to 48,175 additional children dropping out of school at the primary level. At the secondary level, the increase in OOSC is estimated at 0.15 of a percentage point, equivalent to 43,031 additional children dropping out. The model estimates that, as households lose income, the dropout rate will increase as the opportunity cost of attending school increases (Yarrow, Massod, and Afkar 2020).

Like other countries, once re-opened Indonesia will likely find setbacks to its progress on the SDGs. Family poverty, maternal and child mortality, malnutrition, and stunting are all likely to have increased, and immunization rates, food production, and enrollment in ECED services and schools will all likely have declined. Evidence of setbacks as well as efforts by the government and others to

## FIGURE 7.1 Coherence and alignment for learning



## FIGURE 7.2 Projected trends in PISA scores due to COVID-19



reduce losses in these areas is already being collected (World Bank forthcoming).

In terms of education, both MoRA and MoEC have been fairly nimble in their response to the COVID–19 emergency as part of national and local government initiatives. In late March, schools began to close based on recommendations from the central government, with all schools from early childhood to tertiary closing by early April, affecting over 68 million students (MoEC Circular Letter

#### FIGURE 7.3 COVID-19 crisis education system transmission channels



No. 4/2020).<sup>104</sup> BOS funds were given increased flexibility, allowing them to be spent on COVID response at the school level. Among other actions, MoEC initiated an online-learning partnership with private providers to provide free access to Ed-Tech tools and it launched a national educational TV program on April 13, 2020. MoRA is providing training and support for teachers using online platforms and reaching out to school leaders to better understand their needs. National exams have been cancelled for academic year 2020. There is also an initiative to mobilize university hospitals to expand testing and repurpose some learning areas for overflow patients.

Looking forward, much more will need to be done to help the system recover and accelerate learning in the coming months and years. Based on anecdotal evidence and experience from other contexts, the following impacts have already started, and are expected to continue in the coming months:

 Overall investment in education may fall if less public financing is available because of economic contraction and reduced tax receipts and if funds are diverted to other sectors. In the short term, the revised national budget for 2020 is prioritizing the health sector, social protection, and protection to small and mediumsized enterprises to deal with the COVID–19 outbreak. However, with the constitutional mandate of 20 percent, education still gets the 20 percent allocation. MoEC has announced the reallocation of Rp 405 billion to support improvement in capacity and resources in education hospitals as well as for educational content on COVID–19.

- The ECED subsector may suffer more than other levels of education. Government-supported schools and kindergartens will likely keep their teachers during the pandemic and eventually reopen. But many private and communitybased ECED services have already reportedly closed. Without their salaries, staff may leave. Workforce capacity, built up over prior years, may be eroded by the pandemic. Parents who were negatively impacted economically may skip ECED services.
- The disparities, inequities, and exclusions that existed in schooling and learning before COVID-19 are likely to be exacerbated by the impact of the pandemic. Most children with disabilities now have lost the special services many of them received in their ECD programs and schools. They are likely to return to education even further behind their abled peers. Children of poor families and those disadvantaged by the digital divide (especially children in rural and remote areas) are also likely to have fallen further behind their wealthier peers. Households are likely to spend less on education inputs, and there may be some shift from higher-cost to lower-cost schools depending on the level of economic contraction. Dropouts by existing students may also rise dramatically, particularly among the poorest households, who will likely have difficulty paying for education and may need their older children to work to increase family income (Yarrow, Masood, and Afkar 2020).
- The supply of tertiary education and private technical and vocational education is expected to contract as decreased enrollments will lead

to decreases in tuition and other fees. This will impact these institutions' ability to pay salaries and meet other financial obligations. The demand for this education will also likely decrease with the expected economic contraction. Students who have paid tuition for intensive faceto-face instruction-especially for courses reguiring classroom or laboratory practice—may find online and distance education a poor substitute. Those universities with the technology and materials required for online learning will increase their advantage over those without. Similarly, students with access to the technology needed to process such learning will increase their advantage over those without. In other words, the extent that school and university learning has transferred out of the classroom to the computer will inevitably have an impact on the gap in learning between technologyadvantaged and technology-disadvantaged students.

This digital divide will be problematic for all levels of education. And the divide does exist. For example, urban households in Indonesia are almost twice as likely to have access to the internet, fixed broadband, computers, and radio than rural households—clear evidence of an urban–rural and most likely rich–poor digital divide (table 7.1) (Hadi 2018).

## What are the options to mitigate COVID-19's impact on education?

Support is needed for heathy development and learning now. Current action should support learning through online options, educational TV, and technical and moral support to education staff and families. These are important in a time of crisis, as are education-based services related to child health, nutrition, and protection. Continuing to pay teacher salaries is essential to guaranteeing the resilience of the overall system.

As schools reopen, it will be crucial to ensure that staff are in place, and that parents re-enroll their children. Recognizing that learning disparities will have increased because of the pandemic, it will also be crucial at the primary and secondary levels to assess students' learning gaps, both new and old, to provide extra support to those who have been most disadvantaged, and to differentiate instruction based on students' current learning levels. Additional socioemotional support will be important for students who may have been negatively affected by school closures and more toxic home environments. It may be necessary to extend the school year in order to help students catch up.

The existing mismatch between curricular pace and student learning needs to be closed, and students may need to be grouped by ability level across grades. Teachers will need to be supported to conduct these re-entry assessments. Students should not be held back or excluded from school, and individual needs and weaknesses, exacerbated by the pandemic, should be identified. There should be follow-through with targeted assistance to students catching up. The experience should also enhance teacher skills in formative assessments and differentiated learning beyond the COVID-19 response . While it may not be possible to accelerate learning enough to catch up in the first academic year following re-opening, it may be possible to re-orient the system toward grouping students by ability and differentiating instruction

TABLE 7.1	Indonesia's ICT indicators	(percent)	)
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		Ru	Rural		Urban	
	Total	Household access	Individual usage	Household access	Individual usage	
Internet	36.0	26.3	32.5	48.5	41.7	
Mobile broadband	93.3	95.4	_	93.3	_	
Fixed broadband	7.8	7.4	_	14.3	_	
Mobile phone	84.4	79.5	70.1	90.7	76.4	
Smartphone	—	—	59.2	_	70.7	
Non-smartphone	—	—	61.5	_	49.4	
Both	—	—	20.7	_	20.1	
Computer	31.4	22.1	20.4	43.4	38.5	
Fixed phone	4.5	1.4	_	8.5	_	
TV	87.7	82.6	67.0	94.2	81.2	
Radio	40.0	26.3	20.5	48.5	31.3	

Source: Hadi 2018.

by student's individual learning needs rather than by curricular pace.

For tertiary institutions, some closures and consolidations may be unavoidable due to financial strain. However, the following mitigation mechanisms can help improve the overall quality of the tertiary education systems and help align them with employment opportunities:

- Supporting enrollment through an expansion and increase of KIP-Kuliah, a tertiary education benefit received by low-income students.
- Supporting consolidation of the private sector into fewer high-quality institutions by easing the transfer of students from low-performing micro-institutions to larger ones that commit to improved service delivery. This could be done by extending no-cost credit to private universities meeting minimum size and quality criteria and that are willing to accept transfer students from other private schools.
- Supporting tertiary education institutions contribute to overall system resilience through investments in online education, and have them look ahead to the next climate or natural disaster-related event that may interrupt campus-based learning. In some cases, quality could be improved by shifting to online learning, particularly in areas such as foreign languages where institution-based learning could complement online instruction by native speakers.

