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Background Study for the Preparation of the *RPJMN* for Education 2015 – 2019

Part 1

Basic Education, Early Childhood, Access and Quality

2015

Background Study for the Preparation of the *RPJMN* for Education 2015 - 2019

Part 1: Basic Education, Early Childhood, Access and Quality

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The Background Study is a series of chapters covering key issues in the education sector from Early Childhood through to Higher Education. Each chapter reviews progress and achievements over the past five years and identifies challenges for the future together with proposed directions.

The chapters were prepared jointly by Bappenas staff of the Education and Religious Affairs Directorate and a small team of national and international experts. The preparation of the Background Study was enriched by a series of Focus Groups, Workshops and Consultations in Jakarta and Regional areas involving key stakeholders from all levels of government, also civil society members, teachers, academics and non-government organization representatives.

The Background Study is intended to be a useful summary document of achievements and challenges. It does not claim to be definitive and the views expressed in the document do not represent the views of the Government of Indonesia nor any other particular organisations.

Chapters of the Study have been grouped in two books for the ease of the reader. However, it must be recognized that issues such as access, education governance, education financing, teacher quality and quality assurance impact across the whole sector.

Part 1 contains the following chapters: Access to Quality Education; *Kurikulum 2013*; Character Education; Quality Assurance and Minimum Service Standards for Basic Education; Quality of Student Learning as Measured by National Exams; Quality of Student Learning as Measured by International Tests; Early Childhood Education and Development; and Teacher Quality and Management.

Part 2 contains the following chapters: Achieving Universal 12 Years of Education; Higher Education; Upgrading the Skills of the Labor Force in Indonesia; Strengthening Skills Providers and the Training Environment for Enhanced Productivity in Indonesia; Education Financing; and Governance and Education.

Background Study for the Preparation of the *RPJMN* for Education 2015 – 2019

Part 1

Basic Education, Early Childhood, Access and Quality

Foreword

We give praise to God the Almighty for blessing us in the completion of the Background Study for the Preparation of the *RPJMN* for Education Plan 2015-2019. This analytic work serves as one of the inputs for the development of the Technocratic Draft of the Plan (*RPJMN*) and will guide our efforts to constantly improve the quality of education for all Indonesians.

The overall approach to the Background Study has been to review current achievements, challenges faced, policy options and proposed directions for each sub-sector - early childhood, basic, secondary, vocational and higher education.

Specific issues examined within the sub-sectors included: *access* to quality education, review of the *inputs* to education (e.g. minimum service standards, character education and the quality of the teaching workforce); analysis of the *learning outcomes* (as measured by national exams and international tests); and the *environment for provision of quality education and skills training* including the financing and governance of education and the role of the private sector in education, especially in vocational skills training and in higher education.

The Background Study drew on a considerable body of contemporary education research in Indonesia. Additional secondary research was commissioned to fill in gaps and to address emerging issues such as the options for universal 12 years education and strengthening skills for the labour market. The complete Background Study is the product of an iterative cycle of analysis and consultation with counterparts and stakeholders drawn from government at national and local levels, education institutions, research institutions, civil society organisations and development partners.The Study was greatly enriched by the wise counsel of present and former senior government officials and education academics.

I would like to acknowledge the contributions of the following –

Technical Coordinator:
Ir. Subandi Sardjoko, M.Sc., Ph.D. (Director of Education Bappenas)

Technical Team Members in Bappenas:
Ir. Suharti MA, Ph.D; Drs. Amich Alhumami, MA, M. Ed., Ph.D.; Suprapto Budinugroho, ST, M.Eng.; Kalihputro Fachriansyah, ST; Dimas Suryo Sudarso, S.Mn.

I would also like to express my appreciation to our international partners, namely the Australian Department of Foreign Affairs and Trade (DFAT) and the World Bank for their contribution of international experts in specific topic areas. The Analytical and Capacity Development Partnership (ACDP), jointly funded by DFAT and the European Union and managed by the Asian Development Bank (ADB) also contributed experts and played a key role in managing the consultation processes, translation, printing and logistics.

