LEARNING FOR ALL

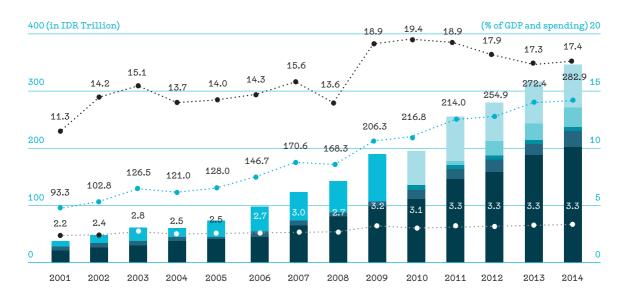
Towards Quality
Education
for Enhanced
Productivity &
Economic Growth
in Indonesia¹



Education is a priority for Indonesia Part 01

Fig.1. Education Spending, 2001-2014

IDR Trillion Vs (%) of GDP and spending



Source: World Bank consolidated fiscal database using MoF(Ministry of Finance) data. Notes: Sub-national government education spending data is only available until 2014. Ministerial breakdown of CG(Central Government) spending before 2010 is not available. CG 2016 is revised budget data. Total government national spending comprises: 1) CG spending, including subsidies, interest payments but excludes transfers; 2) Provincial spending; and 3) District level spending. Total education spending comprises of CG education sector/function spending, excluding transfers, Province education sector/function spending and District education sector/function spending. Note that some SNG(Sub-national Government) education spending is not captured if coded under the General Administration function.

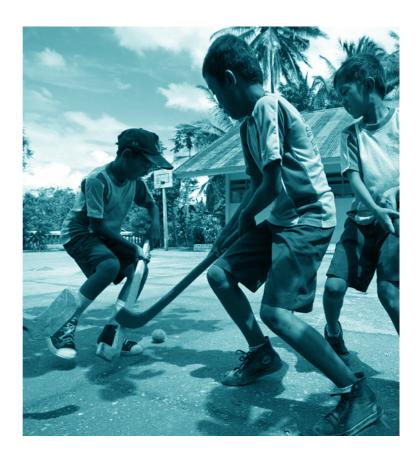
- 1 USD = 13,348 Indonesian Rupiah (IDR)
- MoRA Ministry of Religious Affairs
- MoEC Ministry of Education and Culture

- District, LHS
- Provinces, LHS
- Central-Other Ministries, LHS
- Central, LHS
- Central-MoRA, LHS
- Central, MoEC,LHS
- ···· Total education spending as % national spending, RHS
- ··· Total education spending (2010=100), LHS
- Total education spending as % GDP, RHS

Uniquely and richly diverse in people groups, religions, cultures, landscapes and languages, Indonesia is nonetheless united in prioritizing education. This commitment is reflected in a constitutional mandate to allocate 20% of the national budget to education. The World Bank's recent Indonesia

Economic Quarterly from January 2017 reported that education spending now represents a full 20.6% of Indonesia's budget. Government spending on education has risen rapidly, increasing ninefold in nominal terms from 2001 to 2014 (Figure 1). Over the last two decades, in spite of challenges stemming from

geography, natural disasters, ethnic and language diversity and socioeconomic differences, Indonesia has used these funds to design and implement multiple initiatives, reforms and policies that have effectively improved the education system for millions of Indonesians.



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Indonesia is one of the few Lower Middle Income non-OECD countries who take regular stock of their progress by participating in various international learning assessments.

Indonesia takes regular stock of its progress by participating in international comparative assessments, studies, and impact evaluations. It is one of the few countries outside the Organization of Economic Cooperation and Development (OECD) to participate extensively in international assessments. For instance. it is a committed participant in the Trends in International Mathematics and Science Study (TIMSS), the Progress in International Reading Literacy Study (PIRLS), and the Programme for International Student Assessment (PISA). By

way of comparison, no lowincome countries participated in the TIMSS 2015 or the PISA 2015, and only three and five lower-middle income countries participated in the TIMSS 2015 and PISA 2015 respectively—Indonesia was one of them. It has also participated in extensive studies examining teacher knowledge and practices, early childhood programs and more. Taking stock is a crucial pre-requisite for improvements. Indonesia has collected valuable data and information on proficiencies and trends by investing in assessments and studies.