Detailed discussion of the impacts of school closures and recommendations for strategies to support both improved face-to-face instruction, as well as improved quality of distance learning are discussed in Yarrow, Masood, and Afkar (2020).

#### Recommendation 12. As a part of the COVID-19 response and recovery, strengthen the system for future shocks and stresses

## What can be changed or improved to increase education system resilience to external shocks?

If learning declines and dropout increases are not effectively mitigated, there may be long-term macro effects on human capital development and rising inequality. But COVID–19 is not the only event that will result in these effects. More broadly, the education system will continue to be vulnerable to external shocks. Nationally, weak development controls and insufficient planning have allowed development to happen in areas prone to risk, including flooding, earthquakes, and land subsidence. As the risks of the climate crisis, extreme weather, sea level rise, and other climate changes increase, so do the risks increase for students, teachers, and for the infrastructure of schools, universities, and government offices.

Climate change and natural hazards are topics that merit more attention across the education sector, including for national curriculum content, individual school and local government disaster preparedness, school construction and infrastructure upgrading, and tertiary-level study and research. Learning from the early stages of the COVID-19 response shows the importance of developing an education system resilient to such shocks, whatever they may be. This means that distance-learning content and infrastructure must remain in place —whether online, TV, or radio-based—and that teachers must become even more skilled in the central role they can play in motivating and supporting students even from a distance. In other areas, national policy on new infrastructure investments for education can mandate energy efficient upgrades, the use of solar power, and hazard reduction related to flooding, earthquakes, or rising seas. Recognizing the importance of this kind of resilience and starting to build the structures and capacity to ensure it exists may be one of the few positive results of COVID-19.

Currently available information indicates that MoEC is planning a revision of the national curriculum in partnership with MoRA and other key stakeholders.<sup>105</sup> This revision could include more information on climate change and natural hazards at grade-appropriate levels. Disaster preparedness information and drills are the responsibility of local governments, but they can be supported through communication tools developed at the national level, including through the national curriculum.

#### Synthesis of recommendations

The recommendations of this report (table 7.2) provide the building blocks for learning, and their interconnectedness and coordination among all key stakeholders is critical for providing coherence and alignment of the system toward the goal of learning.

#### Interconnectedness of the recommendations

The recommendations in this report are highly interconnected and depend on one another for the system to function and progress as a whole.

#### Learning

The overarching theme of boosting learning is set in Recommendation 1: *Ensure that students reach at least minimum learning and development standards at each level of the system.* To achieve this, multiple things need to occur related to students, teachers, and management and inputs.

What is the need?	Recommendation	Who	How
Boost learning	1. Ensure that students reach at least minimum learning and development standards at each level of the system	Provinces Districts MoHA MoEC MoRA Local level supervisors (pengawas) Principal and teacher working groups	<ul> <li>MoEC to reduce and revise the NES indicators to focus on measurable and observable aspects of the education process that are more closely linked to learning.</li> <li>Subnational stakeholders to develop budgets and learning improvement plans to increase student learning.</li> <li>MoHA to require reporting on these plans and assess progress toward goal achievement; MoEC to provide technical support.</li> <li>MoEC to revise the national curriculum.</li> </ul>
Start early	2. Make quality early childhood education accessible to all	MoEC (DG ECED and Community Education) MoRA BAPPENAS MoHA MoV Provinces Districts Villages	<ul> <li>Government, led by MoEC, to issue policy statement making two years of preprimary education compulsory; share roadmap to achieve this by 2030.</li> <li>Government, led by MoEC, to prioritize and target funding to ensure that children most excluded from ECED services (for example, with disabilities, from poor and rural families) are able to complete two years of preprimary education.</li> <li>Districts can increase allocations to ECED within the existing education budget and seek alternatives, while MoF and MoEC can pilot innovative approaches to funding nationally.</li> <li>Accompany these reforms with integrated local and national socialization campaigns to stimulate registration of ECED services and higher enrollment.</li> <li>Improve collaboration among ECED stakeholders and improve data collection on ECED services, teachers, and learners.</li> </ul>
Provide learning for all	3. Act to guarantee equitable access to good quality education and learning by children most excluded from the system	MoEC MoRA Provinces Districts Schools Teachers Supervisors Principal and teacher working groups LPMP	<ul> <li>Leaders at all levels to recommit their energies and resources available to ensure equitable access to good quality education.</li> <li>MoEC and MoRA can continue to improve education management systems to include a special focus on inequity and exclusion to help identify excluded populations and children.</li> <li>Update school-based management tools to include indicators of exclusion such as nonenrollment, repetition, dropout, and completion rates.</li> </ul>
	4. Act to improve learning outcomes of the lowest performers	MoEC MoRA Provinces Districts Schools Teachers Supervisors Principal and teacher working groups LPMP	<ul> <li>MoEC and MoRA to implement national assessments in primary to identify learning inequities.</li> <li>Use primary grade assessments as a part of in-service teacher training to ensure that teachers know how to use this information to support students.</li> <li>Use student learning data to identify the lowest 40 percent of schools and students.</li> <li>Consistently low-performing schools and districts to receive special capacity support.</li> <li>Schools and teachers to preferentially support lowest performing students.</li> </ul>
Serve everyone	5. Ensure that all students, including those with disabilities, succeed	MoEC MoRA MoF MoHA MoSA Provinces Districts Schools	<ul> <li>Students at high risk of exclusion are identified early and provided needed support.</li> <li>Barriers to continuing schooling are removed by adapting learning environments.</li> <li>Teachers trained to identify and work with disabled students.</li> <li>Use BOS, BOP-PAUD to reduce cost of schooling, Program Indonesia Pintar for subsidies to disadvantaged families to enroll and keep children in school.</li> </ul>

#### TABLE 7.2 Summary of key recommendations

(continued)