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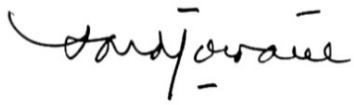
It has been my pleasure to lead and work alongside this very dedicated team and to engage with and learn from the many committed and enthusiastic members of the focus groups and discussions held across Indonesia.

Finally, I would also like to express my deep gratitude and appreciation to Prof. Armida S. Alisjahbana, MA, Ph.D., Minister of National Development Planning/Chair of National Development Planning Agency (BAPPENAS) and Ir. Lukita Dinarsyah Tuwo, MA, Ph.D., Vice Minister of National Development Planning/Vice Chair of National Development Planning Agency (BAPPENAS) of the Cabinet United Indonesia II, 2009-2014, for their valuable guidance and support in the implementation of this Education Sector Review. I would also like to convey my great appreciation to Prof. DR. Fasli Jalal, Ph.D., Dr. Ir.Taufik Hanafi, MUP, Wolfgang Kubitzki Principal Social Sector Economist, Asian Development Bank and Ms Hannah Birdsey Counsellor Education and Scholarships from the Australian Department of Foreign Affairs and Trade, for their rich and valuable contributions in numerous discussions when the Background Study was first initiated and during implementation.

My earnest wish is that this document will provide guidance and direction for the government and stakeholders and that it will also stimulate continuing and robust enquiry into the very complex issues which affect the delivery of quality education for all Indonesians.



Dra. Nina Sardjunani, MA

Deputy Minister for Human Resource and Cultural Affairs,

Ministry of National Development Planning/National Development Planning Agency

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Abbreviations

ACDP	Analytical and Capacity Development Partnership
AIDS	Acquired Immune Deficiency Syndrome
AK	*Akademi Komunitas* (Community Academy)
APBD	*Anggaran Pendapatan dan Belanja Daerah* (sub-national budgets)
APBN	*Anggaran Pendapatan dan Belanja Nasional* (central government budget)
AQRF	ASEAN Qualifications Reference Framework
ASEAN	The Association of Southeast Asian Nations
ATMI	*Akademi Tehnik Mesin Industri* (Technical College for Mechanical Engineering)
BAN-PT	*Badan Akreditasi Nasional Perguruan Tinggi* (National Accreditation Board for Higher Education)
BAN-SM	*Badan Akreditasi Nasional Sekolah Menengah* (National Accreditation Board for Senior Secondary Education)
BEC-TF	The multi-donor Basic Education Capacity Trust Fund
BERMUTU	Better Education through Reformed Management and Universal Teacher Upgrading
BKB	*Bina Keluarga Balita* (Under-five Child Family Development)
BKD	*Badan Kepegaiwan Daerah* (Regional Employment Board)
BKN	*Badan Kepegawaian Nasional* (National Employment Board)
BLK	*Balai Latihan Kerja* (Vocational Centres)
BLU	*Badan Layanan Umum* (Public Service Agency)
BOPTN	*Biaya Operasional PTN* (Operational Cost for Public University)
BOS	*Bantuan Operasional Sekolah* (School Operational Assistance Grant)
BOSDA	*Bantuan Operasional Sekolah Daerah* (Local School Grant)
BPKB	*Balai Pengembangan Kegiatan Belajar* (Center for Learning and Development Activities)
BRIICS	Brazil, Russia, India, Indonesia, China and South Africa
BSM	*Bantuan Siswa Miskin* (Program of assistance for poor students)
BSNP	*Badan Standar Nasional Pendidikan* (National Education Standards Agency)
CAS	Creativity, Action, Service
CIMU	Central Independent Monitoring Unit
CME	Civics and Moral Education
CPD	Continuous Professional Development Program
CREATE	Consortium for Research on Educational Access, Transitions and Equity
CSR	Corporate Social Responsibility
DACUM	Develop A Curriculum
DAK	*Dana Alokasi Khusus* (Special Allocation Fund)
DAPODIK	*Data Pokok Pendidikan* (School Self Evaluation and Essential School Data)
DAU	*Dana Alokasi Umum* (General Allocation Fund)
DBH	*Dana Bagi Hasil* (Shared Fund)
DFID	UK Department for International Development
DGHE	The Directorate-General of Higher Education
DID	*Dana Insentif Daerah* (Regional Incentive Fund)
DITJEN DIKTI	*Direktorat Jenderal Pendidikan Tinggi* (Directorate General of Higher Education)
DIPA	*Daftar Isian Penggunaan Anggaran* (Ministry Budget Implementation Documents)
DISNAKER	*Dinas Tenaga Kerja* (Local Government Labour Office)
DKI	*Daerah Khusus Ibukota* (Capital City Special region)
DSF	Decentralization Support Facility