Access to Primary Education is Nearly Universal although Gaps Remain for the Poor Part 02

Enrollment rates have significantly improved such that Indonesia now boasts almost universal enrollment rates in primary school. Household survey data (Susenas) from 2015 show primary school net enrollment

is at a remarkable 97%. The enrollment rate for junior secondary has increased to almost 78% from only 60% in 2000; and senior secondary net enrollment is now at 60%, also representing a steep increase from 39% in 2000.



97%

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78%

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60%

and senior secondary net enrollment is now at 60%, also representing a steep increase from 39% in 2000.

Although enrollment rates are still low at the ends of the education spectrum, enrollment rates are rising for ECED (Early Childhood **Education and Development)** and tertiary education. In 2015, Approximately 35% of children ages 3-6 are enrolled in some type of ECED program, according to Indonesia's Central Bureau of Statistics (BPS/ Biro Pusat Statistik). This percentage represents a gain from initial data collection in 2001, when enrollment reached a maximum of 22%. Indonesia has made substantial inroads to providing access to

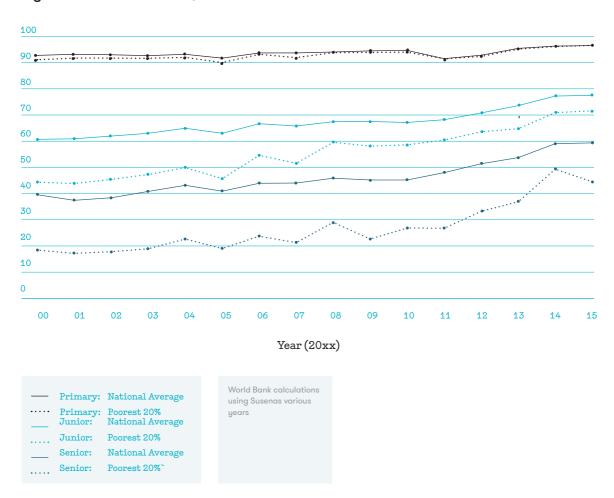
ECED programs, now getting increasingly more children off to a strong start. Similarly, a greater share of Indonesians now achieves some level of participation at the tertiary level: Net enrollment rates in tertiary education have risen from 8% in 2001 to 17% in 2015 (BPS, 2017).

Enrollment rates for poor households has improved, but work remains to be done to close extant gaps. For example, a substantial gap remains between the richest and poorest quintiles at the secondary level (Figure 2). Service delivery and

infrastructure are uneven. For example, whereas Java generally has access to paved roads and electricity (85% and 99% respectively), Papua does not (21% and 29% respectively).2 As a result of infrastructure challenges, household costs associated with education (e.g., transportation, uniforms) and opportunity costs, poorer students are less likely to move as far through the education system as more affluent peers: 61% of children from the richest households reach Grade 12, whereas only 23% of the poor reach that level.

²Calculations based on Podes 2014 data.

Fig.2. Net Enrolment rates, 2000-2015



In spite of Investments, Indonesia has high enrollments but low learning achievements Part 03

Indonesian students' performance on international assessments continues to lag behind regional and OECD averages by approximately 3 years of schooling. Proficiency levels in the core academic areas of reading, science and math are not yet satisfactory. PISA 2015 results, for example, find 68% of Indonesian 15-year-olds to achieve below basic proficiency levels in mathematics. Lower than average scores were also found in science and reading domains, findings that are commensurate with results on the TIMSS and PIRLS assessments for 4th and 8th graders. The difference between students in the top and bottom socioeconomic quintiles represents 2.3 years of schooling, revealing that proficiency levels for the poor

remain low. There are also gaps favoring urban over rural students. Indonesia is not yet achieving average achievement levels commensurate with regional peers such as Thailand, Malaysia or Vietnam.