What is the need?	Recommendation	Who	How
Improve teaching	6a. Improve the quality of preservice institutions and the candidates that enter them	MoEC MoRA MoHA LPTKs KemenPAN-RB	<ul> <li>Revise policies and regulations for the operational licensing and establishment of new LPTKs to control the number and quality of entering student teachers.</li> <li>In order to ensure the appropriate number of entrants, the DGHE and DG Islamic Education MoRA could identify qualified LPTKs and quota for each of them.</li> <li>The accreditation process for LPTKs could be strengthened and linked to the licensing and accreditation).</li> <li>Provide funding and technical support to BAN–PT to ensure it has the capacity and authority for a meaningful accreditation process.</li> <li>Incentivize LPTKs to meet the strengthened accreditation system using grants/financing.</li> <li>Close LPTKs that are do not meet and are not on track to meet accreditation standards in the near future.</li> <li>MOEC and MORA can set competency standards of new teacher candidates.</li> </ul>
	6b. Recruit the best teacher candidates and distribute them effectively	MoEC MoRA MoHA Province District Schools	<ul> <li>MoEC and MoRA can help attract the best teacher candidates by enhancing the visibility and increasing the status and reputation of accredited LPTKs.</li> <li>Resist political pressures in hiring.</li> <li>MoEC, MoRA, and MoHA can set minimum standards for hiring teachers across contract types by working closely with provinces and districts.</li> </ul>
	7. Improve professional development and calibrate incentives	MoEC MoRA MoHA Provinces Districts Schools	<ul> <li>MOEC and MoRA to establish and enforce procedures for induction, probation, and teacher assessment.</li> <li>Strengthen working groups to support their efforts to increase quality and decrease disparities among schools.</li> <li>Provinces and districts require supervisors to monitor and supervise student assessment by teachers; these are used to inform teaching and learning.</li> <li>MoEC and MoRA to include formative and summative student assessments in teacher appraisal.</li> <li>MoRA and MoEC, working at the national and subnational level, can address gender disparities, particularly for principals, by encouraging and providing more opportunities for female teachers to become civil servants and principals.</li> <li>Districts and provinces to experiment with ways to increase accountability through incentives.</li> </ul>
Manage for learning	8. Strengthen accountability mechanisms through better data tracking and verification	MoEC MoRA MoHA Parents (school committees) Teachers Schools Districts Provinces	<ul> <li>MoHA and MoEC develop a simple education quality index drawing on improved minimum service standards, NES, and student learning measures.</li> <li>MoEC and MoRA require districts to evaluate student learning at primary level, support them on strategies to improve learning.</li> <li>Districts to communicate results to parents and teachers, support schools and teachers to remediate gaps.</li> <li>Schools use results to improve teacher practices, mobilize community support, and provide additional services for students.</li> <li>MoEC to support schools and provinces to improve data reporting; MoHA to mandate independent verification of data, with financial sanctions for misreporting.</li> </ul>
	9. Support existing institutions to improve service delivery	MoEC MoRA MoHA Districts Provinces Teachers Principal and teacher working groups School committees LPMP LPTKs	<ul> <li>Support school improvement and enhance student outcomes by building the capacity of existing actors such as working groups, school committees.</li> <li>Incentivize and hold accountable districts through performance-based budgeting and capacity building and support.</li> <li>Improve performance-based incentive programs such as BOS Kinerja to include transparent, observable characteristics linked to student learning and measure improvement in performance.</li> </ul>

### TABLE 7.2 Summary of key recommendations (continued)

What is the need?	Recommendation	Who	How
Increase learning for employment	10. Expand access to and improve the quality and relevance of TVET	MoM MoEC MoF BAPPENAS	<ul> <li>Establish a Skills Development Council with strong participation of the private sector.</li> <li>Improve the availability and accuracy of information on labor market needs and guide the overall skills development system with strong participation of the private sector.</li> <li>MoM to lead the development of competency frameworks that reflect private sector needs, develop labor market information system.</li> <li>TVET institutions to increase their capacity to deliver graduates with these competencies and to meet rising demand.</li> <li>Balance expansion with robust accountability mechanisms.</li> <li>Ensure that TVET institutions have the right infrastructure and teachers to deliver the competency frameworks.</li> <li>Expand the features and use of SISNAKER for an improved labor market information system to monitor the evolution of labor demand and supply, and also to provide information to job-seekers on occupations.</li> <li>MoEC can expand the revitalization of the SMK program subject to an evaluation of current results.</li> <li>MoF can establish direct financing to accreditation agencies of universities and TVET institutions to assure the independence and capacity to undertake accreditation.</li> <li>MoEC can increase the internationalization of the higher education institutions to provide services to Indonesian students across the country.</li> </ul>
Raise the performance of tertiary education	11. Improve the quality, relevance, and equity of the tertiary education sector	MoEC MoRA Tertiary education institutions both public and private BAN–PT	<ul> <li>Increase Indonesia's tertiary enrollments and improve equity by eliminating barriers to enrollment for underrepresented groups, increasing graduation levels for underrepresented groups through non-monetary support such as outreach and retention programs and expanding enrollment at the Open University.</li> <li>Directorate General of Higher Education (DGHE) of MoEC and the Directorate of Religious Higher Education (DRHE) of MoRA can articulate and implement a proactive talent development strategy for academic staff.</li> <li>DGHE and DRHE can incentivize the diversification of financial resources for public institutions, and introduce performance-based financial allocations to improve quality and relevance.</li> <li>Strengthen research and technology transfers through public-private partnerships, university-industry linkages and internationalization of curriculum and student enrollments.</li> <li>Modernize governance and management, including a more flexible regulatory framework for high-performing institutions to innovate.</li> <li>MoEC and MoRA to consolidate small, low-quality private universities, improve the quality of tertiary institutions; and develop a joint comprehensive management information system.</li> <li>MoF to finance accreditation agencies to assure independence and capacity to undertake accreditation.</li> </ul>
Increase education system resilience to external shocks	12. As a part of the COVID-19 response and recovery, strengthen the system for future shocks and stresses	MoEC MoRA Tertiary institutions Subnational governments	<ul> <li>Improve distance-learning hardware and software.</li> <li>Improve teacher, student, and institutional capacity to utilize distance-learning technology.</li> <li>Invest in secure data and communications capabilities.</li> <li>All new infrastructure investments to maximize energy efficiency and hazard-resistance.</li> </ul>

#### TABLE 7.2 Summary of key recommendations (continued)

BAN-PT = Badan Akreditasi Nasional Perguruan Tinggi, BAPPENAS = Ministry of National Development Planning, BOP-PAUD = Bantuan Operasional Pendidikan, or School Operational Assistance Grant from subnational government, BOS = Bantuan Operasional Sekolah, School Operational Assistance, ECED = early childhood education and development, LPMP = Lembaga Penjaminan Mutu Pendidikan, or Education Quality Assurance, LPTK = Lembaga Pendidikan Tenaga Keguruan, or Teacher Training Institutes, MoEC = Ministry of Education and Culture, MoF = Ministry of Finance, MoHA = Ministry of Home Affairs, MoM = Ministry of Manpower, MoRA = Ministry of Religious Affairs, MoSA = Ministry of Social Affairs, MoV = Ministry of Villages, NES = National Education Standards, TVET = technical and vocational education and training.

#### Students

It is essential that students come to school prepared to learn. This includes a good start for all children, as captured in Recommendation 2: *Make quality early childhood education accessible to all*. This would include making at least two years of quality early childhood education compulsory and accessible to all. There is a need to strengthen the coverage and quality of ECED by ensuring sufficient funding, and developing a roadmap to achieve universal ECED enrollment by 2030. ECED expansion could also be incentivized, especially in areas with no ECED services, through grants for new or additional services and by encouraging better collaboration among stakeholders.

Ensuring that education is equitable and supports the most vulnerable students is addressed through three recommendations.

Recommendation 3: Act to guarantee equitable access to good quality education and learning by children most excluded from the system. It is important to ensure that the vision and mission of the Ministry of Education and Culture, and the policies that flow from it, are always focused on ensuring that ALL children have equitable access to good quality schooling and opportunities to learn. It is important to consider different levels and to identify districts, communities, families, and children who continue to be excluded from school and therefore disadvantaged in their learning. To understand these factors, it is useful to analyze the reasons for this exclusion and inequity and to develop both national and local policies and school practices to overcome them.

Ensuring that learners do not fall behind is addressed in Recommendation 4: Act to improve learning outcomes of the lowest performers. This could involve making help for low-performing districts, schools, and students a priority. High-quality national student assessments would diagnose (identify and explain) low performance issues and inform instruction to enhance performance. Teachers would routinely assess performance daily through formative evaluation approaches. And learning data would be harnessed to identify lowest-performing schools and provide extra assistance to them.