EAP	East Asia and Pacific
EBTANAS	*Evaluasi Belajar* (national exam prior to the current *Ujian Nasional*).
ECER	The Early Childhood Environment Rating Scale
EMIS	Education Management Information Systems
EQAS	Education Quality Assurance System
ESCS	Economic, Social and Cultural Status
EU	European Union
GDP	Gross Domestic Product
GER	Gross Enrollment Ratio
GoI	Government of Indonesia
GPI	Gender Parity Index
GRDP	Gross Regional Domestic Product
GTT	*Guru Tidak Tetap* (Public school-hired teachers)
GTY	*Guru Tetap Yayasan* (Permanent foundation-hired teachers
HI ECED	Holistic and Integrated Early Childhood Education Development
HIV	The Human Immunodeficiency Virus
HPEQ	Health Professional Education Quality
HRDF	Human Resource Development Fund
ICCS	International Civics and Citizenship Study
ICT	Information, Communication and Technology
IDR	Indonesian Rupiah
IEA	International Education Association
IGTKI	*Ikatan Guru Taman Kanak-kanak Indonesia* (Association of non-formal ECED and Kindergarten teachers)
ILEGI	Indonesian Local Education Governance Indicator
IMF	International Monetary Fund
INAP	Indonesian National Assessment Program
INPRES SD	*Instruksi Presiden untuk Sekolah Dasar* (Presidential instruction for the elementary school construction program)
INSTIPER	*Institut Pertanian STIPER Yogyakarta* (Yogyakarta Institute of Agriculture)
IPB	*Institut Pertanian Bogor* (Bogor Institute of Agriculture)
ITB	*Institut Teknologi Bandung* (Bandung Institute of Technology)
ITS	*Institut Teknologi Surabaya* (Surabaya Institute of Technology)
JPS	*Jaringan Pengaman Social* (Social Safety Net)
KB	*Kelompok Bermain* (Play Group)
KKG	*Kelompok Kerja Guru* (Teacher Working Group)
KTSP	*Kurikulum Tingkat Satuan Pendidikan* (School-based curriculum development)
LAM	*Lembaga Akreditasi Mandiri* (Independent accreditation agencies)
LKP	*Lembaga Keterampilan & Pendidikan* (Institute for Skills development and Education)
LMIC	Lower middle income
LMS	Learning Management System
LPMP	*Lembaga Penjaminan Mutu Pendidikan* (Institutes for Education Quality Assurance)
LPTK	*Lembaga Pendidik dan Tenaga Kependidikan* (Teacher Pre-service Training Institutes)
M&E	Monitoring and Evaluation
MenPanRB	*Menteri Pendayagunaan Aparatur Negara* (Minister of State Apparatus and Bureaucratic Reform)
MET	Measures of Effective Teaching
MGMP	*Musyawarah Guru Mata Pelajaran* (Subject Teachers Forum)
MI	*Madrasah Ibtidayah* (private Islamic elementary school)
MoEC	Ministry of Education and Culture
MoF	Ministry of Finance
MoHA	Ministry of Home Affairs