However, trends are moving in the right direction. Proficiency levels rose slightly between 2012 and 2015 PISA assessments (see Figure 3), and the proportion of students functioning at a basic level of proficiency in science and reading has increased by 6 and 3 points respectively (although it decreased by 3 points in maths). These changes are not statistically significant. Since initial participation in the PISA, Indonesia has realized gains in reading and mathematics roughly equivalent to a year's worth of schooling (World Bank, 2016).

Proficiency levels in the core academic areas are not yet satisfactory. PISA 2015 results, for example, find 68% of Indonesian 15-year-olds achieve below basic proficiency levels in mathematics.

Fig.3. PISA scores, 2006-2015



The difference between students in the top and bottom socioeconomic quintiles represents 2.3 years of schooling, revealing that the poor lag behind.



Time to Renew Attention to the Quality of Education Part 04

One important key to better quality education is better quality of spending. The Government of Indonesia ensures adequate expenditures reach the education sector, yet student proficiencies and workforce skill sets are not yet satisfactory. The Minister of Finance recently noted that a top priority for Indonesia at present is to consider not simply what sectors spend, but how they spend allotted funds to ensure maximum effectiveness.³

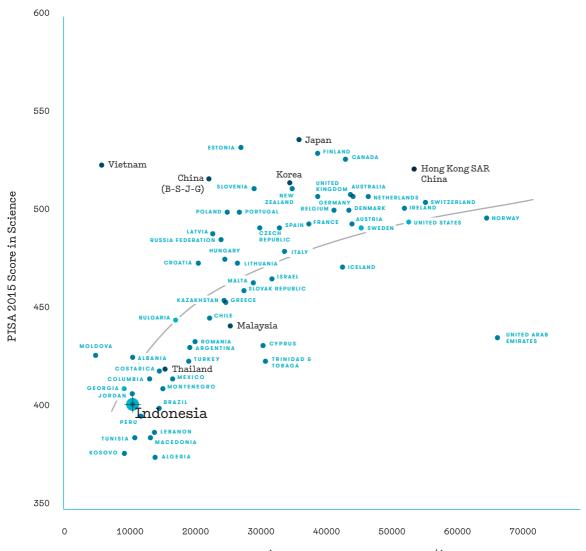
PISA 2015 scores reveal that Indonesia also performs lower than the trend that its GDP

per capita predicts. Looking at the trends of GDP per capita and PISA scores, one country from the region which has performed much higher than expected from its level of income, is Vietnam (Figure 4). It appears that Vietnam does a number of things differently or more effectively than other countries, such as promoting strong parental involvement in students' academic success, closely monitoring teacher performance, and emphasizing student achievement and supporting students' confidence related to future academic achievement.



A top priority for Indonesia at present is to consider not simply what sectors spend, but how they spend allotted funds to ensure maximum effectiveness.

Fig.4. PISA performance & GDP per capita



GDP Per capita in 2015 or latest (constant 2011 International \$), World Bank ICP

Source: PISA Brief, World Bank, 2016

Indonesia has several points of entry to improve the quality of its spending on education.

Considering a student as the nucleus in a set of concentric circles, implementing effective policies at varying levels of proximity to the student—through schools, teachers, parents and the students

themselves—can lead to improvements in student learning outcomes either directly or indirectly.

Access to education is necessary but it is not sufficient unless the quality of education is equally high. There are several strong programs already in place in each of these areas that Indonesia ideally will continue, although with refinements or a greater share of investments to some aspects of programming that could lead to greater returns on investment.

³ Presentation on January 17, 2017, by Minister of Finance Sri Mulyani Indrawati given at the World Bank Indonesia and CSIS launch of Indonesia Economic Quarterly January 2017. Centre for Strategic and International Studies, Jakarta.