Recommendation 5: Ensure that all students, including those with disabilities, succeed. This requires identifying children with disabilities as soon as possible so that early childhood interventions can be provided; and training teachers to work with children who have disabilities—and include them in learning. It also requires assessing to what extent in the local context (if any) disparities in achievement are linked to gender, school violence, early marriage, language interference, and socioeconomic status. And it requires that small rural and remote schools can provide quality education.

#### Teachers

Learning must be guided and supported, with more emphasis on helping teachers improve. Recommendation 6a: Improve the quality of preservice institutions and the candidates that enter them, Recommendation 6b: Recruit the best teacher candidates and distribute them effectively, and Recommendation 7: Improve professional development and calibrate incentives address the stock, flow, and quality of teachers. Recommendation 6a involves improving preservice institutions through better licensing and accreditation as well as through strengthening targeted technical and financial support-especially those in Eastern areas-to stimulate improvements in quality and increases in accreditation ratings. Also important is being more selective by enrolling fewer numbers and ensuring that they are of higher quality. Recommendations 6b and 7 involve improving the caliber of teaching, including through better hiring, placement, and continued professional development. There is a need to ensure enough highly gualified teachers in the right locations, particularly in rural, remote, and low-performing schools. They should be continuously supported in ways that improve their skills, with a particular emphasis on induction of new teachers and effective methods of professional development such as the teacher working groups. It would also be beneficial to experiment with ways to increase teacher accountability through incentives.

#### Management and inputs

The management and inputs of the system must also be driven toward delivering learning. Recommendation 8 is Strengthen accountability mechanisms through better data tracking and verification, where stakeholders and decision-makers are held accountable for improving education quality. Data are critical for accountability, and there is a need to keep better track of education trends by improving MoEC and MoRA databases. The proposed Education Quality Index would serve the purposes of measuring for accountability and directing assistance to lagging districts and schools. Recommendation 9: Support existing institutions to improve service delivery includes ensuring that Indonesia can build on its reforms to improve learning guality. At the school level, this involves supporting school improvements and enhancing student outcomes using the building blocks already in place-principal and teacher working groups,

school committees, education quality assurance institutes (LPMP) and training colleges (LPTKs), and the province-level education offices and their supervisors. All these building blocks need further capacity development. The resulting aligned "architecture" of support can be directly involved in improving teacher performance. At the district level, it requires making staff more capable and accountable for the work they do, including clarifying the role of every Dinas unit in enhancing learning outcomes and requiring Dinas staff to remain in their positions following capacity-strengthening activities. The financial aspect involves linking financial transfers more explicitly to quality.

#### Learning and promoting skills for the labor market

A key goal of education is the development of skills that can be used after leaving school. This can come in the form of many tracks. For technical and vocational skills, Recommendation 10: Expand access and improve the quality and relevance of TVET recognizes the importance of expanding technical and vocational education and training to meet the rising demand, but also balancing the expansion with robust accountability mechanisms. For TVET to meet the demands of the labor market, a critical step is to improve information of labor market needs and guide the overall skill development system with strong participation from the private sector. For the tertiary system, Recommendation 11: Improve the quality, relevance, and equity of the tertiary education sector, areas to address include increasing Indonesia's tertiary enrollment levels and improving equity, improving quality and relevance, strengthening research and technology transfer, modernizing governance and management, and defining a sustainable financing strategy.

Indonesia has made great progress on its journey to build human capital, but these achievements are threatened on multiple fronts. Climate change is a driver of extreme weather events that can lead to extended school closures and sometimes loss of life. Earthquakes and other natural disasters can threaten education service delivery, sometimes across large areas for extended periods of time. Other threats such as disease can challenge entire economies and societies as we have seen with the current pandemic. Indonesia can support human capital development by increasing the resilience of the education system to shocks, for example by securing data systems, improving distance teaching and learning capacities, and improving infrastructure for energy efficiency and against hazards. Increasing the resilience of the system is challenging and will require investment, but it is necessary to

help secure the future of learning. Thus, Recommendation 12: As a part of the COVID–19 response and recovery, strengthen the system for future shocks and stresses.

#### **Common systemwide themes**

The goals and recommendations also contain common themes, contextual considerations, and approaches.

#### Coordination among multiple actors

It is critical to consider the multiple actors and how they can coordinate and work toward the common goals. No recommendation can be achieved with actors working in isolation and possibly in different directions. It is important to work toward alignment and a coherent vision. With Indonesia's complex system and multiple actors, this takes on particular relevance. Just as the framework above shows how all actors in the system must work toward supporting the system and directing key elements —teachers, students, management, and inputs toward learning, the recommendations consider the who, what, and how of implementation (as laid out in detail in the chapters themselves).

#### Equity as a key consideration and driver for directing support to those who need it most

There is a common theme in the chapters and recommendations of supporting the disadvantaged —those with disabilities, those lagging or underperforming, or those with less equitable access. For each element of the system, it is important to consider aspects of equity and ensure support for those who are most vulnerable or lagging, whether students, schools, districts, or provinces.

#### Measurement for understanding, decisionmaking, and directing

Measurement can play a role in assessing the situation, determining progress, directing support and resources, and putting in place mechanisms to encourage progress and achievement. Indonesia does collect a good amount of data, but the subsequent steps for effective analysis and decisions based on that analysis are critical. In some cases, the measures can be used for accountability. But to avoid tainting or distorting the results, they should not be explicitly tied to accountability.

#### Political economy considerations

In considering the who, what, and how aspects for the goals and recommendations, the political economy dimension is important. Sometimes the best solution from a technical perspective is not feasible from a political perspective, so implementation constraints and political economy factors must be considered. Indonesia's complex system requires careful consideration of what is feasible.

#### **Looking forward**

New leadership has enacted major reforms in a short time period. The ministries of MoEC and MoRA with support from MoH and MoHA have moved quickly to support learning while schools are closed due to COVID-19 (Joint Decree on Guidance Learning Implementation during Covid-19 Pandemic. 2020). The Minister of Education and Culture—along with the cabinet and under the guidance of the president—has enacted or is planning "Freedom to Learn" reforms across the following areas:

#### Assessment

- USBN (graduation exam) abolished.
- National Exam (UN) abolished.
- Teacher's Lesson Plan no longer required.
- A Minimum Competency Assessment (AKM) that measures school performance based on student literacy and numeracy, the core competencies for international tests such as PISA, TIMSS, and PIRLS proposed. This would include a Character and Learning Environment Survey to measure noncognitive aspects to get a holistic picture of the quality of education.

#### Schools

- Implementing collaboration and coaching between schools (SD-SMP-SMA, informal education): Collaboration and coaching between schools through Sekolah Penggerak (mover schools), peer learning programs, joint administration management, and value-based informal education. This includes a pilot project with 100 Sekolah Penggerak or mover schools in supportive provinces, to spearhead the Freedom to Learn initiative through mentoring, peer support, and technology utilization in the school ecosystem. The Sekolah Penggerak will be a catalyst to transform the surrounding schools and become a center for teacher training.
- Transferring BOS directly to schools from MoF.
- Increasing the proportion of BOS that can be used to support teacher salaries.
- Increasing the value of BOS.
- Improving BOS reporting.
- Adapting school zoning to be more flexible.
- Building classrooms and learning spaces in the future that are creative, collaborative, and experience-based, and supported by technology but are also safe and inclusive.