MoMT	Ministry of Manpower
MOOC	Mass Open Online Courses
MoRA	Ministry of Religious Affairs
MoU	Memorandum of Understanding
MP3EI	Masterplan for Acceleration and Expansion of the Indonesia Economic Development
MSS	Minimum Service Standards
MT	*Madrasah Tsanawiyah* (private Islamic junior secondary school)
MWA	*Majelis Wali Amanat* (Board of Trustees)
NER	Net Enrolment Ratio
NGO	Non-Governmental Organization
NPSD	National Program for Skills Development
NQF	National Qualifications Framework
NSPK	Norms, Standards, Procedures and Criteria
NUPTK	*Nomor Unik Pendidik dan Tenaga Kependidikan* (Teachers' unique ID number)
DL	Open and Distance Learning
OECD	The Organisation for Economic Co-operation and Development
OMR	Optical Mark Recognition
P2TKPAUDNI	*Pembinaan Pendidik dan Tenaga Kependidikan, Pendidikan Anak Usia Dini, Non-formal dan Informal* (Professional Development program for educators and personnel in the ECED, Non-formal Education and Informal Education sectors)
P4TK	*Pusat Pengembangan Pemberdayaan Pendidik dan Tenaga Kependidikan* (Centres for Development and Empowerment of Teachers and Education Personnel)
PBPU	*Program Bantuan Peningkatan Mutu* (Quality Enhancement Support Program)
PBS	*Pengakuan Sebelum Belajar* (Recognition of prior learning)
PE	Physical Education
PEDP	Polytechnic Education Development Project
PENS	*Politeknik Elektronika Negeri Surabaya* (Surabaya National Electronics Polytechnic)
PerMenPanRB	*Peraturan Menteri PANRB* (Regulation from the Minister for State Apparatus and Bureaucratic Reform)
PIRLS	Progress in International Reading Literacy Study
PISA	Program for International Student Assessment
PKG	*Penilaian Kinerja Guru* (annual appraisal of work performance)
PMDK-PN	*Penelusuran Minat dan Kemampuan Politeknik Negeri* (national selection for public polytechnics by invitation)
PMU	*Program Menengah Universal* (Program for universal 12 years education)
PNS	*Pegawai Negeri Sipil* (civil servant)
PODES	*Pendataan Potensi Desa* (Statistical indicator of village potential)
PolMan	*Politeknik Manufaktur* (Polytechnic for the manufacturing industries)
POM	Performance Oversight and Monitoring (for the DFAT Education Partnership Program)
Posyandu	*Pos Pelayanan terpadu* (Integrated Services Post)
PP	*Peraturan Presiden* (Presidential Decree)
PPAS	*Program Peningkatan Akses* (Program to increase access to junior secondary education)
PPP	Public–Private Partnerships
PTN-BH	*Perguruan Tinggi Negeri-Berbadan Hukum* (Autonomous university)
QA	Quality Assurance
QSL	Quality of School Life questionnaire
RENSTRA	*Rencana Strategis* (strategic plan)
RCGP	Central Government within the Province
ROHIS	*Kelompok Rohani Islam* (Islamic Student Spiritual Mentors)
RPJMN	*Rencana Pembangunan Jangka Menengah Nasional* (National Medium Term Development Plan)
RPL	Recognition of Prior Learning