Becoming School Ready: Refining the BOS Program Part 05



The Government could enhance the poverty focus of BOS, already a priority, by adjusting for inflation and tweaking funding to provide additional funds for poor students

Since 2005, the government has used the Bantuan Operasional Sekolah (BOS or School Operational Grant) program to provide perstudent financial support for school operating costs and strengthen school-based management. According to Assessing the Role of the School Operational Grant Program (BOS) in Improving Education Outcomes in Indonesia (World Bank, 2014a), BOS has had a

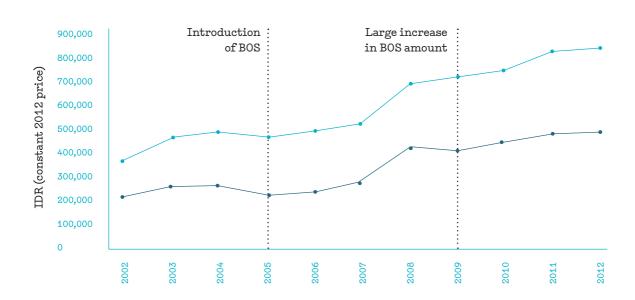
favorable impact on enrollment rates, especially among students from poor households. Upon the introduction of BOS (2005) and when BOS was increased by a significant amount in 2009, household education spending decreased particularly among the poorest quintile (Figure 5).

The Ministry of Education and Culture has shifted its focus of the BOS program towards education quality specifically. 2014 guidelines for the program state: "The School Operational Assistance (BOS) program that was launched in July 2005 has made a significant contribution to accelerating the completion of the 9-year compulsory education program. Therefore, from 2009 onwards the government has changed the BOS' objectives, approach and orientation from outreach to quality improvement" (Ministry of Education and Culture, 2014).

The World Bank recommends that BOS policies more explicitly link funding allocations to quality assurances, such as achieving accreditation or meeting national standards. The Government could enhance the poverty focus of BOS, already a priority, by adjusting for inflation and tweaking funding to provide additional funds for poor students. It could also limit

the BOS grants allocated to private schools that charge high tuition fees. In addition, BOS has the opportunity to do more to empower parents. Revitalizing parents' level of awareness, empowerment and responsibility for schools through BOS may link to higher emphases on student achievement and greater demand for accountability (World Bank, 2014a).

Fig.5. Household education spending per student 2002–2012





Average spending per student for the poorest group

Source: World Bank, 2014a

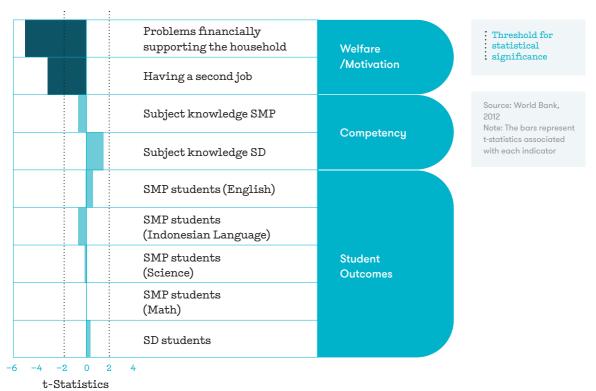
Becoming Teacher Ready: Impacting Teacher Knowledge & Skills Part 06

Teacher certification is not correlated with improvements in student learning outcomes. In 2005, Indonesia passed Law No. 14/2005, the Teacher Law, requiring teachers to achieve bachelor's degrees followed by certification. The policy has increased teacher pay, the

prestige of teaching as a career and the number of teachers going through teacher training programs. However, findings from a rigorous randomized control trial evaluation, discussed in Indonesia: Teacher Certification and Beyond (World Bank, 2015b), showed that there

were no differences in teacher or student test scores between certified and non-certified teachers (Figure 6). Becoming certified does not currently require any demonstrated evidence of knowledge and skills (e.g., from exam results or observation evaluations).

Fig. 6. Causal effect of the teacher certification program



Teachers' subject-matter knowledge accounts for a large share of student learning, but current teacher knowledge levels are on average low.

Differences in teachers' levels of subject-matter knowledge has been shown to account for 50% of the variation in student outcomes observed in Indonesian primary classrooms. Results from MoEC's teacher competency exam, the *Ujian* Kompetensi Guru, show that 57% of math teachers scored below 50% on the exam (World Bank, 2015a). World Bank researchers estimate that a 1.0 standard deviation increase in teachers' subject-matter knowledge among all teachers

in Indonesia would yield a 0.3 standard deviation increase in student achievement the medium term (World Bank, 2015b).