#### Teachers

Improving the quality of teachers and school principals by improving recruitment systems, improving the quality of training, and assessment, and developing community-learning platforms. This includes Guru Penggerak, a new generation of school teachers provided with additional training and on-the-job coaching, who will serve as a resource within their school and area.

#### **Systems**

- Building a technology platform to encourage stakeholder collaboration, and improving learning effectiveness through a flexible approach, and upgrading the National Education Platform in five years, starting with the BOS marketplace.
- Planning for supporting technological facilities and infrastructure.
- Adjusting curriculum, pedagogy, and assessment methods to nurture appropriate competencies for future generations. This includes a simplified, flexible, and competency-oriented curriculum as well as personalization and segmentation of learning based on periodic assessments.
- Increasing collaboration with local governments to ensure equitable distribution and working with local governments through a personal and consultative approach and meritocracy.
- Providing incentives for private sector contributions and collaboration in the field of education through CSR funds, tax incentives, public private partnerships, autonomy, and greater profits.
- Increasing credibility and improving accreditation mechanisms through data-based and voluntary processes, increased community involvement, and making global comparisons.

#### **Tertiary education**

- Reduce the role of central government in creating new degree programs. Accreditation valid for 10 years, and can be done internationally.
- Autonomy status granted on request.
- Student flexibility in study programs.
- Industrial ownership and autonomy of vocational education promoted. Industry or associations are involved in curriculum development, learning is encouraged, and education is funded through private sector contributions or CSR.
- A vocational education collaboration model linked to industry and the world of work; a flexible pathway between secondary and higher education.
- A link and match technology platform as a student career planning tool, developed by stakeholders—industry, professional associations, and so on—and facilitated by the government.

This incomplete list is still evolving, and aligns with many of the recommendations in the preceding pages. Most of the changes to date have been within the purview of MoEC, but it is expected that further changes will be enacted in cooperation with MoRA, MoHA, MoF, and other ministries and local governments.

To achieve their aims, these reforms need to be implemented and sustained over time. This requires that the new policies be embraced at the district and province level and supported fully by MoEC and other ministries. Not meeting these challenges has hindered the impact of earlier reforms.

#### **Concluding statement**

The Indonesian education system has a great deal of promise. To capitalize on that promise, student learning should be a focus and underlying driver in improving the country's education system. This report has focused on learning and how, for every aspect and at every level of Indonesia's education system, the question should be asked: What can the government do to shift the focus to improve learning? Looking ahead, improving learning is about the context and how policies and interventions are implemented. Large improvements in Indonesia's human capital depend on shifting how the education system operates, specifically aligning and strengthening the capacities, effectiveness, autonomy, and accountability of teachers, principals, and local, regional, and national actors and institutions.

#### References

- Azevedo, P.J., G. Koen, D. Goldemberg, A. Hasan, and S.A. Iqbal. 2020. "Country Tool for Simulating COVID– 19 Impacts on Learning and Schooling Outcomes, Version 5." World Bank, Washington DC.
- Hadi, Aulia. 2018. "Bridging Indonesia's Digital Divide: Rural-Urban Linkages?" *Jurnal Ilmu Sosial dan Ilmu Politik.* 22 (17).

- Rogers, H. and S. Sabarwal. 2020. The COVID–19 Pandemic: Shocks to Education and Policy Responses. Washington, DC: World Bank. https://openknowledge. worldbank.org/handle/10986/33696.
- UNESCO (United Nations Educational, Scientific, and Cultural Organization). 2004. *Early Education Financing: What is Useful to Know?* UNESCO Policy Brief on Early Childhood, No. 23, May. https://unesdoc.unesco.org/ ark:/48223/pf0000137412.
- World Bank. 2018a. Growing Smarter: Learning and Equitable Development in East Asia and Pacific. Washington, DC: World Bank. doi:10.1596/978–1-4648–1261–3.
- World Bank. 2018b. World Development Report 2018: Learning to Realize Education's Promise. Washington, DC: World Bank. https://www.worldbank.org/en/ publication/wdr2018.
- World Bank. Forthcoming. *High Frequency Household Surveys 2020*. Washington, DC: World Bank.
- Wong, A. 2017. "Insights from East Asia's High-Performing Education Systems: Leadership, Pragmatism, and Continuous Improvement." Background paper for Growing Smarter: Learning and Equitable Development in East Asia and Pacific. Washington, DC: World Bank.
- Yarrow, N., E. Masood, and R. Afkar. 2020. Estimated Impacts of COVID-19 on Learning and Earning in Indonesia: How to Turn the Tide. Jakarta: World Bank. http://documents1.worldbank.org/curated/en/18465 1597383628008/pdf/Main-Report.pdf.
- Yarrow, N., E. Masood, and R. Afkar. Forthcoming. *Measuring the Quality of Education Services in Indonesia*. Jakarta: World Bank.

#### Government laws and regulations

- Joint Decree on Guidance Learning Implementation during Covid-19 Pandemic. 2020. https://ditpdpontren. kemenag.go.id/web/wp-content/uploads/2020/06/ SKB-PEMBELAJARAN-TA-BARU-MASA-COVID-19. pdf.
- MoEC Circular Letter No. 4/2020 on Implementation of Education Activities in the COVID-19 Emergency Period. https://jdih.kemdikbud.go.id/arsip/SE%20Menteri%20 Nomor%204%20Tahun%202020%20cap.pdf.

## Notes

- 1. State Address, August 2019.
- Indonesia Country Note: Programme for International Student Assessment: Results from 2018: https://www.oecd.org/pisa/ publications/PISA2018\_CN\_IDN.pdf.
- 3. MoRA constitutes 15 percent of the pretertiary education system and is not decentralized.
- 4. World Bank based on MoEC data 2019. https://hasilun.puspendik .kemdikbud.go.id.
- Ministry of Education and Culture statement, December 2019, https://www.kemdikbud.go.id/main/blog/2019/12/ mendikbud-tetapkan-empat-pokok-kebijakan-pendidikan -merdeka-belajar.
- 6. http://lldikti12.ristekdikti.go.id/2016/12/15/mayoritas-lptk -belum-terakreditasi.html.
- For a study report on working groups for teachers, principals, and school supervisors as a forum and support network for continuing professional development (June 2019), INO-VASI with MoEC did a case study on working groups in West Nusa Tenggara highlighting the issues and showing they have improved learning outcomes. https://www.inovasi.or.id/ wp-content/uploads/2019/07/19\_07\_19-INOVASI-KKG-KKKS -Study-ENG.pdf.
- 8. The higher education function of the Ministry of Research, Technology, and Higher Education (MoRTHE) was transferred to the Ministry of Education and Culture in October 2019.
- 9. Minister of Kemendesa said in a virtual conference that the Villages Fund could be used to provide free internet. https:// republika.co.id/berita/qej3iy335/mendes-dana-desa-bisa -untuk-penyediaan-internet-gratis. In Kominfo, village heads were urged to optimize the village fund to building internet infrastructure. https://kominfo.go.id/content/detail/11946/kepala -desa-diimbau-optimalkan-dana-desa-untuk-bangun -infrastruktur-internet/0/sorotan\_media. In Central Java a village head in Central Java found a way to solve the internet quota problem. https://www.beritasatu.com/jaja-suteja/ nasional/660479/pakai-dana-desa-kades-di-jateng-atasi -problem-kuota-dengan-internet-gratis. In Bengkulu, the regent of South Bengkulu asked all village heads to install internet connections in all villages with funding from village fund. https:// bengkuluekspress.com/optimalisasi-dd-pasang-internet-desa/.
- https://indonesia.unfpa.org/sites/default/files/pub-pdf/ Proyeksi%20Penduduk%202015–2045\_.pdf.
- Based on PPP measured GDP, purchasing power parity (PPP) measures prices of different areas using a common good or goods to contrast the real purchasing power between different currencies. PPP exchange rates are widely used when comparing GDPs from different countries.
- New World Bank Country Classifications Income Level 2020– 2021. https://blogs.worldbank.org/opendata/new-world-bank -country-classifications-income-level-2020-2021.
- Macro Poverty Outlook, June 8, 2020 update, with the Indonesia value imputed: https://www.worldbank.org/en/publication/ macro-poverty-outlook.
- Education funding of 20 percent of the national budget is mandatory based on Law No. 1945, chapter 31 point 4 and Law No. 20/2003 chapter 49 on National Education System. Average national education spending as a share of national spending from 2008 to 2018 was 18.5 percent (World Bank COFIS Database).
- 15. According to UNESCO Institute for Statistics, Indonesia's expenditure on education as a percent of GDP was 3.6 percent, lower than 4.7 percent in Malaysia, 4.3 percent in Vietnam, and 4.1 percent in Thailand.

