



The Promise of Education in Indonesia

OVERVIEW

Consultation Edition



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Contents

Abbreviations iii

Introduction 1

Education sector diagnostic 7

GOAL 1: Boost learning 12

RECOMMENDATION 1: Ensure that students reach at least minimum learning and development standards at each level of the system 14

GOAL 2: Provide learning for all 16

RECOMMENDATION 2: Act to improve learning outcomes of the lowest performers 18

GOAL 3: Start early 20

RECOMMENDATION 3: Make quality early childhood education accessible to all 23

GOAL 4: Serve everyone 24

RECOMMENDATION 4: Ensure that all students, including the disabled, succeed 27

GOAL 5: Improve teaching 28

RECOMMENDATION 5: Improve teacher recruitment, training, and professional development; experiment with incentives to increase accountability 30

GOAL 6: Increase learning for employment 32

RECOMMENDATION 6: Expand access and improve the quality of TVET and tertiary education 35

GOAL 7: Manage for performance 36

RECOMMENDATION 7: Strengthen accountability mechanisms 38

GOAL 8: Align institutions for learning 40

RECOMMENDATION 8: Support existing institutions to improve service delivery 44

Conclusion 45

Notes 46

References 47

Acknowledgments 49

Figures

Figure 1 Number of teachers and students in MoEC and MoRA institutions 3

Figure 2 Most provincial national exam scores miss the national passing grade 8

Figure 3 NES scores are not useful for diagnosing the causes of low learning 9

Figure 4 Indonesia compares poorly with neighbors such as Vietnam 13

Figure 5 The quality of preschools varies widely across settings, and average quality is low 22

Tables

Table 1 Summary of key recommendations 4

Table 2 Accreditation status of higher education institutions 34

Boxes

Box 1 The potential of technology in education 1

Box 2 Learning poverty and learning inequality 8

Box 3 Holding all actors to account 43

Abbreviations

3T	Border, remote, underdeveloped (Terdepan, Terluar, Tertinggal)
AKSI	Indonesian Student Competency Assessment (Asesmen Kompetensi Siswa Indonesia)
APBD	District-level funds
ASEAN	Association of Southeast Asian Nations
BAN-PAUD	National Accreditation Board for Early Childhood Education (Badan Akreditasi Nasional Pendidikan Anak Usia Dini)
BAN-PT	National Accreditation Board for Higher Education (Badan Akreditasi Nasional Perguruan Tinggi)
BAPPENAS	Ministry of National Development Planning
BLK	Working and Training Center (Balai Latihan Kerja)
BOP-PAUD	School Operational Assistance Grant from subnational government (Bantuan Operasional Pendidikan)
BOS	School Operational Assistance (Biaya Operasional Sekolah)
DAKs	Earmarked transfers
Dapodik	Data Pokok Pendidikan
DAU	General allocation fund
DINAS	Province-level education offices
ECED	Early childhood education and development
IQF	Indonesian Qualification Framework
IT	Information technology
KEMENPAN RB	Ministry of State Apparatus Utilization and Bureaucratic Reform (Kementerian Pendayagunaan Aparatur Negara dan Reformasi Birokrasi)
LKP	Course and Training Institutions (Lembaga Kursus Dan Pelatihan)
LPDP	Institute of Education Fund Management (Lembaga Pengelola Dana Pendidikan)
LPMP	Education Quality Assurance (Lembaga Penjaminan Mutu Pendidikan)
LPTKs	Teacher Training Institutes (Lembaga Pendidikan Tenaga Keguruan)
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
MSS	Minimum Service Standards
NES	National Education Standards
OECD	Organisation for Economic Co-operation and Development
PAUD	Early Childhood Education (Pendidikan Anak Usia Dini)
PAUD DAK	Special Allocation Fund (Pendidikan Anak Usia Dini Dana Alokasi Khusus)
PERDA	Regional Regulation (Peraturan Daerah)

PIP	Program Indonesia Pintar
PISA	Programme for International Student Assessment
PNS	Civil servant (Pegawai Negeri Sipil)
PPP	Purchasing power parity
RISKESDAS	National Health Survey
RPJMN	Medium-Term National Development Plan
SMA	Senior secondary schools (Sekolah Menengah Atas)
SMK	Vocational high schools (Sekolah Menengah Kejuruan)
SMP	Junior secondary schools (Sekolah Menengah Pertama)
STEM	Science, technology, engineering, and mathematics
SAKERNAS	National Labor Force Survey (Survei Angkatan Kerja Nasional)
Susenas	National Socioeconomic Survey (Survei Sosial Ekonomi Nasional)
SUPAS	Inter-census Population Survey (Survei Penduduk Antar Sensus)
TIMSS	Trends in International Mathematics and Science Study
TVET	Technical and vocational education and training
UN	National Exam (Ujian Nasional)
USBN	Locally designed and administered test



Introduction

Indonesia needs an education system to match its development goals

In 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. He highlighted that the key to this more prosperous future is developing human resources (State Address, August 2019). 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. For example, while science scores on international tests have been increasing, learning levels are still 19 points below those predicted by Indonesia’s income (World Bank 2018d). 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 harness the benefits of Indonesia’s demographic dividend.

Indonesia is large and growing rapidly

With 268 million people (2018), Indonesia comprises more than 17,000 islands, spread over 5,000 kilometers and spanning three time zones, strategically located between the Pacific and Indian oceans. A diverse country, Indonesia is the world’s most populous Muslim-majority nation. Resource-endowed and rapidly urbanizing, Indonesia is the world’s 10th largest economy and, if current growth rates are sustained, it is expected to become the 4th largest economy by 2050.¹ Its population has a median age of 28.8 years and is expected to exceed 318 million by 2045.² Indonesia spent approximately 20 percent of the national budget on education each year over the past decade.³

Strengthening human capital is crucial for Indonesia’s future success

Major policy reforms in previous decades have dramatically improved access to education, including raising the average years of education for individuals 20–25 years old from 6.95 years in 1987 to 10.94

BOX 1 The potential of technology in education

Indonesia started instituting computer-based testing in 9th and 12th grade national exams in 2014. Globally, this change often marks a turning point in the integration of technology into classrooms (Omidiyar 2019). However, the use of education technology (EdTech) is still only in the very early stages in Indonesia (Google-Temasek 2018).

EdTech start-up firms point to low levels of tech skills and a lack of incentives to adopt new approaches, leading to low levels of EdTech uptake among teachers and school leaders. This makes integration of technology difficult (Bahrdwaj and Yarrow forthcoming). Parents, teachers, and school leaders point to the fact that the benefits of Indonesian EdTech products remain unproven. This skepticism is prudent, since some EdTech products have no impact or even reduce student learning (J-PAL 2019).

Moving forward, Indonesian classrooms and teacher-training programs can pilot and gradually introduce proven technological aids to the teaching and learning process to enhance and support teachers and administrators, not to replace them. MoEC and MoRA can work with the private sector and other partners to evaluate EdTech products and identify low-cost, high-impact products that can be used increase equity in student learning outcomes at scale.

A popular approach to EdTech integration is large-scale tablet distribution, which runs the risk of being both costly and ineffective (e.g., American Institutes for Research 2015). Rather than rushing, it is essential to accompany hardware with high-quality curriculum-aligned software and teacher and administrator training as well as internet connectivity if EdTech is to improve teaching and learning equitably at scale.

years in 2018 (Susenas 1987, 2018) in a context of rapid population growth. Since 2002, further efforts have dramatically raised spending and expanded enrollment in a large and complex education system (figure 1).

Advances in computing and technology as a part of Industry 4.0 are expected to dramatically change the way society works and interacts. The growing economy needs increased human capacity in basic skills, as well those for technology-enhanced occupations to expand the number of good paying jobs (World Bank 2019b). These changes make improving human capital essential to enable Indonesia to achieve its ambitions and reach its full potential.

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. Indonesia ranks 87th of 157 countries on the World Bank 2018 Human Capital Index, which assesses countries' future productivity based on their education and health outcomes. Indonesia's score on the 2018 Human Capital Index was 0.53.⁴ This means that, on average, Indonesian workers of the next generation will be only 53 percent as productive as they could be under the benchmark of 14 years of learning and full health.

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

The time to deliver human capital is now

Each year 4.2 million Indonesians leave the education system (Susenas 2018). The average student exits the

system at 16 years old with 10.94 years of education (Susenas 2018). But 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). 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, as they engage in TVET and higher education, the taught curriculum tends to be misaligned with today's market needs or those expected for Industry 4.0 (World Bank 2018a).

Student learning results remain low, and inequality in learning outcomes is increasing

Despite the large increase in spending and resources, student learning results remain 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 one year of learning in 2003 to two years of learning in 2015 (World Bank 2018a). This overview of the forthcoming Indonesia Education Flagship report examines ways to strengthen education reforms to 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. More specifically, it looks at the changes the central government can make to improve its approach either directly for areas under its control, or indirectly by guiding and supporting subnational levels, including provinces, districts, and schools. The overview builds on two previous World Bank studies: the 2018 *World Development Report*, which examined education around the world, and *Growing Smarter*, which looked at education in East Asia and the Pacific.