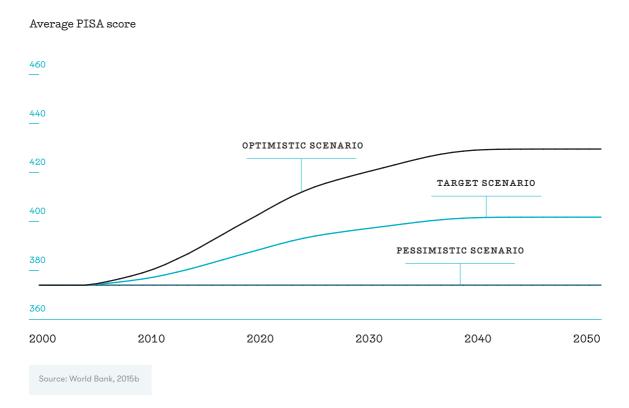
Teachers also need training to better implement studentcentered approaches in the classroom. Indonesian teachers have not vet fully embraced student-centered approaches. According to results from an in-depth video study of 8th grade mathematics teachers, Indonesia: A Video Study of Teaching Practices in TIMSS Eighth Grade Mathematics Classrooms (World Bank, 2015a), teacher-centered teaching actually increased from 2001 (61%) to 2007 (74%). Indonesian

teachers rarely pose strategic and open-ended questions that require complex and specific student responses demonstrating student understanding. Nearly 90% of students observed, responded to teacher questions using only a single word. The World Bank recommends that the Government support teachers to understand and become skilled with student-centered approaches to increase inclass interaction, open-ended questions, inquiry-based methods using real-world contexts, hands-on practice and experimentation, and other methods shown to positively impact learning outcomes.



Improving Teacher Selection & Training Programs Part 07

Fig. 7. Selective hiring of high performing teachers can have a strong positive impact on student learning outcomes



Indonesia is in an elite group when it comes to the current popularity of teaching as a career, perhaps drawing more teachers than needed. Thanks in part to certification-based increases in pay, teaching is an attractive career option that draws millions of Indonesians. In 2015, there were over 1 million students enrolled in teacher training colleges in Indonesia, producing roughly

200,000 more teachers annually than can be employed each year. Instead of training more professionals than necessary, a more efficient approach would be to select a much smaller number of candidates into teacher training colleges in the first place, those with high levels of cognitive proficiency and subject-matter knowledge and appropriate dispositions for teaching. Selecting only

the top candidates before entry into training programs, rather than after completing training, has been effective in highly successful education systems such as Singapore and Finland. A study in Indonesia shows that selective hiring of high performing teachers can substantially improve learning outcomes (Figure 7).



Highly successful education systems such as Singapore and Finland select only the top-performing students to be trained as teachers.

Indonesia will want to focus not only on the new generation of teacher candidates seeking first certification but also on the millions of teachers already in classrooms. Refining policies related to teacher certification would boost teacher knowledge and performance levels. Requiring certification achievement to be contingent on demonstrated evidence of teacher competencies would lead to a more knowledgeable and skilled teacher workforce. Instead of relying on portfolio reviews, for example, direct testing on literacy, numeracy and subject-matter knowledge and observationbased evaluations of in-class performance would increase

the likelihood that only highly qualified candidates achieve certification. Lastly, connecting financial incentives with both certification achievement and successful completion of continuous professional development activities would enhance the felt impact of funds reserved for teacher compensation. The current workforce impacts students every day already. They will benefit from Indonesia's continuous professional development systems and a Teacher Professional Management System that continues to strengthen and incentivize teacher learning to impact student outcomes.

Becoming Parent Ready: Empowering Parents to Raise Student Performance Levels Part 08



In Indonesia parenting practices were relatively powerful predictors of many outcomes, representing 0.5 standard deviation related to cognitive development, for instance.