RSBI	*Rintisan Sekolah Berbasis Internasional* (International Standard Pilot School)
SD	*Sekolah Dasar* (Elementary School)
SMA	*Sekolah Menegah Atas* (Academic Senior Secondary School)
SME	Small to Medium Enterprise
SMK	*Sekolah Menengah Kejuruan* (Vocational Senior Secondary School)
SMP	*Sekolah Menegah Pertama* (Junior Secondary School)
SNMPTN	*Seleksi Nasional Masuk Perguruan Tinggi Negeri* (National Entrance Test for Public Universities)
SPN	*Standar Pendidikan Nasional* (National Education Standards)
SSC	Sector Skills Councils
SSE	School Self Evaluation
SSN	National Standard Schools
Susenas	*Survei Sosial dan Ekonomi Nasional* (National Social and Economic Survey)
TAPP	*The Aceh Politeknik Program*
TIMSS	Trends in International Mathematics and Science Study
TK	*Taman Kanak-Kanak* (Kindergarten)
TMOE	Taiwan Ministry of Education
TP	*Tugas Pembantuan* (Assistance Task)
TPA	*Day Care Center*
TVET	Technical and Vocational Sector
UAS	*Ujian Akhir Nasional* (National Exams)
UGM	*University of Gajah Mada*
UI	*University of Indonesia*
UK	United Kingdom
UKG	*Uji Kompetensi Guru* (Competency Testing)
UKK	Promotion Examination
UN	*Ujian Nasional* (National Exam)
UNESCAP	The Economic and Social Commission for Asia and the Pacific
UNESCO	The United Nations Educational, Scientific and Cultural Organization
UT	*Universitas Terbuka* (Open University)
UU	*Undang Undang* (Law/Legislation)
WB	The World Bank
WPB	Work Plan and Budgeting

Overview

The role of education in achieving the broader goals of the RPJMN

Education can play a key role in achieving the overarching goal of the *RPJMN* for inclusive and sustainable development. Underlying this goal are three key principles. First, the plans outlined in the RPJM must be economically feasible and support strong economic growth. Second, the development path over the next five years must be socially acceptable. It will need to improve social harmony, encourage community participation and narrow inequalities across regions and between socio-economic groups. A third key principle underlying the RPJM is the need for greater sustainability and the need to protect the environment for future generations. A strong, vibrant and good quality education system can support all of these underlying principles.

The education sector can contribute significantly to the improvements in economic productivity required to sustain higher rates of economic growth. The provision of good quality education can equip all citizens with the skills the economy needs to raise productivity and prosper in a region that is becoming increasingly more competitive. Recent international research shows that ensuring all children leave school with strong foundation skills can raise annual per-capita growth by up to one percentage point. This shows the importance of the role that education can play in supporting the transformation necessary if Indonesia is to maintain its strong record of economic growth and avoid the middle-income trap other countries have fallen into.

A strong and good quality education system can also lay the foundation for more inclusive development. Over the last five years, income inequality has been growing across regions and between different groups in Indonesia.Disparities in access to education are likely to be an important causal factor driving these growing inequalities. Failure to tackle this growing inequality has the potential to both lower future economic growth and also sow the seeds of future social tensions. Providing good quality educational opportunities to all children, regardless of the circumstances that they are born into, can reduce inequality and give children the skills they need to participate constructively in Indonesia's economy and its lively democracy.

Education can also be an important vehicle for promoting social harmony and building an environmentally responsible nation. It has a vital role to play in promoting social cohesion and building a peaceful and secure Indonesia. Schools can provide children with the skills and understanding needed to live peacefully and to build an awareness and tolerance of the religious, ethnic and linguistic diversity of Indonesia.Schools are ideal places to highlight the importance of sustainability and to foster in young people personal behaviors that protect the environment for future generations. The education system can also support the development of the skills needed to encourage the necessary innovations to better adapt to the impacts of environmental change that will be seen in the coming years.

Strengthening the education system is imperative if Indonesia is going to fully exploit the opportunities that are likely to arise over the next five years. Between 2013 and 2025 the share of the population that is of working age will continue to increase. In the region as a whole, declining dependency ratios have been associated with more rapid per-capita growth because of the increased proportion of the population that is employed. The size of this demographic dividend will depend in part, on the ability of the education system to impart the skills the economy needs before the dependency ratio begins to increase again. Recent trends suggest that this will require improving access to post-basic education opportunities: since 2001, approximately 75% of the new jobs created have been for entrants with senior secondary or tertiary education. These trends are likely to continue with the closer integration of the ASEAN community.