FIGURE 1 Number of teachers and students in MoEC and MoRA institutions

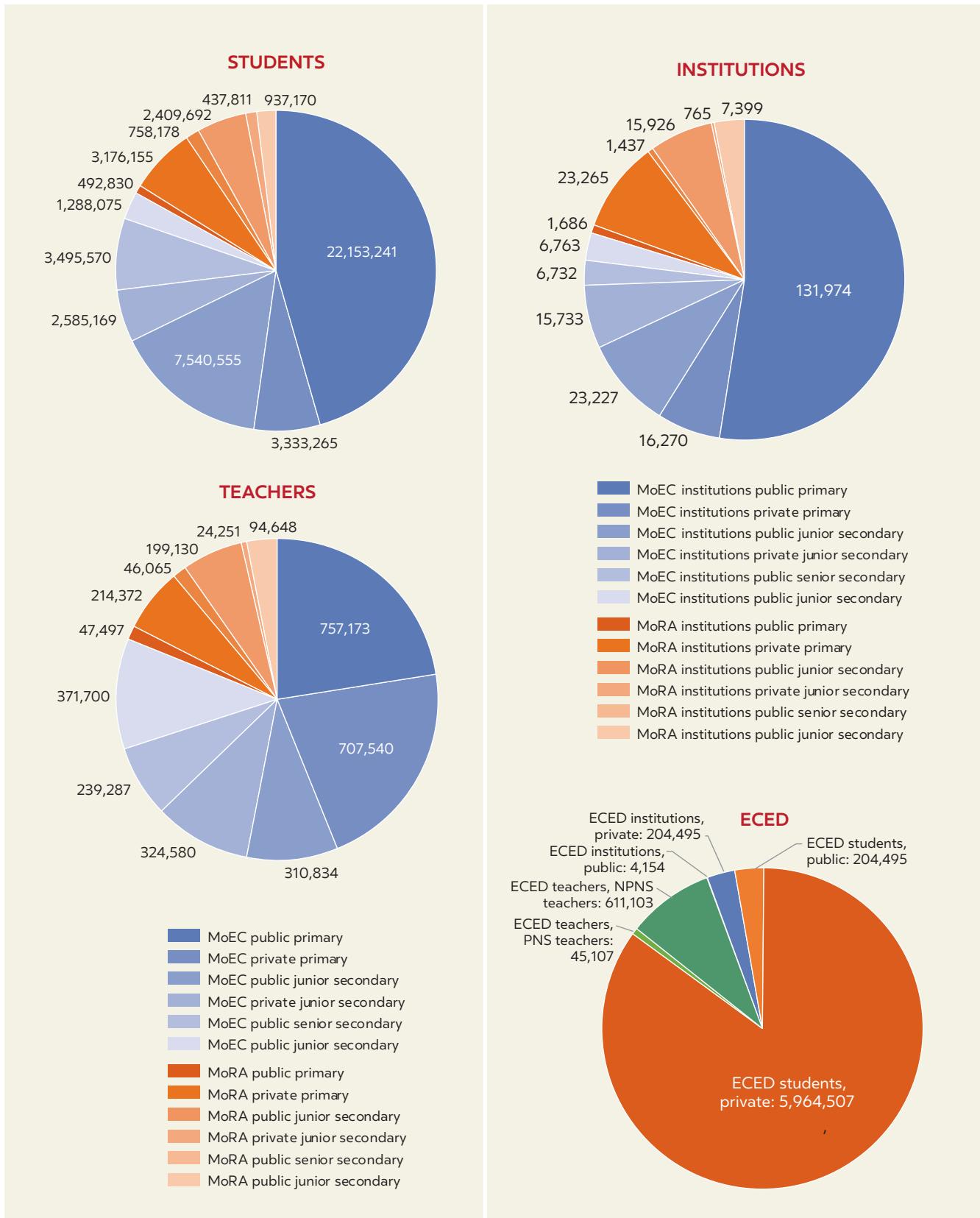


TABLE 1 Summary of key recommendations

GOAL	RECOMMENDATION	WHO	OPTIONS FOR HOW
Boost learning	Ensure that students reach at least minimum learning and development standards at each level of the system	MoEC MoRA Local level supervisors (pengawas) Principal and teacher working groups	<ul style="list-style-type: none"> • MoEC could reduce and revise the NES indicators to focus on measurable and observable aspects of the education process that are more closely linked to learning. • Subnational stakeholders can develop budgets and learning improvement plans to improve student learning. • MoHA can require these plans and assess goal achievement; MoEC can provide technical support. • MoEC can revise the national curriculum to focus on competencies rather than facts.
Provide learning for all	Act to improve learning outcomes of the lowest performers	MoEC MoRA Provinces Districts Schools Teachers Supervisors Principal and teacher working groups LPMP	<ul style="list-style-type: none"> • MoEC and MoRA can implement national assessments in primary to identify learning inequities. • Through in-service teacher training provided at subnational levels, all actors can ensure that teachers know how to use assessment results to support students. • Provinces and districts can use student learning data to identify the lowest 40 percent of schools and students. • MoEC and MoRA can provide special capacity support to consistently low-performing schools and districts. • Schools and teachers can preferentially support lowest performing students.
Start early	Make quality early childhood education accessible to all	MoEC (DG ECED and Community Education) MoRA BAPPENAS MoHA MoV Provinces Districts Villages	<ul style="list-style-type: none"> • Government, led by MoEC, can issue a policy statement making two years of preprimary education compulsory; share roadmap to achieve this by 2030. • Increase public funding to ECED and seek alternative, innovative approaches to funding. • Use PAUD DAK to increase the supply of quality early childhood education. • Use a socialization campaign to stimulate registration of PAUD services and higher enrollment. • Improve collaboration among PAUD stakeholders and improve data collection on PAUD services, teachers, and learners.
Serve everyone	Ensure that all students, including the disabled, succeed	MoEC MoRA MoSA Provinces Districts Schools	<ul style="list-style-type: none"> • Provide support to students at high risk of exclusion and identify them early. • Remove barriers to continuing schooling by adapting learning environments. • Train teachers to identify and work with disabled students; refine the curriculum to be more inclusive. • Use BOS, BOP-PAUD to reduce cost of schooling, PIP for subsidies to disadvantaged families to enroll and keep children in school.
Improve teaching	Improve teacher recruitment, training and professional development; experiment with incentives to increase accountability	MoEC MoRA KEMENPAN RB Province District Schools Principals Supervisors LPTKs	<ul style="list-style-type: none"> • Strengthen recruitment processes for all teacher types to ensure only the highest qualified candidates work with children. • MoEC and MoRA can establish/enforce procedures around induction, probation, and teacher assessment. • Provinces and districts can require supervisors to monitor and supervise student assessment by teachers; these are used to inform teaching and learning. • Strengthen working groups to support their efforts to increase quality and decrease disparities among schools. • MoEC and MoRA can include result of formative and summative student assessments in teacher appraisal. • Districts and provinces can experiment with ways to increase accountability through incentives.

TABLE 1 *continued*

GOAL	RECOMMENDATION	WHO	OPTIONS FOR HOW
Increase learning for employment	Expand access and improve quality of TVET and tertiary education	MoM MoEC MoRA MoF BAN-PT	<ul style="list-style-type: none"> Establish a Skills Development Council with strong private sector participation. Develop labor market information system to guide policymakers and job seekers on their TVET decisions. MoM can lead the development of competency frameworks that reflect private sector needs. TVET institutions can increase their capacity to deliver graduates with these competencies. MoF can finance accreditation agencies to assure independence and capacity to undertake accreditation. MoEC and MoRA can consolidate small, low-quality private universities, improve the quality of tertiary institutions; and increase the independence and financing of the tertiary accreditation board.
Manage for performance	Strengthen accountability mechanisms (through better data tracking and verification)	MoHA MoEC MoRA Parents (school committees) Teachers Schools Districts Provinces	<ul style="list-style-type: none"> MoHA and MoEC can develop a simple education quality index drawing on improved MSS, NES, and student learning measures. MoEC and MoRA can require districts to evaluate student learning at primary level, support them on strategies to improve learning. Districts can communicate results to parents and teachers, support schools and teachers to remediate gaps. Schools can use results to improve teacher practices, mobilize community support, and provide additional services for students. MoEC can support schools and provinces to improve data reporting; MoHA can mandate independent verification of data, with financial sanctions for misreporting.
Align institutions for learning	Support existing institutions to improve service delivery	MoEC MoRA MoHA Districts Provinces Teachers Principal and teacher working groups School committees LPMP LPTKs	<ul style="list-style-type: none"> Support school improvement and enhance student outcomes by building the capacity of existing actors (such as working groups, school committees). Incentivize and hold accountable districts through performance-based budgeting and capacity building and support. Improve the soon-to-be-implemented performance-based BOS program (BOS Kinerja) by using objective indicators in the scoring mechanism.

Table 1 abbreviations: BAN-PAUD = Badan Akreditasi Nasional Pendidikan Anak Usia Dini, 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 = Biaya 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, MSS = Minimum Service Standards, NES = National Education Standards, PAUD-DAK = Pendidikan Anak Usia Dini Dana Alokasi Khusus, PIP = Program Indonesia Pintar, TVET = Technical and Vocational Education and Training.

We DO the Best



Education sector diagnostic

Indonesia has achieved much ...

Education is a central part of the government's development agenda

Education is central to the Indonesian government's development agenda. Since the early 2000s, Indonesia has implemented a broad range of education reforms, including decentralizing much of the education system,⁵ improving the achievement of teacher qualifications, and increasing education spending, up 200 percent in real terms from 2002 to 2018 (World Bank calculation). 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 2018a).

Enrollments are up by more than 10 million

Since 2000, the total enrollment of students has increased by more than 10 million (25 percent), mostly in secondary education. The average rate of increase between 2000 and 2015 was 0.26 years of education per chronological year—more than doubling the rate in the 50 years prior. Between 2002 and 2017, enrollments of youth ages 16–18 increased from 50 percent to 71 percent.⁶

Indonesia has made gains in math and science while educating more children

Of countries participating in the Programme for International Student Assessment (PISA), Indonesia recorded the highest gain in mathematics between 2003 and 2015, a positive outcome that coincided with a rapid expansion of enrollment, including students from low socioeconomic conditions. Improving learning in math while expanding enrollment was a major achievement, and scores in science also improved.

... but needs to focus more on learning

Indonesia has made the right moves but needs to work differently to achieve 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 primary grades (40 percent of 2nd graders cannot recognize two-digit numbers and 50 percent of 4th graders cannot arrange a series of four-digit numbers by value), and learning remains low as students move across grades (World Bank data 2011). Learning is low both in absolute terms, below national targets, and in relative terms when compared with neighboring countries (World Bank 2018a). Despite recent growth in learning as measured by the PISA, it will take 50 years for Indonesia to reach the average OECD score (World Bank 2018a). To reach its human capital potential, Indonesia must now work differently.

Learning poverty and learning inequality are both high

Learning inequality is high between regions, between schools and within schools (box 2). 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 (figure 2). The difference between the average of the three top performing provinces and the three lowest performing provinces on the 12th grade exam for SMA (senior secondary schools) is 21 points on a 100-point scale. Only 4 of the 34 provinces had an average 12th grade score above the minimum passing score of 55. The results are even lower for the 9th grade exam (SMP, junior secondary schools), and for technical and vocational schools (SMK, 12th grade exam). 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).

Students consistently fail to meet the country's own learning standards

There is little evidence of effective support or pressure to improve teaching and learning in classrooms based on these poor results. Instead, the movement has been away from testing and accountability for delivering student learning. The national exam at the end of

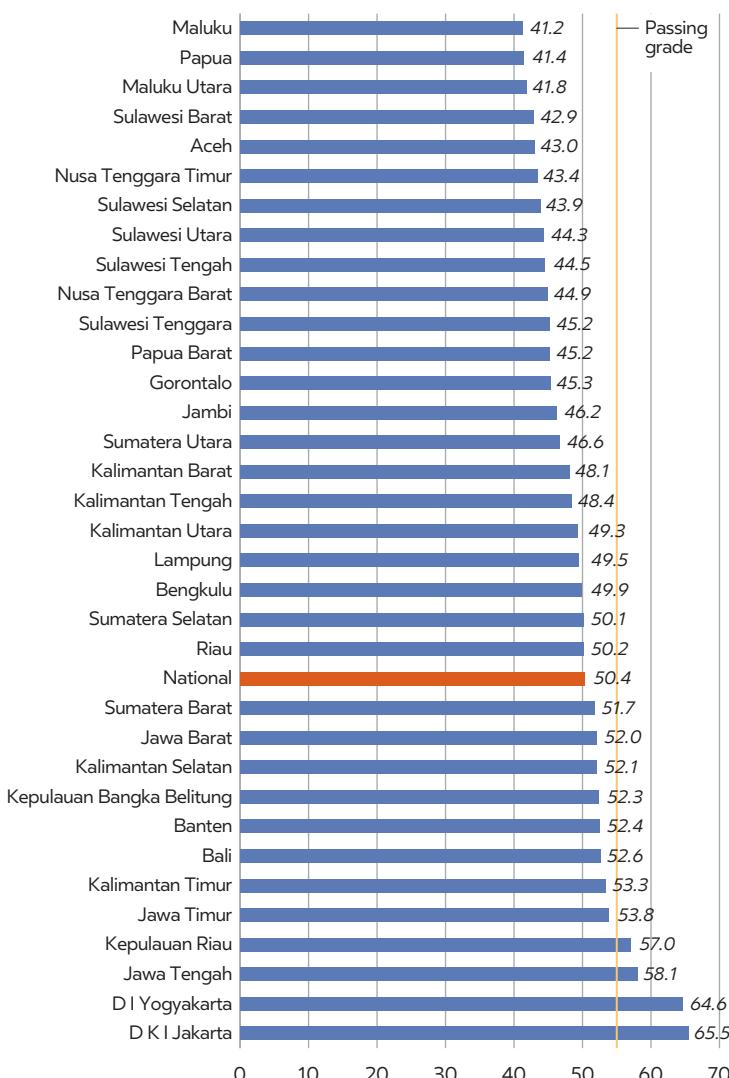
BOX 2 Learning poverty and learning inequality

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 is from 2011 since there is now no nationally representative test of student learning outcomes at the primary level (World Bank 2019c).

Learning inequality is the difference in achievement between the poorest quintile and the richest quintile. In Indonesia, this difference is large. PISA data show that the gaps are large and growing. The next round of PISA data, to be released shortly, should provide more data on this important indicator of equity.

FIGURE 2 Most provincial national exam scores miss the national passing grade

Average senior secondary Ujian Nasional score by province, 2019



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

primary was transformed into a locally designed and administered test (USBN), and the UN (Ujian Nasional) or national exam for 9th and 12th grades has not been a graduation requirement since 2015 (Permen-dikbud 58/2015). 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 make sure that students 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.

The complexity of a decentralized system has created challenges

Indonesia's education system is both complex and very large. It is the 4th largest education system in the world with 3.9 percent of the world's student population. Aligned with the overall decentralization process, 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 23/2014 on Regional Autonomy and Law 33/2004 on Fiscal Balance). The formal system collectively employs 3.3 million teachers educating 53.1 million children in 1st through 12th grades under the Ministries of Education and Culture (MoEC) and of Religious Affairs (MoRA). An additional 231,446 early childhood education centers support the early learning of 7.4 million children (DAPODIK 2019, MoEC 2019). And 4,670 higher education institutions provide services to 8 million students. The nonformal vocational training system comprises more than 40,000 institutions under the supervision of MoEC and Ministry of Manpower, as well as some line ministries.

The decentralization process has underlined 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 2018a). The decentralization process also revealed weak systems of checks and balances in education service delivery between central and subnational levels, and among central levels (Al-Samarrai 2013; World Bank 2017).

Coordinating multiple actors at multiple levels is difficult

Two key ministries—MoEC and MoRA—oversee formal education.⁷ But other ministries and institutions are also involved, such as the Ministry of Home Affairs (MoHA), the Ministry of National Development Plan-

ning (BAPPENAS) as well as KEMENPAN RB, 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 500 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, remote, 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.

Central government data requests from provinces and districts don't 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 the Minimum Service Standards (MSS) of MoHA, 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 (World Bank 2018a). 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.⁸ The NES survey includes a total of 2,055 questions for 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 (figure 3, NES and Student Achievement). This means that the information requested by the central government from schools and subnational governments, which is used for decisionmaking, 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 at the time of publication, suggesting a lack of interest or follow-up on this basic quality-of-service delivery metric.