- 16. Approximately 61 percent of those who have completed secondary education are in what is classified as unskilled work and have an income that is about half of those in skilled work. Skilled workers on average had a monthly income Rp 1,744,549, while unskilled workers have a monthly income of Rp 913,767.
- 17. World Bank estimates based on data from PISA 2003 and 2018 (OECD 2004 and OECD 2019)
- 18. Based on projections of the 2015 population survey (SUPAS), the population of primary age children has already begun to decline. However, the rate of decline is slow; the number of Indonesian children age 5–9 in 2018 is estimated at 22,043,000, while the number of children age 5–9 in 2025 is estimated at 21,906,000.
- The higher education function of the Ministry of Research, Technology, and Higher Education (MoRTHE) was transferred to the Ministry of Education and Culture in October 2019.
- 20. This proportion includes the general allocation fund (DAU), with an estimated amount going to education. The amount going to education from this unconditional grant is estimated by MoF and does not represent actual reported expenditures by subnational governments, because actual reported expenditure amounts by subnational governments in education are not tracked.
- 21. MoRA, a centralized ministry, was allocated Rp 52 trillion for general education in 2019.
- 22. A specific amount of the DAU is allocated by the Ministry of Finance (MoF) for education; however, the amount of DAU actually spent on education by subnational governments is estimated (for allocation not execution).
- 23. MoRA constitutes 15 percent of the pretertiary education system and is not decentralized.
- 24. https://data.worldbank.org/indicator/SE.SEC.NENR ?locations=ID&view=chart.
- 25. Rapid Assessment of the Indonesian PISA 2018 results.
- 26. In partnership with the Ministry of Education and Culture (MoEC), the Ministry of Religious Affairs (MoRA), and the United States Agency for International Development (USAID/ Indonesia), RTI International administered the two surveys to 4,812 grade 2 students, equally divided between boys and girls and equally allocated across the four proposed "regions" of (1) Sumatra and its adjacent islands; (2) Java and Bali; (3) Kalimantan, Sulawesi, and its adjacent islands; and (4) the "MNP" region, consisting of Maluku, East Nusa Tenggara (Nusa Tenggara Timur [NTT]), West Nusa Tenggara (Nusa Tenggara Barat [NTB]), and Papua islands (Eastern Region).
- 27. An example is the 2013 curriculum reform, hastily rolled out, then rolled back by the subsequent administration.
- 28. https://www.inovasi.or.id/wp-content/uploads/2019/10/Policy -Brief-7-Literacy-2011–2019.pdf.
- 29. For the purposes of the Flagship, the term early childhood education and development (ECED) will be used to represent PAUD.
- 30. The term PAUD (Pendidikan Anak Usia Dini) is commonly used by MoEC to refer to early childhood education and development (ECED) as a sector, as well as a specific service that delivers childcare and early learning services to children ages 0–6 in Indonesia. This report uses the term "ECED" when referring to the former, and "PAUD service" when referring to the latter. It should be noted that many countries and development agencies in the world have expanded the age range of early childhood to cover 0–8 years or age—or even conception to 8 years—to include care of pregnant women.
- 31. It established a multiagency task force to facilitate coordination in implementing HI-ECD. At the national level, the task force

is chaired by the Coordinating Ministry for People's Welfare (Kemenkokesra)—this ministry was abolished in 2014 and its duties transferred to Kemenko PMK—and jointly cochaired by the National Planning Agency (BAPPENAS) and the Ministry of Home Affairs. The membership comprises eight ministries including both MoEC and MoRA. In 2019, the Coordinating Ministry of Human Development and Culture (Kemenko PMK) issued Ministerial Regulation No. 1/2019 about Sub-Task Forces to reassure support to the HI-ECD multiagency task force and to implement the Presidential Regulation No. 60/2013. In Indonesian, HI-ECD is also called PAUD, but the "P" stands for "pengembangan" (development) rather than "pendidikan" (education) as used by MoEC.

- 32. MoEC issued the Ministerial Regulation No. 137/2014 on the National Standards for Early Childhood Education and Ministerial Regulation No. 146/2014 on the 2013 Curriculum for Early Childhood Education.
- https://www.paud.id/2015/03/download-permendikbud-137 -tahun-2014-standar-paud.html; https://luk.staff.ugm.ac.id/atur /bsnp/Permendikbud137–2014StandarNasionalPAUD.pdf.
- http://anggunpaud.kemdikbud.go.id/images/upload/images/ Kurikulum/Permendikbud\_146\_Tahun\_2014.pdf.
- 35. The education Ministerial Regulation No. 32/2018 elaborated on the government regulation, including specifying that districts/municipalities provide basic kits—per child, per semester, and in new condition—to preschools that include 6 drawing books and coloring packs of 12 colors.
- 36. The government of Indonesia is yet to issue a specific regulation to focus on early learning and stimulation for younger children, especially children ages 0–2 at risk of stunting.
- 37. Presidential Regulation No. 60/2013 allowed districts/cities and provinces to form local multi-sector HI-ECD task forces to coordinate implementation of early childhood development. In contrast, the mandatory public service of early childhood education for children ages 5–6 was regulated only recently in 2018 (Government Regulation No. 2/2018).
- SEAMEO CECCEP and UNESCO Bangkok, Regional Guidelines on Innovative Financing Mechanisms and Partnerships for Early Childhood Care and Education, 2019.
- 39. Based on information from the Ministry of Trade (http://statisf tik.kemendag.go.id/gross-domestic-product), the 2018 GDP was Rp 14,837 trillion. With Rp 444.1 trillion of education funding, % GDP on education was 2.99 percent. ECED expenditure by proxy of budget allocation at MoEC was Rp 5.87 trillion which made % GDP on ECED to be 0.0396 percent, in education sector alone. The Rp 5.87 trillion was calculated from Rp 4.07 non-physical, special allocation funds (DAK Non-Fisik) and Rp 1.8 trillion of ECED funds. Data on 2018 education funding and ECED funding: https://www.kemdikbud.go. id/main/index.php/files/large/9e8cc44fd989632 and https:// banpaudpnf.kemdikbud.go.id/upload/download-center/ Paparan%20Dirjen%20PAUD%20DIKMAS%20-Kebijakan%20 dan%20Mekanism\_1552711148.pdf.
- 40. Early Childhood Education and Development in Indonesia: An Assessment of Policies Using SABER (World Bank, 2015).http:// wbgfiles.worldbank.org/documents/hdn/ed/saber/supporting\_ doc/CountryReports/ECD/SABER\_ECD\_Indonesia.pdf.
- 41. Regional Guidelines on Innovative Financing Mechanisms and Partnerships for Early Childhood Care and Education (ECCE), retrieved from https://unesdoc.unesco.org/ark:/48223/ pf0000371189. The 10 percent figure was proposed by Zubairi and Rose (2017) of the REAL Centre, University of Cambridge, in Bright and Early: How financing pre-primary education gives every child a fair start in life—Moving towards quality early childhood development for all.
- 42. https://banpaudpnf.kemdikbud.go.id/upload/download -center/Paparan%20Dirjen%20PAUD%20DIKMAS%20 -Kebijakan%20dan%20Mekanism\_1552711148.pdf.
- Data sources: ECED allocations from monitoring reports by the ECED Frontline Pilot and from RENJA Dinas Pendidikan;