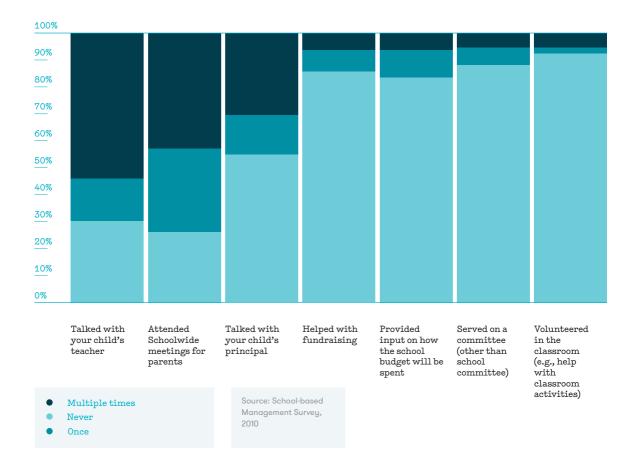
Above and beyond socioeconomic status, parenting skills make a difference in the lives of Indonesian children. In a large-scale, longitudinal World Bank impact evaluation (Hasan et al., 2013), researchers showed that good parenting practices are associated with lower child behavior problems and emotional problems and with higher scores on physical growth, social competence, emotional maturity, language and cognitive

development, communication skills and general knowledge. Parenting practices were relatively powerful predictors of many outcomes, representing 0.5 standard deviation related to cognitive development, for instance. Parenting was particularly powerful in impacting children's physical health.

Parental involvement in school affairs tends to be low. Over 80% of parents evaluated in

a school-based management survey had neither provided any inputs into school decision making nor volunteered in school activities, such as serving as a committee member, helping classroom activities, or raising funds for the school. Similarly, 50% of parents never talked with their child's principal and 30% never talked with their child's teacher (Figure 8)

Fig. 8. Parental participation in school affairs



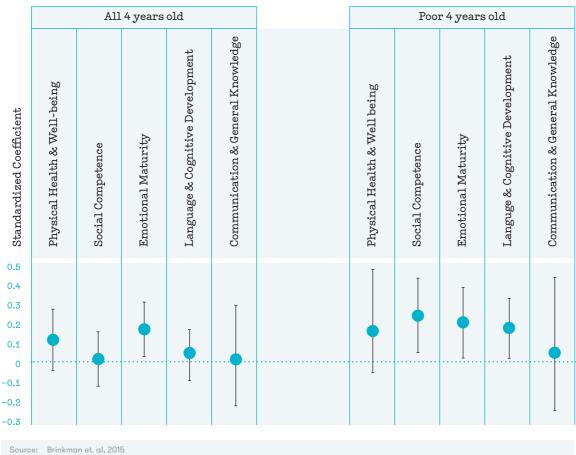
Indonesia can use parenting education programs to empower parents to improve students' success in school. Findings from a World Bank review, Parenting Education in Indonesia (Tomlinson & Andina, 2015) suggest that positive results would come from improving program content and delivery and specifically naming education-based parent behaviors or student-learning outcomes as indicators. The

Government could better support facilitators in terms of compensation, training, goals and guidelines, and realize greater impacts on poor households by increasing contact with families to at least once weekly. Given Indonesia's high comfort level with technology, schools could take advantage of inexpensive methods such as regularly texting parents, for example, which correlates with improved

school attendance, assignment completion and achievement. In addition, diversifying outreach to include parents of older children would expand the reach of program impacts to support secondary students.

Becoming Student Ready: Ensuring Young Children are Prepared to Succeed in School Part 09

Fig. 9. Impact of ECED on children's outcomes



Estimated coefficients and associated 95% intervals shown

Advancing children's school readiness-making them student ready—is a critical avenue for increasing returns on investment in education sector. Children do not possess the ingredients for success in school in equal measure, and the quality of child's experiences in school partly depends on how ready they are to absorb and

benefit from the opportunities at school. The World Bank has completed several analyses demonstrating the impact of early childhood education and development (ECED) programs on Indonesian children, such as Early Childhood Education and Development in Poor Villages of Indonesia: Strong Foundations, Later Success

(Hasan et al., 2013) and found that participation in ECED programs leads to improved child outcomes including social competence, emotional maturity, and language and cognitive development. Impacts are higher and persist over time for children from disadvantaged households (Figure 9).



PISA science scores of students who participated in ECED programs are 1.4 years of schooling ahead of non-participating peers.