Spending is still relatively low and can be better targeted

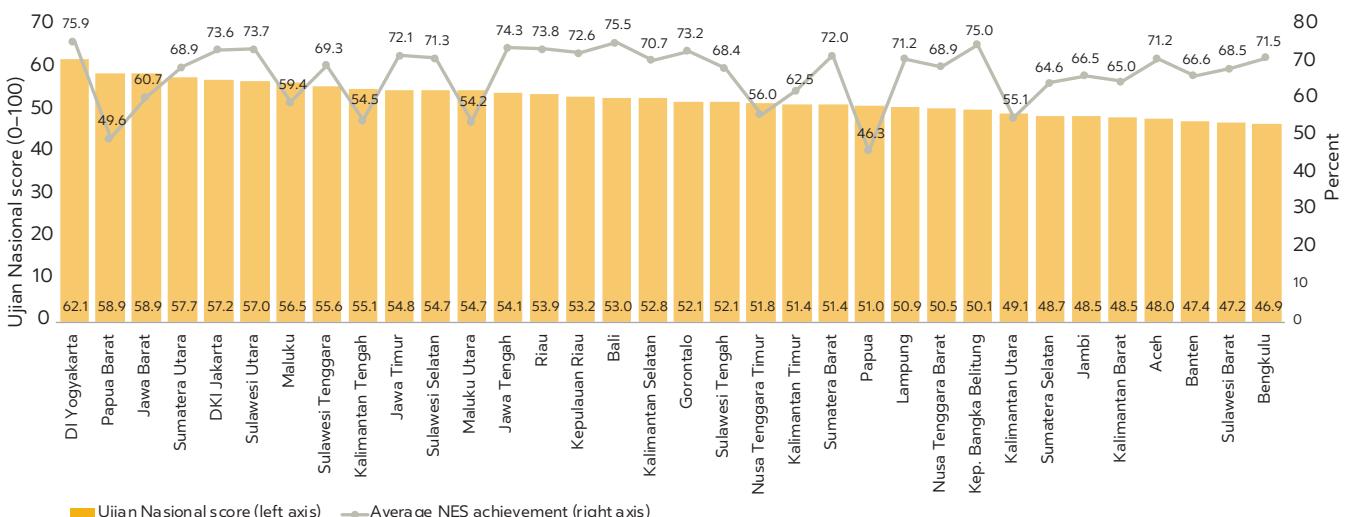
Although Indonesia officially allocates 20 percent of its national budget to education, it is spending less, as a percentage of GDP, than comparable countries. For example, Indonesia's expenditure on education as a percentage of GDP was 3.3 percent in 2014, falling to 3.0 percent in 2018, compared with spending by Malaysia at 4.7 percent in 2017 and Vietnam at 4.4 percent in 2016 (UNESCO). Furthermore, Indonesia is among the countries with the lowest expenditure in PPP terms among countries participating in PISA (World Bank 2018d).

Most public financing of education comes from the center and is managed at the subnational level

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

FIGURE 3 NES scores are not useful for diagnosing the causes of low learning

Junior secondary Ujian Nasional score and NES score, 2017



Source: World Bank analysis drawing from <https://puspendik.kemdikbud.go.id/hasil-un/> and <http://pmp.dikdasmen.kemdikbud.go.id/>.

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, namely provinces and districts.⁹ The national government allocated Rp 492 trillion for education in 2019. Of this amount, Rp 52 trillion was for education services under MoRA, while MoEC was allocated Rp 36 trillion. The majority, Rp 308 trillion, was transferred to local governments (Presidential Regulation 107/2017, Presidential Regulation 129/2018), and the remainder allocated to tertiary education and other education spending. 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 makes up 34 percent (Rp 168.8 trillion) of the total allocated at the national level for general education in 2019.¹⁰
- Earmarked transfers (DAKs), including:
 - Teacher professional and special allowances, which make up 12 percent (Rp 56.8 trillion).
 - The Bantuan Operasional Sekolah (BOS) per student school grant, which is 10 percent (Rp 51.2 trillion), while the transfer for preschool (BOP PAUD) is 1 percent (Rp 4.4 trillion).
 - A special allocation fund for education construction (DAK-Fisik), which is 3 percent (Rp 16.8 trillion).

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.

It is difficult for provinces and districts to know how to focus their discretionary spending

The bulk of the Indonesian education budget comprises fiscal transfers to schools and to district and provincial offices. BOS grants, one of the largest of these transfers, are intended to inject funds into schools to keep children enrolled and give schools some flexibility in managing their own funds. Supporting this flexibility and the decentralization effort in general, the government has moved both to anchor the principles of school-based management in the national education system and to provide a framework of national standards. However, these National Education Standards and the Minimum Service Standards are neither verified nor closely correlated with student learning outcomes. The wide variation in sub-national capacity makes improving learning outcomes even more difficult (World Bank 2013).

Educating to reap the demographic dividend will pay off

The new administration is taking action to reverse the country's human capital shortfall. It 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.

With 50 percent of Indonesians under the age of 30, the population is very young.¹¹ 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. On one side, a large number of young people are entering the labor market with the potential to boost overall productivity and economic growth. On the other side, the number of school-age children is starting a gradual decline, which will eventually free up resources to improve education quality (Supas 2015).¹² 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. This opportunity is rapidly slipping away as this “golden generation” leaves the education system, though 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 risk being saddled with a less productive workforce for the next generation.



GOAL 1

Boost learning



Why is this important?

Human capital is critical for future success

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.

Education can equip students with skills to lead productive lives

Education is a basic human right and should equip students with the skills they need to lead healthy, productive, and meaningful lives. Education can improve an individual's economic opportunities, promote health and general well-being, and expand the ability to make choices. For societies, education can expand economic opportunities, promote social mobility and equity, and make institutions function more effectively (World Bank 2018b). All of these benefits depend not simply on years of schooling, but also on student learning. Education technology (EdTech) has the potential to support student learning in the classroom as recent evaluations from other middle-income country contexts demonstrate (Muralidharan et al. 2017, see text box above).

How is Indonesia doing?

Increased spending is not delivering more learning

Despite the increased spending on education, many Indonesian students are not learning enough and the country is not catching up with its neighbors. The average score across all subjects and school types for the national end-of-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. There may be no direct consequences, since the students are still eligible to graduate and eventually enter higher education. But teaching and learning need to improve for Indonesia to meet its own standards and to realize their ambitions of improved human capital and foster economic growth.

Indonesia participates in all major international tests

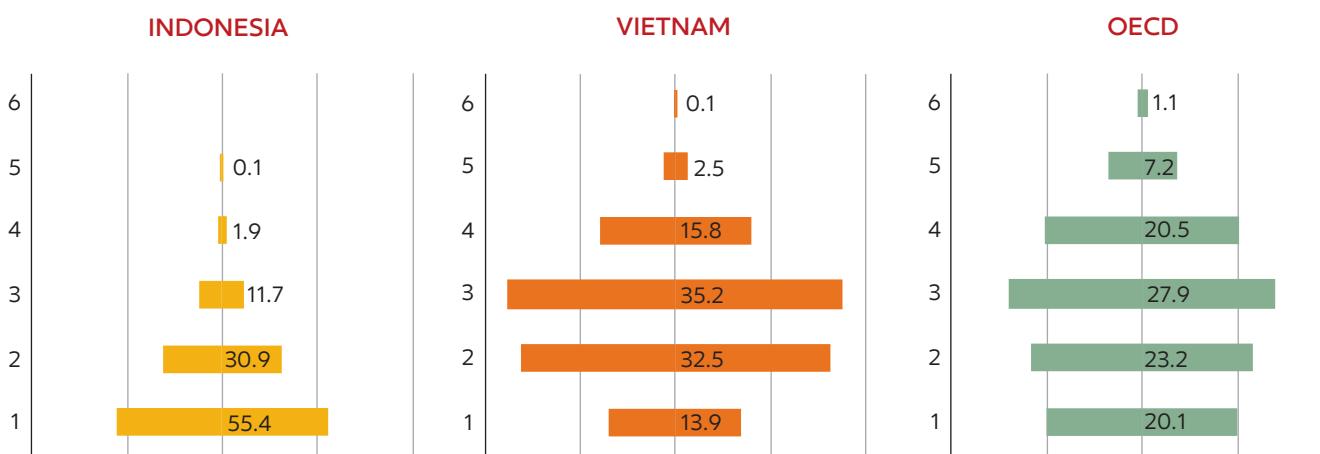
As part of an enduring commitment, Indonesia has participated in all major international tests since 1990, including the OECD's Programme for International Student Assessment (PISA) and Trends in International Mathematics and Science Study (TIMSS). Even with an improvement in PISA results from 2012 to 2015, Indonesia is still ranked below most neighboring countries (figure 4). The TIMSS 4th grade assessment in 2015 showed similar results, with Indonesia ranking among the lower-achieving countries (Beatty et al. 2018).

Money helps, but how it is spent is important

Increased learning is often associated with increased resources in the minds of policymakers, but more resources do not automatically translate into improved learning (World Bank 2018b). Limited accountability and capacity constrain improvements in learning in Indonesia. Capacity constraints limit the potential impacts of district support to better education, school-based management, and community involvement for MoEC and MoRA schools, especially in low-income and rural areas. School leaders are often not focused on learning, may not know how to spend

FIGURE 4 Indonesia compares poorly with neighbors such as Vietnam

(Share of the population by level of achievement, percentage points)



Note: Students with achievement below 2 in the PISA achievement scale are considered functionally illiterate.
Source: World Bank 2018a.

discretionary funds to improve learning, and may not be held accountable for persistently poor learning results (World Bank 2015). Signals from the center about what is important are reflected in the MSS and NES, which are not aligned with student learning.

Education technology holds promise, but has not yet delivered for Indonesia

MoEC, MoRA, and KomInfo have governance responsibility to provide oversight to the EdTech sector. Responsibility for the EdTech agenda at MoEC resides with the Center for Information and Communication Technology for Education (Pusat Teknologi Informasi dan Komunikasi untuk Pendidikan or Pustekkom).¹³ Pustekkom's areas of responsibility overlap closely in some areas with the product and service offerings of private EdTech firms. MoRA also develops online learning tools for teachers and students as well as school administration technologies, and it governs the use of ICT in schools under its authority. MoEC (formerly MoRTHE) governs online tertiary education, while KomInfo governs electronic transactions and, with the assistance of partners, multiple internet safety and digital literacy programs

(Direktorat Jenderal Aplikasi 2018). This overlapping responsibility of multiple authorities leads to a lack of clarity and high transaction costs for the implementation of EdTech approaches.

EdTech firms are concentrated on test preparation for students at the junior-secondary and senior-secondary levels

In the private sector, EdTech firms tend to target sectors of the education market where there is money to be made, and so are concentrated on test-preparation for students at the junior-secondary and senior-secondary levels. This means that priority areas such as reading in early grades or adaptive learning for children with disabilities receive less attention. The focus of most private EdTech firms is Java, and Jakarta specifically, leaving more remote areas underserved (Bahrdwaj and Yarrow forthcoming). IT connectivity needs to be addressed to ensure equity of access, and IT literacy should not be assumed because it is a real barrier in remote locations. Effective use of EdTech products at scale to equitably support student learning in Indonesia is a major challenge facing the Indonesian education system today.

RECOMMENDATION 1

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

- Focus on quality of learning and provide more support to low achievers to improve the country's overall performance.
- Guide and support learning, with more emphasis on helping teachers improve, on measuring outcomes, and on stressing 21st century skills.
- Students must 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 needs to 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 must be provided in early childhood development programs, built upon in later grades to ensure mastery of literacy and numeracy.

- 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.

- 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 could 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 are responding to market needs. A revised governance structure is needed to promote private sector participation in the TVET system.
- Access to lifelong learning opportunities can 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 education technology (EdTech) can 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 many things can be done to support student learning:

- MoEC can reduce and revise the 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 outcomes.

- Local supervisors (pengawas) and MoEC's province-level education quality assurance (Lembaga Penjaminan Mutu Pendidikan—LPMP) can work together systematically with the province-level education offices, the DINAS, 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.
- MoEC can revise the national curriculum to focus more on skills and competencies needed in the labor market. Curricular reform is notoriously lengthy and expensive, but the process should be started soon. Overall coherence of the curriculum, as well as sequencing between grades and forward planning for textbook supply, teacher training, and assessment mechanisms are 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 effective at increasing learning and cost-efficient.

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 improve the country's performance.

GOAL 2

Provide learning for all



Why is this important?

Links are strong between education, health, and longer productive lives

Learning is an equalizer, promoting more equal individual lifetime outcomes, shared prosperity, and poverty reduction. Internationally, each additional year of schooling raises an individual's earnings by approximately 8–10 percent (World Bank 2018b, following Patrinos and Montenegro 2015). Learning includes cognitive skills, which equip workers with knowledge that makes them more productive and allows them to take advantage of new technologies and adapt to changing work. Beyond productivity and economic growth, the links are strong between education, better health outcomes, and longer lives (World Bank 2018b). If the outcomes of learning are not more equitably achieved within a population, the benefits will accrue to some over others and leave the excluded even further behind.

How is Indonesia doing?

More Indonesians are in school but learning too little

Reforms over the past two decades have brought many Indonesians from disadvantaged socioeconomic conditions into schools, but their learning levels remain low and inequality remains a serious problem. As wealthier Indonesians rapidly improve their learning outcomes, the poor advance more slowly, so the inequality in years of education is now being replicated with inequality in learning outcomes. For example, between 2003 and 2015, PISA scores of students from households in the bottom 50 percent of the income distribution remained stable, while student scores in the top 50 percent of income rose. The widening difference can be expressed in school years; the gap of about one school year in 2003 widened to about two school years in 2015 (World Bank 2018a). Actions to improve reforms should therefore prioritize interventions to support low-performing students, schools, and districts, particularly in poor and rural areas.

The system focuses on inputs more than outcomes and more on high achievers

Indonesia's education system tends to focus on equity of inputs not outcomes, and on the high achievers. For example, district offices tend to work with better performing schools, and teachers often focus on better students, leaving the weaker provinces, districts, schools, and students behind with little realistic chance for improvement (Shaeffer and Arlanti 2019). On the financial side, poorer districts tend to benefit in financial formulas to distribute resources, but there is no similar program to support development of capacity.

Significant gaps in achievement are related to family wealth

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 half of cases where parents do not send their child to primary school, or where children drop out of school (Susenas MBSP 2015). Furthermore, significant gaps in achievement are related to family wealth. The PISA results for 2009 showed that more than 40 percent of girls from richer families achieved a score for mathematics at or above level 2, while fewer than 10 percent of girls from poorer families did.