Education Funds and APBD per district analyzed from Neraca Pendidikan Daerah NPD by MoEC at https://npd.kemdikbud. go.id/.

- 44. Ministerial Regulation No. 137/2014 in Article 37 of Chapter 10 on the Financing Standard explained that operational funding covers salaries and entitlements of teachers and education personnel, organization of learning programs; procurement and maintenance of facilities and infrastructure, and human resource development. Personal funding covers education costs spent for children participating in the learning process. Preschool accreditation includes checking evidence of implementation of the eight PAUD National Standards, including the financing standard—per Government Regulation No. 13/2015, Article 1 (1.11, 1.15, and 1.32), and the 2019 Accreditation instrument in SISPENA 2.0.
- 45. As per Ministerial Regulation No. 137/2014 issued by MoEC.
- 46. In 2019, DAK Fisik or Physical Special Allocation Funds are subject to Presidential Regulations (such as PERPRES 88/2019). Ministerial Regulations by MoEC elaborated further on the type of DAK Fisik (such as MoEC Regulation No. 1/2019, Attachment 2 on DAK Fisik PAUD) to include construction, reconstruction, and rehabilitation of classrooms. But, until 2019, construction of new preschool buildings and premises was funded by Bantuan Pemerintah (government assistance) managed by line ministries (in this case MoEC). In 2019, such government assistance was limited to disadvantaged, frontline, and remote areas of Indonesia (PerDirjen PAUD Dikmas 36/2019, based on Permenkeu 173/PMK.05/2016).
- 47. Up to 2016, Ministerial Regulations on BOP-PAUD issued by MoEC prioritized children ages 4-6 (MoEC Regulation No. 2/2016, Attachment 1 on Technical Guidelines, Section E). Prioritizing ages 4-6 allowed any remaining balance of BOP-PAUD to be used by districts/cities to support younger children below age 4, based on Article 3.3 of MoEC Regulation No. 2/2016. A year later, MoEC issued the Ministerial Regulation No. 4/2017 in which the prioritization of children ages 4-6 as BOP-PAUD recipients was omitted. Ever since, BOP-PAUD has targeted all children ages 0-6 as long as they are registered in DAPODIK (MoEC's EMIS). The recent Ministerial Regulation No. 4/2019, Article 1.3 and Article 1.4, recognized children ages 0-6 serviced by PAUD (early childhood education), by a definition of what PAUD is, as recipients of BOP-PAUD. This recognition is in line with the mandate of the Education Law (Sisdiknas 20/2003) for PAUD to service children ages 0-6.
- As mandated by Education Law No. 20/2003 Chapter 49 item
   https://kelembagaan.ristekdikti.go.id/wp-content/uploads/ 2016/08/UU\_no\_20\_th\_2003.pdf.
- 49. https://kemsos.go.id/program-keluarga-harapan-pkh.
- 50. https://indonesiapintar.kemdikbud.go.id/.
- 51. The ACDP 033 report on ECCE policy options and roadmap (ACDP 2017, p. 13) suggested that the government start analysis of current costs and ECED financing and calculate the required budget to achieve universal preprimary enrollment by 2030. Similarly, the World Bank report on ECED in Indonesia (2015, p. 41) suggested using formulas (such as capitation with possible targeting to the most vulnerable) to inform ECED budgeting.
- 52. https://referensi.data.kemdikbud.go.id/index21.php.
- 53. Equivalent data not available for formal PAUD, i.e. kindergarten.
- http://anggunpaud.kemdikbud.go.id/index.php/berita/indexe /20200515164843/40-Orangtua-Murid-PAUD-Kesulitan-Bayar-Uang-Sekolah and https://mediaindonesia.com/read/ detail/312130-survei-kemendikbud-gaji-49-guru-paud -terkendala-selama-pandemi#.
- 55. In the text that follows, "parent" refers also to primary caregivers who are most likely to be older members of the child's extended family.
- 56. https://elibrary.worldbank.org/doi/pdf/10.1596/978-1 -4648-0621-6.

- 57. Data extracted from UIS.Stat on May 15, 2020, 09:59 UTC (GMT).
- MoEC's DAPODIK estimates the actual preprimary enrolment rate for 3–6 year olds at 38.8 for 2018, while SUSENAS estimates it at 37.3.
- 59. See also World Bank (2013).
- 60. The official age of entry for grade 1 is 7—unusual in the region —and many exceptions make possible a large enrollment of 6 year olds (and even 5 year olds) in grade 1.
- 61. This underage enrollment also inflates the data used to measure SDG indicator 4.2.2—the participation rate in organized learning (one year before the official primary age), by sex—by including in these data children 5–6 years of age and already enrolled in primary school.
- 62. The high GER for Yogyakarta—despite ranking 26 out of 34 provinces in terms of gross regional product per capita (https://en.wikipedia.org/wiki/List\_of\_Indonesian\_provinces\_by\_GRP\_per\_capita#Per\_Capita\_Data)—may relate to the fact that is it is renowned as a city of education with a large student population and dozens of schools and universities.
- 63. Equivalent data is not available for teachers in the nonformal ECE.
- 64. In terms of the longer-term impact of access to playgroup services by age of enrollment, Hasan et al. (2019) find that the younger cohort enrolled at age 3 had substantially higher scores in early grades in primary school relative to the older cohort enrolled at age 4.
- 65. See Indonesian Economic Quarterly, December 2017.
- 66. The World Bank's report on ECED in Indonesia (2015) indicated that 71 percent of all public education spending on ECED was provided by districts. Provinces were funding 3 percent, and the central government 26 percent. The report also noted a decline in the share of central government funding from around 4 percent in 2011 to around 2 percent in 2013.
- 67. https://openknowledge.worldbank.org/bitstream/handle/ 10986/5988/WDR%202006%20-%20English.pdf.
- Indonesia Country Note: Programme for International Student Assessment: Results from 2018: https://www.oecd.org/pisa/ publications/PISA2018\_CN\_IDN.pdf.
- 69. Under the KIP program, all children of school going age (ages 6–21) whose families are part of the Family Welfare program automatically receive a KIP and benefit from the program if they are registered in a school (either private or public and at all levels, including Islamic schools and boarding schools), part of a nonformal education study group (study packages A/B/C), or enrolled in a training course. This includes children of school-going age who are no longer in school, to encourage them to resume their education. The program involves the co-operation of the Ministry of Education and Culture, the Ministry of Social Affairs, and the Ministry of Religious Affairs. Children in primary education, Rp. 750,000; and upper secondary education, Rp 1,000,000. In 2018, almost 10 trillion rupiah (about US\$700 million) were spent on the program.
- 70. https://www.unicef-irc.org/publications/pdf/IWP3%20-%20 Towards%20Inclusive%20Education.pdf.
- 71. This is at least partly due to different definitions of what represents a "countable" disability, with Indonesia's data focusing on "severe" disabilities.
- 72. BPS 2019 data reported in "Teaching disabled: Inclusive education remains a challenge," Jakarta Post, December 9, 2019.
- 73. World Bank calculations using Population Census 1971 and SUSENAS 2017.
- 74. World Bank Indonesia 2018 PISA Brief.
- 75. http://timss2015.org/wp-content/uploads/filebase/full percent20pdfs/T15-International-Results-in-Mathematics -Grade-4.pdf.
- https://remoteschoolpapua.org/wp-content/uploads/ 2018/08/FINAL-REPORT-ACDP-023-April-25–2017.pdf.