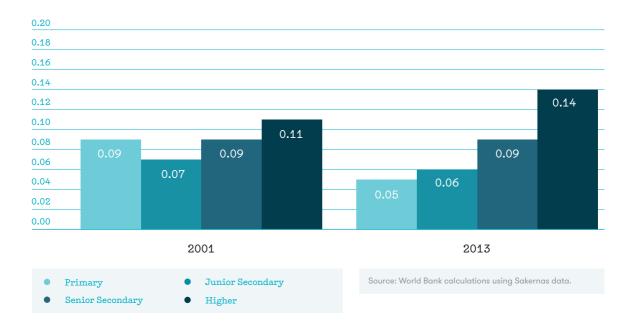
Experience in ECED programs is a significant positive predictor of children's developmental outcomes. For example, PISA science scores of students who participated in ECED programs are 1.4 years of schooling ahead of nonparticipating peers. Outcomes from rural Indonesia, where early childhood programs provide a relatively low dose of exposure, show that children are likely to benefit from attending longer hours in pre-primary programs; participating for

a minimum 2 years shows the most powerful positive impacts on later child outcomes (Brinkman et. al, 2016). The most cost-effective pathway through the early years for poor children in rural Indonesia includes ageappropriate entry in a playgroup (at age 3-4) followed by entry into kindergarten (at age 5-6) (Nakajima et. al, 2016).

However, it remains to be emphasized that cost-benefit effectiveness and degree of impact follows program quality. As yet, program quality in rural districts across Indonesia is often low. To raise program quality, programs need have to high standards, sufficient funding, a balanced curriculum, implementation occuring in alignment with program design, trained, well-paid staff, strong supervision and monitoring, and data to improve and refine the program.

Putting Education to Work: Building Skills to Meet Market Demands and Generate Growth Part 10

Fig. 10. Returns to Education by Educational Attainment Level, 2001 & 2013



New entrants into the labor force are increasingly becoming more educated, but there are signs of skills mismatches. Despite the higher enrollment and completion rates of the Indonesian labor force, employers still face difficulty to find the right skills for their needs (World Bank, 2011). At the same time, the demand for skills is increasing rapidly, and will continue to grow with Indonesia's economic transformation. This economic growth and

structural transformation not only requires higher levels of education and skills to boost innovation and productivity, but also necessitates more complex workplace skill sets and higher order thinking and problem solving skills. Such a need for improved skills is limiting opportunities for less educated individuals. For instance in 2002, 61% of jobs could be filled by a worker with a primary school education; by 2013, less than half (47%) of jobs allowed for that level of education. More than

one-third (35%) of employers want workers with a high school diploma. The demand for higher education is reflected in the higher rates of return to education (Figure 10). Over the years, the marginal return to primary education has reduced, whereas it has increased for tertiary education. Therefore, only primary education achievement may no longer guarantee a pathway out of poverty.



Reforms to Indonesia's education and training systems could allow workers to upgrade their skills and be more responsive to the labor market. Incentives to better involve the private sector could lead to more needs-based and resultsoriented trainings that are in direct response to current labor market needs. Improving equitable access to trainings, especially for historically marginalized groups including women, youth and people with disabilities, will expand job opportunities and the pool of qualified workers. Facilitating job matching services through, for example, employment services could lead to matching between vacancies and eligible workers, as well as supporting

screening and counseling activities. Effective services in other country settings include training opportunities and unemployment benefits to support and provide opportunities to vulnerable workers. At present, Indonesia has rigid labor market and worker protection regulations that may actually be causing a net loss in terms of productivity. Employers have a disincentive to create more formal jobs and workers have a disincentive to move into better-fit jobs or get retrained to try new jobs or innovate. It would also benefit from supporting innovation and entrepreneurship—high-risk but high-reward endeavors that generate economic growth.

Recommendations for achieving Learning for All and quality education in Indonesia

Although Indonesia has made progress in access to basic education, much work remains to be done to achieve quality education in Indonesia.