Two obstacles impede making better use of assessment results

Student assessment is a key step in the process of raising awareness of the importance and challenges around learning. Indonesia faces two major obstacles to make better use of assessment results:

- Student learning levels in core subjects such as math, science, and reading and writing Indonesian often are not seen as important by many stakeholders—parents, schools (including school committees), the community, and districts—when in many cases they are problematic and deserve immediate attention (see figure 2).
- There is a cultural aversion to identifying and labeling low performers, especially children. As in many other countries, Indonesians tend to prefer to celebrate success and to avoid conflict and visible failure (Mulder 2005).

Boys and girls have roughly equal access to education, though girls have better outcomes

Indonesia improved its Gender Parity Index (GPI) for school participation for children ages 7–12 from 0.89 in 1971 to 1.00 in 2018.¹⁴ 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 (Yarrow et al. forthcoming). One constant is poverty: the poorer a district or family, the more likely it is to have low enrollments and learning for both boys and girls.

National averages mask considerable local variation

These national averages mask variations at the district level, including cases of significant male and female disadvantage. For example, the variations include the significant difference of the 9th grade national exam scores in Bantul Regency, Yogyakarta Province, where girls outperform boys by 6.6 percentage points on a

100-point scale, and the high enrollment gap in South Buton Regency, South Sulawesi Province, where the percentage of boys ages 16–18 enrolled is twice as high as the percentage of girls enrolled (Yarrow et al. forthcoming based on 2018 test and enrollment data). 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 at the national level by documenting positive examples of addressing gender imbalances successfully and by providing support for capacity and momentum building.

Post-school aspirations differ for young men and women

Despite largely similar 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).

School-based violence is an issue affecting both boys and girls, and more needs be done to make schools safe spaces for learning. More than 20 percent of Indonesian students age 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.

RECOMMENDATION 2

Act to improve learning outcomes of the lowest performers

- Make help for low-performing students, schools, and districts a priority.
- Use high-quality student assessments to diagnose issues and inform instruction.
- Harness learning data to identify lowest-performing 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 learning, teaching, and schools. 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 support needs to be provided to be fully utilized. Indonesia's education system can focus more on how to improve outcomes for low-performing students and schools rather than on increasing the performance of existing high-performers—that is, not only raising the average achievement of schools and students but also reducing the gaps between the best and the worst.

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

To overcome student assessment obstacles, Indonesian leaders at all levels can foster a process that recognizes under-performance in learning and destigmatizes targeted assistance

to low-performing districts, schools, and students. Otherwise, low levels of human capital are likely to persist.

Continue to improve student assessments

The national primary exam was abolished in 2015 (Permendikbud 58/2015). Despite this negative development, MoEC has improved its system of assessment through the introduction of AKSI (*Asesmen Kompetensi Siswa Indonesia* or Indonesian Student Competency Assessment), a sample-based assessment, and increased exam integrity for the remaining 9th and 12th grade 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 importantly, needs to act on evidence from the assessments to make schools work for all learners.

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

AKSI 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. The AKSI initiative covers multiple grades and includes the capacity to provide schools

with information on student achievement by grade, by subject, and by question. This initiative could be expanded. Schools and subnational governments could use results to improve teacher practices, mobilize community support, and provide additional services for students who are behind the curricular learning goals.

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

- Use AKSI-for-schools, a standardized, formative, school-based assessment in second or third grade, to help teachers, schools, and communities identify early weaknesses in learning.
- Implement a national assessment in 4th or 5th grade 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 6th grade, which is less likely to be used to identify lower performers but instead deter students from progressing, and more likely to be politically challenging.
- Link the early and late primary grade assessments 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 low-performing 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 9th grade and 12th grade exams.

What are the options to implement this change?

Indonesian leaders at all levels of government can foster recognition of under-performance in learning

To overcome these obstacles, Indonesian leaders at all levels of government can help foster recognition of under-performance 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. Teachers are already required (on paper) to include tutoring as a part of their 40 weekly academic hours (Permendikbud 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 workings groups, other more successful schools, and the LPMP.
- MoEC and MoRA can continue improving the integrity of the 9th grade and 12th grade 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 school-based 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 teaching practices based on the results of the national primary student assessment.
- District education offices should:
 - Organize a formative assessment of 3rd or 4th grade 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.

GOAL 3

Start early



Why is this important?

The engineers, artists, and political leaders of tomorrow need kindergarten today

The acquisition of knowledge, values, behaviors, and skills is a lifelong process that starts at birth and continues throughout our lives. Successful education systems promote these outcomes starting at pre-primary, gradually building on them with increasing complexity as the child develops and progresses to higher levels of education. Research shows that neural circuits (series of synapses) form sequentially and cumulatively so that the robustness of progressively more complex brain structures depends on the robustness of foundational neural networks (World Bank 2018b). Abundant evidence suggests that investment in early childhood development (focused on children 0–8 years of age) is more cost-effective and is particularly important to build socio-emotional skills in high demand in today's workplaces. Put another way, efforts to transform the skill sets of students with interventions targeting the senior secondary or university level are unlikely to succeed if these students have not engaged with rigorous learning materials and processes throughout their education, starting with high-quality early childhood education.

A good start in life makes all the difference

International research suggests that investments in early childhood education generate high payoffs cognitively, economically, and socially (Gertler et al. 2014, Heckman 2000). Early childhood education is most effective when linked with health services (including nutrition), diagnostics to detect any learning delays and disabilities, and interventions to mitigate them with emotional support and family involvement—rather than simply providing spaces and teachers. Money spent on preschool programs generates a higher return on investment than the same spending on schooling (Heckman and Masterov 2007).

How is Indonesia doing?

Students must be ready to learn

One of the drivers behind Indonesia's current human capital shortfall is children entering school unprepared to learn. In Indonesia, 55 percent of children 5–6 years old are enrolled in preprimary, but only 22 percent of children 3–4 years old (Susenas 2018). This means overall that only 38.5 percent of children ages 3–6 are enrolled in preprimary (the official age for entry into primary is 7 years in Indonesia). As in other countries, poverty, malnutrition, remoteness, the lack of facilities

and qualified teachers for preschool learning, as well as the lack of attention for children with special needs and disabilities, holds back education outcomes.

Spending on early childhood education is low relative to other education investments

Indonesia has expanded participation in early childhood care and education. But investment in early childhood education is well below what is needed. There is also a major divide between rich and poor in the access to and quality of early childhood education provision. While Government Regulation 2/2018 on MSS requires local governments to support one year of preprimary education, early childhood education is not a compulsory part of the national education program and thus often receives insufficient public funding at subnational levels.

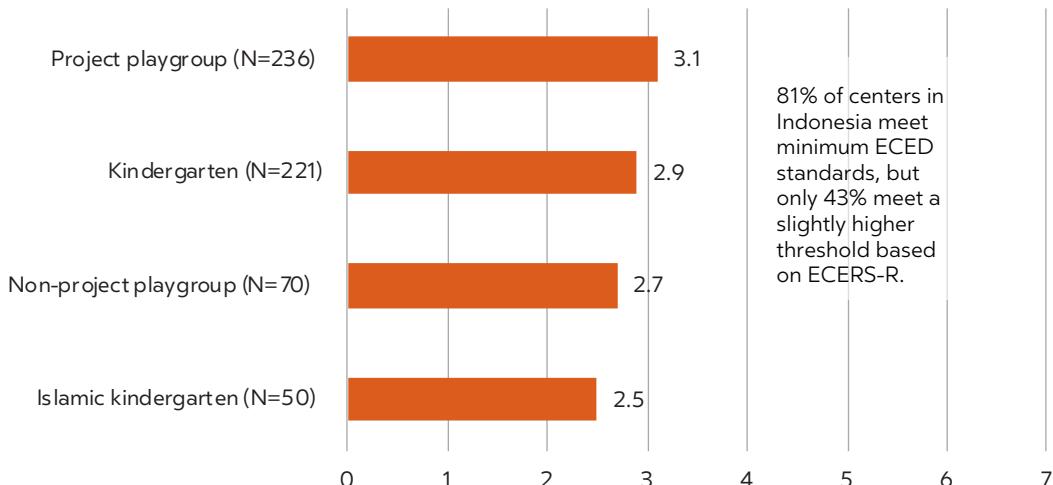
Almost 12 million children ages 3–6 are not enrolled in preschool education

In mid-2019, MoEC took the positive step of revising downward the reported early childhood education and development (ECED) enrollment numbers (MoEC 2019). Aligning more closely with Susenas and other data sources, these lower numbers indicate that 11.7 million children ages 3–6 are not enrolled in preschool education (MoEC 2019 and Susenas). In addition, the quality of ECED services is modest, based on a sample from 10 districts (figure 5) (Brinkman et al. 2017).

The regulatory and budgetary environment is complex

Indonesia's early childhood education system goes by the name PAUD. The term PAUD is commonly used to refer to both ECED as a sector and as a facility that delivers childcare and early learning services to children ages 0–6 (*Pendidikan*—education and *Anak Usia Dini*—early childhood; in a broader definition used across sectors, the P stands for *Pengembangan* or development).¹⁷ At the national level, there are fiscal transfers to PAUD service providers for registered students. This BOP-PAUD in 2019 is worth IDR 600,000 per child per year (MoEC Juknis BOP Guidelines 2019). At the village level, support for ECED services is usually from the community (more than 95 percent of these services are coded as "private" in DAPODIK and are community-based <https://referensi.data.kemdikbud.go.id/index21.php>). Additional funds can come from district-level BOS, occasional discretionary funds from the province or district, and in some cases village funds (*dana desa*) regulated by the Ministry of Villages. All this creates a complex regulatory and budgetary environment.

FIGURE 5 | The quality of preschools varies widely across settings, and average quality is low



Source: Brinkman et al. 2017.

Stunting and malnutrition limit human capital development

Despite some progress, Indonesia's rates of childhood stunting and malnutrition seriously limit its human capital development (Rokx, Subandoro, and Gallagher 2018). According to the National Health Survey (RISKESDAS), in 2018 about 30 percent of Indonesia's children under 5 years old (almost 9 million children) were stunted, down from 37 percent in 2013, although the rate is higher in some regions such as Aceh and Sulawesi. Stunting is the impaired growth and development that children experience from poor nutrition, repeated infection, and inadequate psychosocial stimulation.

Stunting is largely irreversible

Children are defined as stunted if their height-for-age is more than two standard deviations below the World Health Organization's Child Growth Standards median. Stunting occurs in the first 1,000 days of life, can be traced back to the period of pregnancy and the health and nutrition status of the expectant mother. It is largely irreversible. Long-lasting consequences include diminished mental ability and learning capacity, poor school performance, reduced earnings, and increased risks of nutrition-related chronic diseases such as diabetes, hypertension, and obesity.

An ambitious campaign to reduce childhood stunting is under way...

The government is implementing an ambitious program to reduce stunting, which is expected to make a major contribution to improving the country's human capital ranking. The US\$14.6 billion National Strategy to Accelerate Stunting Prevention, launched in August 2017 with World Bank support will benefit 48 million pregnant mothers and children under 2 in the next four years.

... helping children and families with a package of key services

To combat stunting, pregnant mothers and children under the age of 2 need to simultaneously access key services. These services include basic immunization, breastfeeding, dietary diversity, clean drinking water and sanitation, early childhood stimulation and education, food insecurity measures, and a birth certificate to make sure children can access future benefits. Indonesia is now focusing on providing these key services as a package. The investment is already improving Indonesian families' access to key quality services, from health and nutrition to education and sanitation, and is part of a large national movement to reduce Indonesia's high stunting rates.

RECOMMENDATION 3

Make quality early childhood education accessible to all

- Make quality early childhood education compulsory and accessible to all.
- Strengthen the coverage and quality of ECED by ensuring sufficient funding; publish roadmap to achieve universal PAUD enrolment by 2030.
- Incentivize PAUD expansion through grants for additional centers and encourage better collaboration among stakeholders.

What can be changed or improved?

- MoEC, MoHa, and MoRA can propose a law making two years of preprimary education compulsory
- Use district-level funds (APBD) to expand the number and improve the quality of PAUD services using a staged approach, prioritizing children by age and socioeconomic background for one year of preschool, and then work on additional years for younger children.
- Use the new RPJMN to gradually push districts to achieve 100 percent enrollment in one year of kindergarten, identify support for districts to achieve this goal including hiring qualified teachers, and hold to account those that fail to reach targets in subsequent years. This can be a phased requirement, since more than 20,000 villages in Indonesia lack a PAUD center (MoHA 2019).
- PAUD expansion could be incentivized by an output-based grant or new PAUD-DAK-Fisik for districts to build new PAUD centers meeting a small number of key criteria and registering existing PAUD service providers to ensure that those providers meeting the minimum requirements benefit from BOP-PAUD.
- Develop a “socialization” campaign to stimulate both the registration of all PAUD services and the higher enrollment of children in PAUD services. An unknown number of PAUD service providers are not registered with MOEC, so their children are not entered in DAPODIK and do not receive BOP-PAUD. Of course, many children are not enrolled at all.
- The government can strengthen the coverage and quality of ECED by giving it sufficient funding within the current 20 percent education envelope and improving the governance framework by ensuring that minimum quality standards are met. The recent mandating of minimum service standards for ECED (Peraturan Pemerintah 2/2018) with the technical guidelines (Permendikbud 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?