- https://indonesiaatmelbourne.unimelb.edu.au/mother -tongue-language-education-improving-education-quality -while-preserving-culture/.
- 78. The INOVASI program is a partnership between the governments of Australia and Indonesia to understand how student learning outcomes in literacy and numeracy can be improved in diverse primary schools and districts across Indonesia. It works in a range of locations across Indonesia, using a locally focused approach to develop pilot activities and find out what does and does not work to improve student learning outcomes. https://www.inovasi.or.id/en/
- https://www.inovasi.or.id/wp-content/uploads/2019/10/Polilcy-Brief-2-Mother-Language-2011–2019.pdf.
- Indonesia 2014: The National Early Grade Reading Assessment (EGRA) and Snapshot of School Management Effectiveness (SSME) Survey Report of Findings. RTI International. https:// ierc-publicfiles.s3.amazonaws.com/public/resources/Indonesia\_EGRA\_SSME.pdf.
- 81. Analysis from UNICEF.
- A new tool—*Profil Belajar Siswa* (Special Needs Student Profile)—has been introduced to improve data on disabilities in Indonesian schools. See http://pgdikmen.kemdikbud.go.id/ profil-belajar-siswa/.
- 83. https://www.inovasi.or.id/wp-content/uploads/2019/10/Policy -Brief-2-Mother-Language-2011–2019.pdf.
- 84. http://lldikti12.ristekdikti.go.id/2016/12/15/mayoritas-lptk -belum-terakreditasi.html.
- Bocoran Tes CPNS: 8.500 Soal, Disusun 100 Orang, 16 Januari 2020, CNBC Indonesia, retrieved from https://www. cnbcindonesia.com/news/20200116134439-4-130495/ bocoran-tes-cpns-8500-soal-disusun-100-orang/1.
- 86. For example, an Evaluation for Academic Performance team established by MoRTHE found that the quality of education in LPTKs had deteriorated significantly (http://sumberdaya. ristekdikti.go.id/index.php/2017/07/11/menyoal-pendidikan -calon-guru), and the School Teacher Group Federation Indor nesia (FSGI) said that many of LPTK graduates want to work in industry and not become teachers(https://tirto.id/fsgi-lulusan -lptk-cenderung-pilih-kerja-daripada-jadi-guru-dDHy).
- 87. https://www.antaranews.com/berita/1193559/laporan-pisa -2018-hanya-satu-persen-bekerja-seperti-mas-menteri.
- 88. The staffing formula allocates at least six grade teachers, a head teacher, a religion teacher, and a physical education teacher per school.
- 89. As a good practice example at subnational level, the Probolinggo District Government has shown success in their commitment to scale out multigrade pilots supported by INO-VASI to all small schools and to make significant efficiencies in teacher deployment. More information can be found on this in INOVASI multigrade policy brief: https://www.inovasi. or.id/wp-content/uploads/2019/10/Policy-Brief-4-Multi-grade -Teaching-2011–2019.pdf.
- 90. The 2007 BEP found, for example, that principals tend to focus on administrative aspects of the performance appraisal system and that neither they nor the supervisors are well prepared to accept responsibility for appraisal. Supervisors also tend to focus on administrative rather than quality issues. The report concluded that principals need support to develop the skills that will enable them to play their mandated role in managing teacher induction, probation, performance assessment and appraisals; mentoring, promoting and sanctioning of teachers; the dissemination of information about teacher performance to the local community and local government; and accountability of overall school performance. Similarly, supervisors need support in developing the competencies required of them; e.g., knowledge of curriculum subjects (especially those included in new curricula) and skills in teacher performance assessment and support.
- 91. Based on PP 19/2017 the principal has the core tasks of managing the school, raising and controlling school finances (i.e.,

an entrepreneurial function), and supervising of teacher and education personnel.  $% \left( {{{\left[ {{{C_{\rm{s}}}} \right]}}_{\rm{s}}}} \right)$ 

- 92. Overview of Education and Cultural Data 2017/18.
- Kementerian Komunikasi dan Informatika. (January, 2020) Indonesia Signal Coverage. Presented at National ICT Council (Wantiknas) Focus Group Discussion, Jakarta.
- 94. See https://e-katalog.lkpp.go.id/.
- For full discussion see Bhardwaj, R., and Yarrow, N. with Calì, M. 2020. EdTech in Indonesia: Ready for Take-off? Jakarta: World Bank Group.
- 96. https://www.bps.go.id/pressrelease/2019/02/06/1619/ ekonomi-indonesia-2018-tumbuh-5–17-persen.html.
- 97. https://bos.kemdikbud.go.id/index.php/news/detail/5777fef8 bb1e14e0469913af.
- The Junior Secondary NES questionnaire contains 595 questions for school principals, 563 for supervisors, 547 questions for each teacher, 162 questions for students, and 188 questions for school committee (Kemendikbud 2018).
- 99. https://kemenag.go.id/file/dokumen/PP1905.pdf.
- 100. The pilot is under the Improving Dimensions of Teaching, Education Management, and Learning Environment (ID-TEMAN)

trust fund, financed by the Australian Government and World Bank. It aims to support the Indonesian Government to improve the effectiveness and efficiency of its education system at all levels (national, subnational and school), through analysis and technical assistance.

- 101. SISLATKERNAS is a mandate of Government Regulation No. 31/2006, that is also reiterated in the line ministries to govern its implementation in different sectors.
- 102. Only 2.4 percent of the population age 20–24 years old from the lowest economic quintile are enrolled in tertiary education (Susenas, 2018).
- 103. https://www.kemdikbud.go.id/main/blog/2019/12/mendikbud -tetapkan-empat-pokok-kebijakan-pendidikan-merdeka -belajar.
- 104. Early estimates of COVID-19 impact based on the latest available data from DAPODIK and EMIS, March 2020.
- 105. See for example: https://www.kemdikbud.go.id/main/blog/ 2020/07/tekankan-prinsip-keberlanjutan-mendikbud -sampaikan-target-merdeka-belajar-15-tahun-ke-depan.