Financing for education has been prioritized through the national budget, with a constitutionally guaranteed 20 percent of government expenditure allocated to education. This reform has been implemented within a context of decentralization of education service delivery. Despite the various Government programs and initiatives both at central and sub-national levels in education sector, quality education remains of national concern. This policy note recommends 5 key areas to be improved to achieve quality of education service delivery:

Effective and efficient education service delivery would be enhanced if improved accountability practices are institutionalized for the sub-national levels of government. In a highly decentralized country context like Indonesia, sub-national governments play crucial roles in managing service delivery, including in the education sector. Two-thirds of the education budget are transferred to, and executed

at, sub-national levels. A solid monitoring system equipped by an enforcement mechanism that align performance and incentives will lead to effective accountability in improving the delivery of education services. More strongly linked education sub-national fiscal transfers to performance would incentivize sub-national governments to perform better in providing quality education. Moreover, a more equitable distribution of resources would help subnational governments in disadvantaged areas improving their performance. Performance based budgeting requires a credible system of performance measurement. Systematic information on standardized measures through an education index to monitor performance is fundamental. Reliable and timely information about the results being delivered is equally important to inform budget decisions. With this system, the central government should be able to monitor all of the performance areas identified in the plan and to determine the progress each sub-national government is making toward achieving the national goals.

More efficient and transparent utilization of BOS (School Operational Grant) can support schools to achieve national standards and improve schools' quality.

The BOS program has been supporting schools to meet their operational needs for over a decade. As frontline education providers, schools are the most knowledgeable institution in mapping the school needs. Therefore, schools' capacity to translate school operational needs into effective and efficient school budget and activity plan (Rencana Kerja Sekolah/RKA) should be further developed. To better monitor school expenditures, standardized catalogues for goods and services needs to be incorporated into the school budget plan. Furthermore, transparent school plan and performance agreements could further support schools to achieve national education standard and improve quality. Performance agreements should be made between districts/provinces and schools and publicly available for important stakeholders such as parents, school committee, local education organization, etc. This would promote more efficient and effective use of BOS and enhance district monitoring and accountable school performance evaluation. Parents would similarly be able

More efficient and transparent utilization of BOS (School Operational Grant) can support schools to achieve national standards and improve school quality



Improving teacher management is crucial for efficiency in education service delivery





to monitor and be involved in student performance with greater involvement in school management and knowledge of school performance.

Enhancing teacher competencies and performance through **Continuous Professional Development (CPD) could** improve quality of teaching and learning. Different actors should support CPD. For example, schools could support the CPD system through prioritization in annual school budget and activity plan of BOS and incentive system similarly needs to be strengthened. Teacher professional allowances and teacher competencies achievements, CPD, and classroom performance should be linked by a rigorous performance managen system. In this way, teachers would be more accountable and motivated to improve their performance. In designing performance-based allowance formula, rigorous performance management system should be credible, fair, and trustworthy. This system could support district to be more pro-active and accountable for their teachers' performance. Ultimately, implementing periodic re-certification would further support teachers' continuous improvement.

Improving teacher
management is crucial for
efficiency in education service
delivery. Uneven distribution
of overall number of teachers,
and teachers with subject
specialty, both within and
across schools and districts
may hamper education services
delivery. Identifying schools/
areas that have under-supply
or over-supply of relevant
teachers should be one of the

main priority tasks of subnational governments. Capacity of local governments to create and implement teacher redistribution plan based on reliable data and analysis needs to be strengthened to effectively help schools aligned with the desired Studentto-Teacher Ratio (STR), The Central Government could further support by providing the right incentives and ensuring all regulations and Laws are in place to enable districts to fully implement their teacher redistribution plan.

Ultimately, expanding access to quality ECED services, where the participation is low and public investment is lacking, will give the highest return of investment in education. Since 2016 the Government has launched School operational grants for ECD centers (Bantuan Operasional Penyelenggaraan PAUD/BOP PAUD) that aim to provide financial support for ECD programs. Expansion of the coverage and the unit cost of BOP could address the main challenges in low participation and access to ECD centers. Furthermore, the government needs to issue MSS (Minimum Service Standards) for ECD center to apply consistent standard and practices in ECD services that aims to achieve quality output and uniformity of performance. MSS can similarly be used as a basis for district to allocate and manage resources. Like other education providers, capacity of ECD center should be further supported in better planning and managing BOP PAUD to achieve those MSS(s).

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