- The MoEC Minister (with the support of the Ministry of Finance, MoHA, Ministry of Villages, and MoRA) can make two years of preprimary education compulsory for all children. Develop a roadmap for phased implementation, including financing and technical support. MoHA can advocate for districts to pass district legislation (PERDA: Praturan Daerah) to finance and implement PAUD services using APBD. Access can be to daycare centers, play groups, kindergartens, and a range of other services for children under the PAUD umbrella. Parenting programs should be expanded with clear links to the stunting agenda.
- BAPPENAS (with support from MoEC, MoHA, and MoRA) can plan implementation of this commitment to two years of preprimary with a staged approach—prioritizing children by age group and socioeconomic background—starting with one year preprimary that meets the minimum service standards and provides funding for poor families and rural areas. Conduct budget analyses on the financing gap to provide the supply side (infrastructure and operational costs, teacher salaries, professional development, and so on). Issue an implementation regulation that defines roles and responsibilities of various stakeholders in ECED.
- Ensure that all sectoral stakeholders in PAUD 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).
- Organize national and local campaigns and identify national and local champions (such as the Bunda PAUD) to raise awareness of the benefits of ECED and increase demand for ECED services.
- Both increase public funding to ECED (from central ministries, district budgets, and village funds) and seek alternative, innovative approaches to such funding (such as public-private partnerships, the private sector).

GOAL 4

Serve everyone



Why is this important?

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—and ensuring that all children learn what they are meant to learn—remains essential in both fulfilling children's rights and ensuring their participation in the development of their community and their nation. 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).

Exclusion has many underlying factors

Gender is a major factor of exclusion, though less so in Indonesia, but many other factors are also important:

- **Remoteness**—Children living in rural and remote areas that may have few educational facilities and many barriers to reach the ones that exist.
- **Poverty**—Children of families who cannot afford to send their children to school and/or need their children to supplement family income.
- **Language**—Children whose mother tongue is different from the language of the school and therefore have difficulty in gaining literacy in the national language.

"Inclusive education" is often limited to disabilities and special needs

"Inclusive education" is often limited, as in Indonesia, to its original focus on disabilities and special needs, but the more general definition is broader, covering many kinds of barriers to education. One of the most intractable barriers to a child's participation in schooling and in learning is the existence of delays and disabilities, whether sensory, intellectual, mental, or physical (or more than one). The first barrier is often the shame felt by the family, resulting in the child being hidden or kept out of public spaces. Early diagnosis of the disability, through early childhood intervention programs for example, might lead to early mitigation, but the specialists required 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 required 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. So is assisting children with cognitive delays caused by conditions such as dyslexia, and handling children with more complex cognitive and socio-emotional challenges such as autism and hyperactivity. The result is that a large percentage of children with delays and disabilities never enter school or never advance to higher levels of education (Male and Wodon 2017, UNESCO Institute of Statistics 2017, 2018).

Many of these children can be included in "regular" schools

Having access to, and opportunities for success in, education is important because it is every child's right—and evidence shows that many of these children can be included in "regular" schools and in learning and others, with more complex needs, in inclusive schools or 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, which can contribute to creating tolerant and just societies (Vargas-Baron 2019, Olusanya, Krishnamurthy, and Wertlieb 2018).

How is Indonesia doing?

Overcoming exclusion from schooling and learning

Remoteness. In Indonesia, more than 53,000 MoEC and MoRA primary schools have fewer than 100 students, of which 37,441 schools have fewer than 60 students (Dapodik and EMIS 2018). This is largely due to the presence of small communities in rural and remote regions where the population does not permit larger enrollments. The schools are often of low quality, with inadequate facilities and relatively untrained teachers (or trained teachers not motivated to remain in such schools for long). The solution favored by many ministries of education (and finance) is to close such schools and merge them to create a larger, supposedly more economically viable entity. Often a solution, this sometimes comes at the sacrifice of the one institution—the school—that serves as the social hub of the community.

Multigrade teaching is the model of choice in many advanced nations

Another possible solution—multigrade teaching where one teacher teaches more than one grade—is found in many places in the world and is the model of choice in many advanced nations (Little 1995). But it is rarely seen in Indonesia, despite successful

development agency pilot projects and training programs (e.g., UNICEF, USAID PRIORITAS, and INOVASI). One reason for this has been the reluctance of MoEC to accept anything less than the presumed international norm of “one class, one teacher.” A second is the oversupply of teachers (mostly contracted) even in remote schools and even where there are not enough classrooms. And a third is that multigrade teaching requires a modified curriculum and additional teacher training which development agencies can provide but LPTK generally do not. So, while the need for multigrade teaching for better quality remains, this need generally is not met in Indonesia.

Indonesia has been ensuring enrollment of children from poor families

Poverty. Indonesia has been successful in ensuring enrollment of children of poor families, through such programs as BOS (which provides per capita funds for school and therefore, in theory, negates the need for school fees) and PIP (Program Indonesia Pintar), which provides funds for education to families classified as poor, as well as PKH (Program Keluarga Harapan), which provides grants to poor families.

Indonesian students of primary age with a disability are more than 10 times more likely to be out of school

Disability. 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 and, when interacting with the environment and society, encounters difficulty in participating fully and effectively (Undang-Undang 8/2016). A 2016 study found that Indonesian students of primary age with a disability are more than 10 times more likely to be out of school than children without disabilities (UNICEF 2016).

The prevalence of children ages 7–18 years with at least one type of physical difficulty is 0.26 percent

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 0.26 percent (Susenas 2018). Including other types of functional impairment—such as behavioral and learning challenges, inability to understand communication, and self-care—boosts the total prevalence rate to 0.46 percent, though this is lower than global average estimates for “severe disability” (WHO 2011). According to Susenas, the proportion of enrolled students with at least one physical impairment is 0.24 percent at primary, 0.16 percent at junior secondary, and 0.12 percent at senior secondary levels.

Children with special needs tend to drop out

Children with special needs who enroll in school tend to drop 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 (World Bank forthcoming). The enrollment rates for children with at least one type of physical difficulty at primary level is 91 percent. This falls to 49 at junior and 27 percent at senior secondary levels.

National policy stipulates that children with special needs be integrated into the education system

Indonesian national policy stipulates that children with special needs be integrated into the education system through dedicated special needs schools and through inclusive schools, which include children with and without disabilities. While a number of important regulations support inclusive education, including the Permendiknas 70/2009, implementation has been lacking in many provinces and districts. Teachers often do not have the training to fully integrate children with physical, psychological, and learning disabilities, and social stigmas are often high, leading parents to conceal children, particularly those with sensory disabilities.

Despite the presence of some 700 languages, most are not officially used in the education system

Language. Despite the presence of some 700 languages in Indonesia (petabahasa.kemdikbud.go.id), most are not officially used in the education system. There is increasing evidence from around the world that gaining initial literacy in one’s mother tongue leads to higher achievement not only in the various subjects in the curriculum but also, eventually, in the national language (World Bank 2018). Some mother tongue programs are found in large language groups such as Balinese, Javanese, Sundanese, and the linguistically rich provinces of Papua, but others are usually relegated to “local curriculum content” rather than as the language of instruction and initial literacy.

Enforcing existing regulations and providing teachers with training would help

Discussions with provincial and district education officers as part of a World Bank study (Yarrow, Afkar, Sudarti, and Cooper forthcoming) reveal 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. 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 access to and the quality of inclusive education.

RECOMMENDATION 4

Ensure that all students, including the disabled, succeed

- Ensure that all students, including the disabled and those in remote areas, succeed.
- Identify children with disabilities as soon as possible so that early help can be provided; train teachers to work with children who have disabilities.
- Ensure that small rural and remote schools can provide quality education.

What can be changed or improved?

- Improve instructional practices and support so that all students—from urban/rural locations, boys/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 that at the district-level children with disabilities are identified as early as possible, provided with early childhood interventions where possible, and 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.

What are the options to implement this change?

- *Remoteness.* MoEC can help ensure that multi-grade teaching is included in pre-service 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 PAUD programs 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.
- *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/neighborhood authorities. Provide early childhood interventions and financial and technical support to PAUD programs and primary schools to enroll these children and ensure that they are included in learning to the extent possible. Invest and promote school designs facilitating access for children with disabilities.

GOAL 5

Improve teaching



Why is this important?

Good teaching is central to learning

Good teachers are central to student learning. To improve their quality, Indonesia needs to assist them more effectively, both before they enter the classroom and throughout their careers. Without consistently better teaching, Indonesian students will not achieve the foundations for later learning or gain the skills for the 21st century workplace in a competitive and globalized economy.

More than 3.3 million teachers work in Indonesian classrooms

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 ECED (Statistik Pendidikan Indonesia 2017/2018, EMIS 2018, Statistik Pendidikan Tinggi 2018). 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.

How is Indonesia doing?

Only two-fifths of the 421 teacher training institutions are accredited

Indonesia's large number of teacher training institutions (421) produce more than three times the number of teacher candidates required by the public service system. This very large number of teacher candidates, approximately 300,000 in 2017, include many who are underqualified, linked to the fact that 58 percent of the teacher training institutions are not accredited.¹⁵ There is a need to reorient from the *quantity* of teacher graduates to the *quality* of teacher graduates. Worryingly, very few of high performers on PISA want to become teachers (PISA 2015).

Classroom teachers have different hiring processes

Classroom teachers fall into different categories, with different hiring processes and different levels of qualification, pay, and benefits. For MoRA, civil servant teachers and principals make up 19.2 percent of the workforce, and non-civil servants 80.8 percent (Simpatika 2018). For MoEC, civil servants are 48 percent of the teacher workforce, while teachers hired by community foundations (yayasan) are 16 percent, and honorary teachers hired by the districts are 28 percent, while part-time teachers (often hired directly by schools) make up the remaining 7 percent (MoEC 2018).



RECOMMENDATION 5

Improve teacher recruitment, training, and professional development; experiment with incentives to increase accountability

- The caliber of teaching needs further improvement, including through better hiring and continued professional development.
- Indonesia should ensure that it has enough highly qualified teachers in the right locations, particularly in rural, remote, and low-performing schools.
- It should also experiment with ways to increase teacher accountability through incentives.

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, while providing incentives and support for continuous improvement. There needs to be continual 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 should be tested and scaled. And 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.

Additional policy actions are needed to improve the pool of candidates entering the career, enhance the quality of preservice training at teacher colleges (LPTKs) and in-service training, and improve the teacher's incentives to deliver higher quality education.

Five ways to improve the caliber of teaching

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 servant 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:

1. Attract the best candidates and pay them more equitably

Many teachers lack the basic subject knowledge to effectively support student learning (Ragatz 2015, Al-Samarrai et al. 2013). Hiring only highly qualified teacher candidates with strong knowledge of the subjects they will teach, whether as civil

servants (PNS) or as contract and honorarium teachers, is central to improving student learning (de Ree 2016). In addition, teacher pay within school can be made more equitable, made dependent on performance and less on the hiring mechanism. Honorarium teachers' salaries are way below minimum wage, and less than a fifth of certified civil servant teachers' income (World Bank forthcoming).

2. Improve preservice teacher preparation

The high civil-servant teacher salary and certification payment is encouraging people to enter teacher education institutions, and the high demand for this education has encouraged the opening of additional private (and usually 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, 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 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.

3. Hire highly qualified teachers while resisting political pressures

Numbers of non-civil servant teachers have grown in recent years, with uneven quality control. With a large pipeline of retirements, up to one million new civil-servant teachers are expected to be hired in the next 10 years (World Bank 2018c). While some existing highly qualified contract teachers can be hired into newly opened civil servant positions, no candidates who lack qualifications should be selected despite political and other non-professional 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, regardless of hiring mechanism, should have some minimum subject knowledge and meet standards for the profession.

4. 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 (Permendikbud 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 for 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 before selecting specific options to test.

5. Experiment with ways to increase accountability through incentives

Certified civil servant 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. So, few teachers have 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 observable indicators such as attendance and professional development to improve teaching competence.

What are the options to implement this change?

- MoEC and MoRA can help attract the best teacher candidates by increasing the status of accredited LPTKs and actively advertising among senior secondary graduates that teaching is a worthwhile and profitable career.
- To improve teacher preparation, MoEC and MoRA can jointly raise standards for enrollment in LPTKs while exerting more quality control over LPTK curriculum, lecturers, and methods of teaching practice.
- MoEC, MoRA, and MoHA can set minimum standards for hiring of teachers across contract types by working closely

with province 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.

- To build on current reforms, MoEC and MoRA can improve 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 and then adapt existing teacher incentive programs more broadly.

KIAT Guru improves teacher presence, service performance, and student learning outcomes in remote primary schools

KIAT Guru (*Kinerja dan Akuntabilitas Guru/Teacher Performance and Accountability*) is a pilot program that aims to improve teacher presence, service performance, and student learning outcomes in remote primary schools. Absenteeism in remote schools (19 percent) is twice the national rate (9 percent) (ACDP 2014), with negative consequences on 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 the Teacher Special Allowance (*Tunjangan Khusus Guru*) to teacher service performance. It works by having community members develop a joint agreement with teachers to improve the learning environment in school and at home, verify teacher presence using an Android-based application, and evaluate service delivery performance through a scorecard.

KIAT Guru results were statistically and significantly better than control schools

One year after the pilot was launched in 2016, 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 and 0.17 standard deviations in mathematics and language respectively) (Gaduh et al. forthcoming). The pilot is a collaboration of MoEC, TNP2K, five rural district governments, and the World Bank. Starting in 2019, the Government of Indonesia is expanding KIAT Guru and adapting 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 Teacher Certification Allowance (*Tunjangan Profesi Guru*).

GOAL 6

Increase learning for employment



Why is this important?

Low quality of the labor force translates into low labor productivity and lower overall competitiveness

An educated and skilled workforce is a prerequisite for economic growth and shared prosperity. Indonesia has favorable conditions for economic growth, but slow progress in human capital development so far has limited the country in achieving its potential. Low quality of the labor force translates into low labor productivity and lower overall competitiveness. Indonesia's labor productivity is one-fourth 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 2018a). For example, in the tourism sector, Indonesia is a leader in its attractiveness (4 of 46) but among the last in the quality of its general human resources (45 of 46) (WTTC 2015). University and vocational education and training can focus on needs of the workplace so that graduates are prepared for good jobs.

Companies find it hard to source professional and managerial staff

Indonesia needs practical solutions to improve its human capital quality and compete in a globalized economy, with an educated workforce required for success in Industry 4.0. To engage more successfully in the global economy, Indonesia needs the right set of highly qualified technicians, professionals, and skilled workers to perform tasks the economy needs. The basic education system should generate the fundamental knowledge and skills that can then complemented by the TVET and higher education systems. As enrollments in all education levels have increased, entrants to the labor market are now better educated. But as the demand for skills is growing with the economy, employers have difficulty finding the right skills for their needs. There is ample evidence that companies are finding it increasingly hard to source professional and managerial staff (Di Gropello 2011, Enterprise Survey 2015).

How is Indonesia doing?

Graduates do not match labor market needs

University and TVET systems have expanded rapidly in Indonesia in recent years, with 123 public universities and 3,195 private universities in 2018 (MoRTHE Performance Report 2017 and MoRTHE Annual Report 2018). Even so, the private sector persistently notes that graduates do not match labor market needs. This in part reflects the lack of a proper skills development system with strong participation of the private sector, which could help set the priorities for investments and anticipate and validate labor market needs.

Universities and TVET institutions have limited guidance on what to teach their students

Indonesia lacks a useful labor market information system to identify occupations in high demand and allow universities and TVET institutions to focus on these occupations. Even though Indonesia has defined Indonesia Qualification Framework (IQF), progress has been limited in defining the occupations and the different tasks that occupations require (competency frameworks), and much of this preparation has been with limited private sector participation. As a result, universities and TVET institutions have limited guidance on what to teach their students. Added to this, accreditation and certification are limited, allowing high heterogeneity in quality and relevance among service providers.

Indonesian universities rank poorly at the global level

Indonesian universities rank poorly at the global level. Only three Indonesian universities rank in the top 500 globally in the QS World University Ranking 2020.¹⁶ Low results are related to the lack of qualified faculty members, among other issues; the RPJMN targets increasing the number of lecturers with PhDs from 16 percent (2018) to 20 percent by 2024 (RPJMN 2020–24, BAPPENAS). Given the difficulty of upgrading the faculty in the short run, funding alone will not make a significant impact on student results.

The Indonesian government has launched various initiatives to improve quality

The Indonesian government has launched various initiatives to improve the quality and competitiveness of universities and higher education institutions. Programs and incentives include introducing lecture-focused scholarships to improve the quality of faculty members, providing infrastructure funding, and offering online courses.

Most underperforming universities are private and unaccredited

Until 2018 there were more universities unaccredited in Indonesia than accredited, and some of them have been unaccredited long enough to have graduated classes of students. Most of the underperforming universities are private and unaccredited (BAN-PT 2018). Many of them are too small to benefit from economies of scale and to offer substandard educational services, which in turn produce poor quality graduates. This is one of the drivers behind the high unemployment among Indonesian graduates. MoEC has the authority to reduce the number of underperforming universities through consolidation, but it can move more decisively to resolve this issue.

TABLE 2 Accreditation status of higher education institutions

Ranking	2016	2017	2018	2019
Accredited A	48	65	85	95
Accredited B	336	531	725	881
Accredited C	733	954	1,164	1,267
Unaccredited	2,158	1,726	1,319	1,059

Source: BAN-PT Report (2018) and BAN-PT Executive Council presentation (2019).

The overall tertiary sector needs to expand

At the same time, the overall tertiary sector needs to expand. The recent opening of the sector to foreign universities is an important step, but is highly constrained, limiting them to partnerships with a small number of existing universities or to specific geographic areas near the capital. While the partnership approach may benefit a small number of existing Indonesian institutions, an approach that allows more foreign satellite campuses to open more quickly and in more regions of the country would better address rising demand and could offer students high-quality options.

Promoting access to high-quality international opportunities

Nonetheless, the government is allocating substantial resources to promote Indonesian students' access to high-quality international opportunities. Through the Lembaga Pengelola Dana Pendidikan (LPDP) program, it allocated 31 trillion IDR (2.2 billion USD) in accumulated funds since 2010 and financed 18,446 domestic and international scholarships for students through the end of 2017 (LPDP Annual Report 2017). In 2018, 55 trillion IDR were put into the LPDP fund, an amount similar to MoEC's total budget.

The TVET system skills and reskills technicians and low-level professionals

The current TVET system comprises formal and nonformal institutions. The formal institutions include Sekolah Menengah Kejuruan (Vocational High Schools [SMK]) and the Polytechnics. The nonformal institutions include Balai Latihan Kerja (Working and Training Center [BLK]) and the Lembaga Kursus dan Pelatihan Training Institution [LKP]). It is estimated that more than 40,000 institutions provide vocational and education training. These institutions are under MoEC, the Ministry of Manpower, and the Ministry of Religious Affairs. Some of these institutions are created and managed by the line ministries, such as tourism, industry, and transportation.

The different TVET institutions have common issues

While each type of TVET institution has unique challenges, there are some common issues for the sector overall:

- Large numbers of TVET institutions have limited knowledge of the competency frameworks, and the

majority of those familiar with the frameworks have limited capacity to implement the framework's study plans.

- Many institutions lack adequate infrastructure and trained teachers. There is wide variation in quality among training providers, and most do not have the appropriate infrastructure and trained teachers to implement competency frameworks.
- Engagement with the private sector is limited, with some positive exceptions. For example, SMKs in the maritime sector can send all their graduates abroad to work on the field, and SMKs in the tourism sector have direct links to international cruise lines (World Bank 2017).
- The different accreditation systems that monitor TVET institutions need to be strengthened (and in theory assure the quality of these programs). Their reach is limited in the number and type of programs they can assess. And certification of graduates following the competency frameworks is still limited due to the limited number of certification providers and the lack of competency frameworks. Private sector demand for certification remains low.
- The current governance structure has failed to produce clear signals on future needs to guide the functioning of the overall system

MoEC is implementing the SMK revitalization program

There have been several major regulations to improve the TVET system in Indonesia in recent years. One of the most important is Presidential Regulation 9/2016 on the revitalization of SMKs. Even though it focuses on SMKs, it set clear mandates to finalize the development of competency frameworks and to promote better private sector participation and coordination among training institutions. Under this regulation, MoEC is implementing the SMK revitalization program, which aims to improve the quality of teachers and infrastructure, strengthen links with the private sector. There are similar programs to revitalize polytechnics and BLKs.

A Pre-employment Card will provide 2 million Indonesians with resources to engage in TVET training

Given the urgency that government leadership is putting on skills for Industry 4.0, it is expected that financing for these types of programs will increase. The government has announced a Pre-employment Card that, starting in 2020, will provide 2 million Indonesians with resources to engage in TVET training. The government has also just launched a tax deduction program to promote training by private companies (Peraturan Pemerintah Nomor 45 Tahun 2019, Peraturan Menteri Keuangan Nomor 128 Tahun 2019).

RECOMMENDATION 6

Expand access and improve the quality of TVET and tertiary education

- Tertiary education is crucial for shaping the workforce that will enable Indonesia to be competitive.
- TVET and tertiary education sector should expand to meet rising demand, including by easing entry for foreign institutions.
- Balance expansion with robust accountability mechanisms.

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 can set priorities in terms of labor market needs and future expectations.

- Establish a reliable, timely, and easily accessible labor market information system to identify labor market needs for use by training institutions, employers, students, and job seekers. The 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.
- Establish a dynamic mechanism for private sector participation in developing competency frameworks for all occupation levels of the IQF. Competency frameworks can benefit from frameworks already defined in the ASEAN context.
- Ensure that universities and TVET institutions have the right infrastructure and teachers to deliver the competency frameworks. Mechanisms to share resources among institutions should be explored to maximize the use of existing infrastructure.
- Have established and reliable certification and accreditation systems recognize skills. Improve the protocol and instruments used in the accreditation process, and have an external party audit the results.
- Have the TVET and tertiary education sector expand to meet rising demand, including easing entry for foreign institutions.
- Balance expansion of tertiary and TVET with robust accountability mechanisms, and measure accountability through accreditation and performance-based funding.
- Ensure that existing scholarship mechanisms, particularly the LPDP, deliver on their potential.

What are the options to implement this change?

- Government of Indonesia can establish a Skills Development Council with strong participation of the private sector to oversee the overall skills development. The council would comprise the coordinating ministries such as Bappenas and the ministries traditionally in charge of the skill provision, including MoEC, 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.
- MoM can develop a Labor Market Information System to monitor the evolution of the labor demand and supply, but also to provide information to job seekers on occupations.
- MoM can collaborate with line ministries to finalize the development of competency frameworks, and to supervise their use in the skills development institutions.
- MoEC can expand the Revitalization of SMK program subject to evaluation of current results. MoEC can continue consolidating the supply of SMK, merging ones with limited capacity with SMKs with higher capacity. Continue and evaluate programs to Revitalize Polytechnics (by MoEC) and BLKs (by MoM). 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 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.

GOAL 7

Manage for performance



Why is this important?

Limited accountability and capacity are constraining possible improvements in learning

Capacity constraints limit the potential impacts of school-based management and community involvement for MoEC and MoRA schools, especially in low-income and rural areas. Research by the World Bank and others indicates that school leaders often are not focused on learning, may not know how to spend discretionary funds to improve learning, and are often not held accountable for persistently poor learning results (World Bank 2018a).

How is Indonesia doing?

MoEC directly manages only 9 percent of the budget for the system it oversees

Decentralization laws shifted the management of schools under MoEC to 34 provinces and more than 500 districts administering some 340,000 schools and other learning institutions across Indonesia's more

than 17,000 islands. MoEC directly manages only 9 percent of the budget for the system it oversees (based on 2018 financial data; World Bank 2018a). The districts and provinces have highly varied socioeconomic and geographic conditions and institutional capacities which affect their ability to deliver education services effectively and efficiently (World Bank 2017).

The governance structure requires districts to fulfill a set of minimum service standards

The governance structure requires districts to fulfill a set of minimum service standards. While some sub-national governments exceed these minimum standards, many fail to meet them year after year, with little consequence (World Bank 2018a). Reporting measures in the current system include reporting on BOS spending, publishing exam results and tracking NES scores, but the resulting information (positive or negative) is rarely used actively to allocate resources and technical support.

RECOMMENDATION 7

Strengthen accountability mechanisms

- Keep better track of education trends by improving MoEC and MoRA databases.
- Hold stakeholders and decisionmakers accountable for improving education quality by establishing an Education Quality Index.
- Data from the index can be used to direct assistance to lagging districts and schools.

What can be changed or improved?

Guide stakeholders and decisionmakers and hold them 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 decisionmakers 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 PAUD 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 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 MSS and NES 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 perform 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.



GOAL 8

Align institutions for learning



Why is this important?

Getting governance right is essential to overall education system performance

Governance is the set of rules and procedures that establishes formal relationships between institutions and different levels of authority. These relationships are influenced by incentives, sanctions, and informal relationships and by how much the formal rules are enforced.

As is aligning education systems with learning

The World Development Report, *Learning to Realize Education's Promise*, highlighted the importance of aligning education systems with learning (World Bank 2018b). "Alignment" here refers to ensuring symmetry and synchronization of the objectives of actors at all levels of the system. For example, are school directors focused on supporting their teachers to improve the learning of all of their students, or is their main goal increasing the school's examination results by focusing on the best students? Do districts and provinces hire the best qualified technical staff to support teachers and schools, or do some of them make appointments to underqualified individuals as rewards for political support or for other personal reasons, as Rosser and Fahmi (2016) and others have documented? Are actors at the central level focused on assessing learning achievement for all students, or are they focused on other goals that may detract from this? For example, are they working on complex and time-intensive measurement systems that don't closely correlate with learning (see figure 3)?

Many goals are not connected to student learning

When all major actors at each level in the system focus on learning in addition to other goals, the system can be said to be aligned with learning, since actors at every level are pointing toward (or lined up with) the same goal. Multiple goals are normal for all levels of a complex education system, but when some or many of these additional goals are not connected to student learning or are even barriers to student learning, then the system is not aligned with learning.

How is Indonesia doing?

Indonesia can build on its recent reforms to improve learning

Recent reforms to introduce performance-based BOS (*BOS Kinerja*) and a standard classification of district spending (Government Regulation 12/2019) go in the right direction and indicate an appetite for results-based reform. Effectiveness in increasing accountability for results will depend on the appropriateness and relevance of the reform's goals and the mechanisms to achieve them. The new presidential administration can work with subnational governments to take

the following fundamental steps to align institutions around the goal of improving learning:

- Focus public spending on improving the equity of student outcomes not only by raising the average achievement level of all students but also by narrowing the gap between the best-performing and worst-performing students and schools.
- Select and support teachers throughout their careers while rewarding increased effort and improved results.
- Ensure that children are ready to learn when they start school by expanding and improving the quality of early childhood education services.
- Use high-quality student assessments starting in primary school to identify gaps and disparities in learning outcomes and use the results to inform instruction and school improvement planning.
- Improve TVET and tertiary education to produce a more competent and adaptable workforce.

Aligning institutions is challenging with so many areas and layers of government involved in education

To improve education results, overall governance of the education sector can be improved by taking action to expand the capacity of subnational education governance, better align regulations and close regulatory gaps. Learning is a complex process that requires the alignment and coordination of all institutions involved—a process especially challenging as so many areas and layers of government are involved in education in Indonesia.

Upgrading subnational capacity and improving accountability are the highest priority challenges

Upgrading subnational capacity and improving accountability are the highest priority challenges in ensuring alignment. Indonesia should now put a greater focus of learning outcomes by enhancing the tracking, monitoring, and evaluation of results and then acting on these results to increase the quality of, and reduce disparities in, the education system.

School principals are key to a decentralized service delivery system

Improving school management and accountability is expected to improve student learning. While principals are essential to school-based management in Indonesia, many do not have adequate training or knowledge of school management and leadership or of the curriculum content teachers are meant to be teaching. They are thus unable to lead their teachers or motivate their students in ways that will achieve better student outcomes (Bandur 2012; Vernez et al. 2016; Pradhan et al. 2014). Too often, principals are selected based

on years of teaching or on political and other personal considerations rather than their ability to lead their school (Rosser 2018). Although policy requires that new principals be selected from a list of qualified candidates, this is not universally implemented in Indonesia's decentralized system. The appointment of unqualified and underqualified school leaders is an impediment to student learning. In high-performing systems, principals are not only managers of the institution they head but also instructional leaders who take a positive role in improving the quality of teaching and learning at their schools (World Bank 2018b).

School committees should become more active in overseeing school activities

Schools nominally have parent committees that can play an important role in school management, but many lack the authority, capacity, and resources—and the support of their school's staff—to make much of a difference. The capacities of school committees need to be improved for them to effectively participate in activities such as results-based budgeting, operational planning and monitoring, and accountability. Without such support, it is likely that higher-income communities, which tend to have a population with greater capacities and a greater awareness of the importance of education, will benefit more from increasing decentralization, leading to more effective school-based management and stronger school committees. Lower-income communities—with a less educated populace, perhaps less interest in education, and often less time to get involved in school affairs—will benefit less.

The committees can be genuinely involved in school decisionmaking

School principals can ensure that the committees meet and are genuinely involved in school decision-making rather than being rubber stamps for a principal's decisions (as they sometimes are). MoEC and district education offices should launch a communication campaign directed at principals, teachers, and communities on the importance of school committees and how they can contribute to school management; training can also be provided to school committee members to help them fulfill their role.

Accountability for results should be top-down and bottom-up

Real accountability for results is a prerequisite for effective management and autonomy in a decentralized system. This accountability should be both top-down and bottom-up, with local leaders and government offices being accountable to higher levels as well as to citizens and civic organizations (World Bank 2017). To improve outcomes for MoEC and MoRA schools as well as the wide range of early childhood education services, there is a need to align budgets, spending, and activities toward improvements in learning and to hold system

actors accountable when this does not occur).

Identify and support the lowest-performing students, schools, and regions

Provinces, districts, and working groups can focus resources and expertise on identifying and helping the lowest-performing schools and early childhood education services and on increasing their capacity to implement—and be held accountable for—successful school-based management. While MoRA's system is centralized, it too can shift to identifying and supporting its lowest-performing students, schools, and regions, while holding them accountable for making progress toward specific goals (box 3).

Spending is not always efficient, but the depth of the problem is not clear

In theory, subnational governments are required to allocate at least 20 percent of their budget to education, but there is evidence that funds intended for education are sometimes diverted to other local priorities or spent ineffectively (Suryadarma 2012, Al-Samarrai and Cedran-Infantes 2013). There is a pressing need to develop the human resource capacity of district education offices and schools, especially in more disadvantaged regions.

Basic information is lacking on the resources local governments allocate to education

Districts use nonstandard budget classification systems, making it difficult or even impossible to compare spending, and some districts do not classify significant amounts of spending by program or function. A recent government regulation (Government Regulation 12/2019) lays the foundation for a standard spending classification system for education and other sectors across subnational governments. The impact of this reform will depend both on the usefulness of the detailed classifications adopted and on the robustness of implementation arrangements to ensure that districts use them.

Implementation is key

Overall, Indonesia's education reforms have addressed many of the right issues, but challenges in implementation have led to uneven results. Going forward, improving learning in Indonesia is about how policies and interventions are implemented in any given context. Large improvements in Indonesia's human capital depend on shifting how the education system operates—specifically in aligning and strengthening the capacities, effectiveness, and accountability of teachers and principals in schools and of all the other local, regional, and national stakeholders.

Monitor the effectiveness and efficiency of district education spending

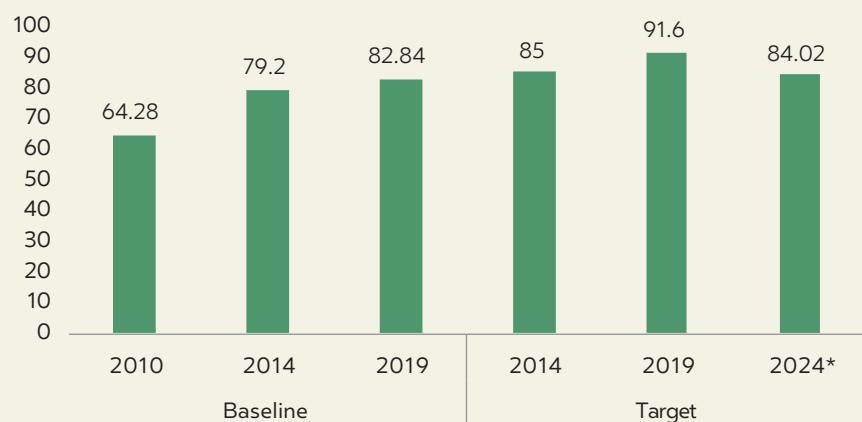
Recent efforts by the central government to more

BOX 3 Holding all actors to account

The senior secondary enrollment target for 2014 still has not been met in 2019, and is not planned to be met by 2024 (box figure 1). No direct sanctions have followed this repeatedly missed target, and this lack of any repercussions is common throughout the system (World Bank 2018a). Other essential targets from the 2010 Medium-Term National Development Plan (RPJMN) have not been met and have disappeared completely from the objectives. For example, the 2010 RPJMN targeted improvements in minimum service standards, focusing on 17 different standards (RPJMN 2010–14). The next planning document referred to “expediting the fulfillment of Mini-

mum Service Standards,” especially in remote areas for education, and implementation in 90 percent of districts, but without specific targets for individual standards (RPJMN 2015–2019). The 2020–2024 RPJMN, reflecting increasing decentralization, calls for 100 percent achievement of the newly revised minimum service standards and for increased targeting of district-level budgets to achieve the standards across all sectors (RPJMN 2020–24). While the planning goalposts are continually moved and, in some cases, removed completely, no one is held to account for successes or failures in education system improvement or student learning

BOX FIGURE 1 Continually missing targets for senior secondary enrollment rates



Source: RPJMN 2010–2014; RPJMN 2015–19, expected targets for 2020–2024; RPJMN (Rencana Pembangunan Jangka Menengah Nasional). https://www.bappenas.go.id/files/rpjmn/Narasi%20RPJMN%20IV%202020-2024_Revisi%2028%20Juni%202019.pdf.

efficiently use BOS grants (BOS Kinerja) and teacher allowances (Kiat Guru pilot) can be matched by complementary actions by districts. The effectiveness and efficiency of district education spending needs to be monitored, especially in smaller districts where managerial capacity tends to be lower.

Link financial transfers more explicitly to quality
Funding allocations to schools and other educational institutions can be more explicitly linked to increasing access and equity and assuring quality in the system, such as achieving accreditation or meeting national standards (and narrowing the gap between the best- and worst-performing schools in this process). More than US\$20 billion will flow from the central government to districts and provinces for education in 2019, according to World Bank calculations. Some subnational governments invest this financing in effective

teacher training programs, support to schools, and student learning. But other districts and provinces, even with the funds available, continue to struggle to meet the most basic minimum levels of quality year after year.

Schools have bounded autonomy on spending

Schools in Indonesia have significant autonomy under Education Law 2005. They manage resources and have autonomy, with some constraints, 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 increased autonomy, while others lack the capacity or incentive to do so. A key challenge is to decide how much autonomy to give to schools in a decentralized system in which school and district capacity and motivation vary widely.

Stronger quality assurance mechanisms are urgently needed

Indonesia has set up centrally appointed quality assurance bodies for education in each province (LPMPs), but so far there is no evidence of their having an impact on learning outcomes. The LPMPs have strong potential to contribute to the education sector at the district and school level. But in many cases, the relationship between the LPMPs and local education offices and schools is underdeveloped. In addition, LPMP actions are restricted to policy interventions related to the Directorate General of Basic and Secondary Education as the LPMP are functionally linked to that Directorate General. Their constrained scope of action is a missed opportunity, for example on teacher and school leadership quality issues. Nor is there a well-established, competent body to assist districts in improving the quality and quantity of early childhood education, another serious capacity gap.

Performance-based management is urgently needed

Performance-based management—where districts, provinces, and the central government allocate resources and time to support low-performing schools and regions to improve—is an urgently needed adaptation, and stronger quality assurance can assist in this process.

Ensure that basic inputs are available

International evidence shows that each child having their own good quality and grade-appropriate textbook is a key ingredient for learning. Diverse reading materials are essential for children to learn to read. Though 33 percent of Indonesian principals indicated a shortage of textbooks on PISA 2015, there is no reliable data on the extent to which children in Indonesia have access to these vital inputs. Urgent attention is needed to address this challenge, both on the data side (gathering information that matters for learning) and acting on it (managing for performance and holding key actors accountable).

RECOMMENDATION 8

Support existing institutions to improve service delivery

- Indonesia can build on its 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 for a minimum period of time 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 is not set up in a way that districts are being incentivized or held accountable for producing good student learning outcomes. District offices (and schools) are not held accountable by parents, and their poor results do not have an impact on budgets. One option to address this is moving to performance-based budgeting (for stronger performers) and providing capacity building and support (for weaker performers). This approach would be similar to that in the performance-based BOS program: if schools perform better, they will get more funds as a reward to encourage them to perform even better.
- MoEC can improve the newly implementing performance-based BOS program (*BOS Kinerja*) by simplifying the scoring mechanism to fewer and more objective observable criteria.

Conclusion

A new round of reforms can create the path to success

Indonesia has huge potential to upgrade its human capital for the 21st century. To get education right, it can raise awareness of the importance of education and ensure that high-quality teacher candidates are recruited, trained well, supported and held accountable for learning. It can make early childhood education accessible and compulsory. It can concentrate on improving the lowest performers and thereby reduce learning inequities in the system. And it can focus on using data to upgrade quality. Earlier reforms have put the building blocks in place for achieving the overarching goal of improving learning, and a new round of reforms can create the path to success.



Notes

1. Based on a PPP measured GDP.
2. https://indonesia.unfpa.org/sites/default/files/pub-pdf/Proyeksi%20Penduduk%202015-2045_.pdf
3. Average of national education spending as a percent of national spending from 2008 to 2018 was 18.5 percent (World Bank COFIS Database).
4. Human Capital Index: <https://www.worldbank.org/en/publication/human-capital>
5. MoRA constitutes 15 percent of the pretertiary education system and is not decentralized
6. <https://data.worldbank.org/indicator/SE.SEC.NENR?locations=ID&view=chart>
7. 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.
8. The NES Junior Secondary questionnaire contains 595 questions for school principals, 563 for supervisors, 547 questions for each teacher, and 162 questions for students, 188 questions for school committee (Kemendikbud 2018).
9. 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, as actual reported expenditure amounts by sub-national governments in education are not tracked.
10. A specific amount of DAU is allocated by MoF for education, however, the amount of DAU actually spent on education by subnational governments is estimated (allocation not execution).
11. https://www.indexmundi.com/indonesia/demographics_profile.html
12. 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.
13. The Pustekkom budget in 2018 is IDR 197,753,183,000 as per Ministry of Finance's budget document (RKKL DIPA Kemdikbud, 2018) for MoEC. This allocation covers multiple areas, such as enhancing school connectivity, developing digital learning resources, improving educators' ICT skills, and increasing ICT use for teaching and learning.
14. World Bank calculations using Population Census 1971 and Susenas 2017.
15. <http://lldikti12.ristekdikti.go.id/2016/12/15/mayoritas-lptk-belum-terakreditasi.html>
16. <https://www.topuniversities.com/university-rankings/world-university-rankings/2020>

References

- ACDP Indonesia: Education Sector Analytical and Capacity Development Partnership. 2017. "Teacher Retirement Pattern 2017–2027: An Opportunity to Improve Teacher Management," Working Paper, June 2017.
- ACDP Indonesia: Education Sector Analytical and Capacity Development Partnership. 2014. *Study on Teacher Absenteeism in Indonesia*. ACDP, Jakarta.
- Al-Samarrai, S. 2013. *Local Governance and Education Performance: A Survey of the Quality of Local Education Governance in 50 Indonesian Districts*. World Bank, Jakarta Indonesia.
- Al-Samarrai, S. and P. Cerdan-Infantes. 2013. "Where Did All the Money Go? Financing Basic Education in Indonesia." *Education in Indonesia*, 109–138.
- Al-Samarrai, S., M. C. Chang, A. B. Ragatz, S. Shaeffer, R. Stevenson and J. J. De Ree. 2013. *Teacher Reform in Indonesia: The Role of Politics and Evidence in Policy Making: Main Report (English)*. Directions in Development; Human Development, World Bank, Washington DC.
- American Institutes for Research (AIR). 2015. *Evaluation of LAUSD's Instructional Technology Initiative Year 2 Report*. Washington, DC. <https://www.air.org/sites/default/files/downloads/report/LAUSD-Instructional-Technology-Initiative-Exec-Sum-August%202015.pdf>.
- Australia Indonesia Partnership for Economic Governance (AIPEG). 2017. *Women's Economic Participation in Indonesia: A Study of Gender Inequality in Employment, Entrepreneurship, and Key Enablers for Change*. AIPEG, the Australian Department of Foreign Affairs and Trade (DFAT), and Monash University's Centre for Development Economics and Sustainability (CDES), Melbourne, Australia.
- Bahrdwaj, R. and N. Yarrow. Forthcoming. "EdTech in Indonesia: Are We There Yet?"
- Bandur, A. 2012. "School-based Management Developments: Challenges and Impacts." *Journal of Educational Administration*, September.
- Beatty, A., E. Berkhouit, 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, United Kingdom.
- Brinkman, S. A., A. Hasan, H. Jung, A. Kinnell, N. Nakajima, and M. Pradhan. 2017. "The Role of Preschool Quality in Promoting Child Development: Evidence from Rural Indonesia." *European Early Childhood Education Research* 25:4, 483–505.
- Cerdan-Infantes, P., Y. Makarova, S. Al-Samarrai, D. Chen, P. Cerdan-Infantes, Y. Makarova, C. Al-Samarrai, D. Chen. 2013. *Spending More or Spending Better: Improving Education Financing in Indonesia*. Policy brief. World Bank, Washington DC.
- 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.
- Denboba, A. D., R. K. Sayre, Q. T. Wodon, L. K. Elder, L. B. Rawlings, and J. Lombardi. 2014. *Stepping Up Early Childhood Development: Investing in Young Children for High Returns*. World Bank, Washington, DC.
- Di Gropello, E. 2013. "Role of the Education and Training Sector in Addressing Skill Mismatch in Indonesia." In D. Suryadarma and G. Jones (Eds.), *Education in Indonesia*, pp. 236–266. ISEAS–Yusof Ishak Institute, Singapore.
- Di Gropello, E., A. Kruse, and P. Tandon. 2011. *Skills for the Labor Market in Indonesia: Trends in Demand, Gaps, and Supply*. World Bank, Washington, DC.
- Direktorat Jenderal Aplikasi. 2018. Literasi Digital Pilar Masyarakat Informasi Indonesia. <https://aptika.kominfo.go.id/2018/11/literasi-digital/>
- Enterprise Survey. 2015. Indonesia. <https://microdata.worldbank.org/index.php/catalog/2665>
- Gaduh, A., M. Pradhan, J. Priebe, and D. Susanti. Forthcoming. *Camera, Score, Action? Incentivizing Teachers in Remote Areas*.
- Gertler, P. J., J. J. Heckman, R. Pinto, A. Zanolini, C. Vermeersch, S. Walker, S. M. Chang, and S. Grantham-McGregor. 2014. "Labor Market Returns to an Early Childhood Stimulation Intervention in Jamaica." *Science* 344:6187, 998–1001.
- Google-Temasek. 2018. <https://www.thinkwithgoogle.com/intl/en-apac/tools-resources/research-studies/e-economy-sea-2018-southeast-asias-internet-economy-hits-inflection-point/>
- Heckman, J. J. and D. V. Masterov. 2007. "The Productivity Argument for Investing in Young Children." *Review of Agricultural Economics* 29:3, 446–493.
- Heckman, J. J. 2000. "Policies to Foster Human Capital." *Research in Economics* 54:1, 3–56.
- J-PAL Evidence Review. 2019. "Will Technology Transform Education for the Better?" Abdul Latif Jameel Poverty Action Lab, Cambridge, MA.
- Little, A. 1995. *Multigrade Teaching: A Review of Practice and Research*, Serial No. 12. Overseas Development Administration, London.
- Male, C. and Q. T. Wodon. 2017. *Disability Gaps in Educational Attainment and Literacy*. World Bank, Washington, DC.
- Ministry of Education and Culture. 2018. Peraturan Menteri Pendidikan dan Kebudayaan 15.
- Ministry of Education and Culture. 2018. Statistik Pendidikan Indonesia 2017/2018.
- Ministry of Education and Culture. 2019. Dapodik.
- Ministry of Education and Culture. 2019. National Exam Data, PUSPENDIK.
- Ministry of Finance. 2019. Peraturan Pemerintah Nomor 45 Tahun 2019.
- Ministry of Health. 2018. RISKESDAS, presentation "Hasil Utama RISKESDAS 2018."
- Ministry of Home Affairs. 2019. http://bangda.kemendagri.go.id/berita/baca_konten/1399/pemerintah_dorong_program_satu_paud_satu_desa.
- Ministry of Religious Affairs. 2018. EMIS.
- Ministry of Research, Technology, and Higher Education. 2018. Statistik Pendidikan Tinggi 2018.
- Mizunoya, S., S. Mitra, and I. Yamasaki. 2016. "Towards Inclusive Education: The impact of Disability on School Attendance in Developing Countries," Innocenti Working Papers 2016-03, UNICEF Office of Research, Florence, Italy.
- Mulder, N. 2005. *Inside Indonesian Society: Cultural Change in Java*, Penerbit Kanisius, Bangkok, Thailand.

- Muralidharan, K., A. Singh, and A. J. Ganimian. 2017. "Disrupting Education? Experimental Evidence on Technology-Aided Instruction in India." *American Economic Review* 109:4, 1426-60.
- 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.
- Omidyar Network. 2019. Scaling Access and Impact: Realizing the Power of EdTech. www.omidyar.com/
- Organization for Economic Cooperation and Development OECD. 2016. *PISA 2015 Results: Excellence and Equity in Education*. Vol. 1. OECD, Paris, France.
- Pradhan, M., D. Suryadarma, A. Beatty, M. Wong, A. Gaduh, A. Alisjahbana, and R. Artha, R. 2014. "Improving Educational Quality Through Enhancing Community Participation: Results from a Randomized Field Experiment in Indonesia." *American Economic Journal: Applied Economics* 6:2, 105-126.
- PricewaterhouseCoopers. 2017. *The World in 2050: How Will the Global Economic Order Change?* February. PricewaterhouseCoopers, London, United Kingdom.
- Psacharopoulos, G. and H.A. Patrinos. 2018. *Returns to Investment in Education: A Decennial Review of the Global Literature*. Policy Research Working Paper, WPS 8402. World Bank, Washington, DC.
- Ragatz, A. B. 2015. *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*. World Bank, Washington DC.
- Rokx, C., A. Subandoro, and P. Gallagher. 2018. *Aiming High: Indonesia's Ambition to Reduce Stunting*. World Bank, Washington, DC.
- Rosser, Andrew; Fahmi, Mohamad. 2016. *The Political Economy of Teacher Management in Decentralized Indonesia*. Policy Research Working Paper;No. 7913. World Bank, Washington, DC.
- Rosser, Andrew. 2018. *Beyond Access: Making Indonesia's Education System Work*. Lowy Institute, Sydney Australia
- Shaeffer, S. and R. Arianti. 2019. *Education Innovations in East Java: A Review and Analysis of INOVASI's Stocktake Study*, INOVASI, Jakarta, Indonesia.
- Simpatika. 2018.
- Statistics Indonesia. 2015. Badan Pusat Statistik (BPS), the Central Bureau of Statistics, Jakarta, Indonesia.
- Suryadarma, D. 2012. "How Corruption Diminishes the Effectiveness of Public Spending on Education in Indonesia." *Bulletin of Indonesian Economic Studies* 48:1, 85-100.
- Susenas. Various years, Badan Pusat Statistik.
- UNESCO. 2018. Education and Disability: Analysis of Data from 49 Countries. Information Paper 49, March. UNESCO Institute of Statistics, Montreal.
- UNESCO. 2019. Cali Statement. <https://unesdoc.unesco.org/ark:/48223/pf0000370910>
- UNICEF. 2012. *We Like Being Taught: A Study on Teacher Absenteeism in Papua and West Papua*, Technical Report.
- UNICEF. 2014. UNICEF Blog, Remote Schools: Inspiring Papua's Children to Go the Extra Mile for Education. Monday, 14 April 2014.
- Usman, S., Akhmad, and Suryadarma, D. 2004. *When Teachers are Absent: Where Do They Go and What is the Impact on Students?* SMERU Research Institute, Jakarta.
- 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.
- Vernez, G., R. Karam, and J. H. Marshall. 2016. *Transforming Indonesia's Centralized Education System to School-Based Management*. RAND Corporation, Santa Monica, CA.
- WHO. 2011. World Report on Disability for children aged 0-14, following Global Burden of Disease 2004.
- WHO. 2015. Global School-based Student Health Survey 2015. https://www.who.int/ncds/surveillance/gshs/2015_Indonesia_GSHS_Fact_Sheet.pdf
- World Bank. 2015. *Reviewing 10 Years of Indonesia's School Grants Program*. World Bank, Washington, DC. <https://www.indonesia-investments.com/upload/documents/World-Bank-Bantuan-Operasional-Sekolah-Indonesia-School-Grants-Program-Indonesia-Investments.pdf>
- . 2017. *Indonesia Economic Quarterly: Decentralization that delivers*. December. World Bank, Jakarta, Indonesia.
- . 2018a. *Indonesia Economic Quarterly: Learning More, Growing Faster*. June. World Bank, Jakarta, Indonesia.
- . 2018b. *World Development Report 2018: Learning to Realize Education's Promise*. World Bank, Washington, DC.
- . 2018c. *Mapping Indonesia's Civil Service*. World Bank, Washington, DC. <http://documents.worldbank.org/curated/en/643861542638957994/pdf/126376-Mapping-Indonesia-Civil-Service-14977.pdf>
- . 2018d. *Growing Smarter: Learning and Equitable Development in East Asia and Pacific*. World Bank, Washington, DC.
- . 2019a. *Indonesia Economic Quarterly: Oceans of Opportunity*. June. World Bank, Jakarta
- . 2019b. *World Development Report: The Changing Nature of Work*. World Bank, Washington, DC.
- . 2019c. *Ending Learning Poverty: What Will It Take?* World Bank, Washington, DC.
- . Forthcoming. Primary Education in Remote Indonesia: Survey Results from West Kalimantan and East Nusa Tenggara. World Travel and Tourism Council. 2015. Benchmark Report—Indonesia.
- Yarrow, N., R. Afkar, S. Sudarti, and R. Cooper. Forthcoming. Gender and Inclusion in Indonesian Education.

Government laws and regulations

- Law of the Republic of Indonesia 22/1999 Concerning Regional Administrations.
- Presidential Regulation 107/2017.
- Presidential Regulation 129/2018.
- Law 23/2014 on Regional Autonomy.
- Law 33/2004 on Fiscal Balance.
- Permendikbud 58/2015.
- Permendikbud 15/2018.
- Permendikbud 32/2018.
- Permendikbud 51/2018.
- Undan-Undang 8/2016.
- Government Regulation 12/2019.

Websites

- http://apkapm.data.kemdikbud.go.id/index.php/cberanda/apkapmsekolahmadrasah?kode_wilayah=000000&tahun=2018
- <https://data.worldbank.org/indicator/SE.SEC.NENR?locations=ID&view=chart>
- http://bangda.kemendagri.go.id/berita/baca_konten/1399/pemerintah_dorong_program_satu_paud_satu_desa
- <https://data.worldbank.org/indicator/SE.SEC.NENR?locations=ID&view=chart>
- https://www.bappenas.go.id/files/rpjmn/Narasi%20RPJMN%20IV%202020-2024_Revisi%202028%20Juni%202019.pdf
- <https://www.bps.go.id/statictable/2010/03/19/1525/indikator-pendidikan-1994-2018.html>
- https://www.indexmundi.com/indonesia/demographics_profile.html
- <https://www.topuniversities.com/university-rankings/world-university-rankings/2020>
- <https://www.worldbank.org/en/publication/human-capital-petabahasa.kemdikbud.go.id>

Acknowledgments

This report was prepared by a team led by Noah Yarrow, comprising Rythia Afkar, Deepali Gupta, Susiana Iskandar, Ratna Kesuma, Javier Luque, Sylvia Njotomihardjo, Andy Ragatz, Rosfita Roesli, Sheldon Schaeffer, Ruwiyati Purwana, Michael Tjahjadi, and Wisnu Harto Adi Wijoyo. The team is grateful to the peer reviewers Kathleen Whimp, Dewi Susanti, Fadila Cailaud, and Elizabeth Ninan, as well as to Camilla Holmemo for inputs and guidance. The report was prepared under the overall guidance of Rodrigo Chaves (Country Director, Indonesia and Timor Leste) and Toby Linden (Practice Manager, Education, East Asia and Pacific).

A team at Communications Development, Inc., led by Bruce Ross-Larson and including Joe Caponio, Jeremy Clift, Debra Naylor, Peter Redvers-Lee, 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.