Key strategies to underpin the steps towards 12 years quality education

Ensuring all children receive 12 years of good quality primary and secondary education is a key step towards Indonesia's objective of inclusive and sustainable development. A good quality primary and secondary education system provides the basic cognitive and behavioral skills that employers are demanding and which labor market entrants increasingly need to be successful. It also provides young adults with a strong foundation to continue their studies to the tertiary level. While there are many strategies that will be needed to universalize access to 12 years of education they may be seen to fall under 4 main areas:

1. **Raising the quality of primary and secondary education**. Despite a considerable reform effort, international assessments of student achievement show that the quality of the education system remains low. Efforts to improve the quality of education need to be reinvigorated otherwise universalizing access to 12 years of education will not bring about the expected benefits in terms of development. While the required focus of quality improvement is in primary and secondary schools it is also important to strengthen early childhood development to ensure all children are ready to learn when they start primary school.
2. **Increasing equitable access to senior secondary schooling**. There are approximately 6 million children who do not complete 12 years of education. The challenge of extending opportunities to these children is enormous and will require a combination of increased supply as well as a range of demand side measures to support children from poor households.
3. **Improving access to good quality educational opportunities for all.** In order to universalize access to 12 years of good quality education it is vital to develop effective strategies to support regions and population groups that lag behind. Despite significant gains in educational attainment amongst poor and vulnerable households over the last 10 years, a concerted effort is still required to reach children that are being left behind.
4. **Raising the efficiency of the education system.** Efforts to raise levels of attainment and increase the quality of education will not be successful without adequate investment. However, a large part of the required investment will need to be realized from efficiency savings in the current education budget as well as strengthening partnerships with the private sector.

Strategies aimed at achieving good quality primary and secondary education can also support the *RPJMN* goals for tertiary education. Increasing demand for tertiary education graduates in the labor market implies a need to expand access. In particular, the overarching *RPJMN* goal of inclusive development places a priority on expanding tertiary access for the poorest households. In order to do this, it is vital that children from poor and vulnerable families are able to complete a full cycle of good quality primary and secondary education. Ensuring that the governance of tertiary education institutions enables good quality provision that is relevant for the labor market, is also a critical challenge for the *RPJMN*.

Achievements in the education sector over the last 5 years

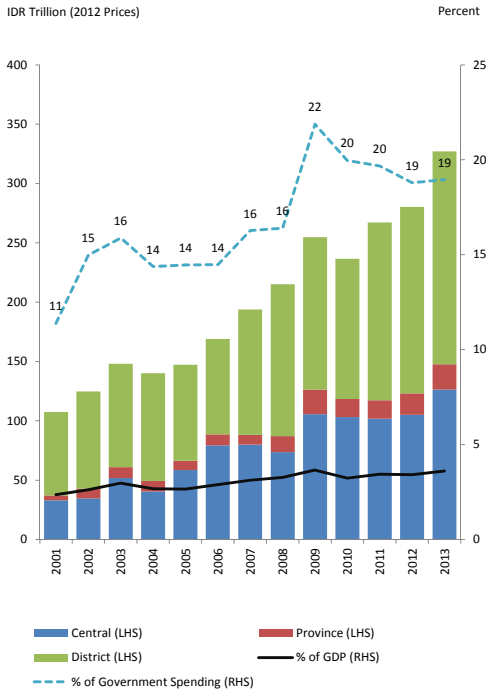
Over the last ten years, significant progress has been made in implementing a comprehensive education reform agenda. In 2001, the responsibility for many aspects of basic education service delivery was devolved to local governments. Further reforms were introduced in 2003 that provided the legal basis for school based management and formalized school committees in an effort to encourage local community participation and to strengthen accountability of schools to their communities.The Teacher Law of 2005 addressed shortcomings in teacher pay and quality by introducing certification and a strengthened program of continuous professional development. At the same time, the national school grants program (BOS) was rolled-out and gave schools vital resources to support their adoption of earlier school based management reforms. These three reforms brought the Indonesian system of education in line with modern education world-wide.

Across all subsectors of education services, the government also developed processes for quality assurance including introduction of minimum service standards, expansion of the program for accreditation of the school and higher education sectors, new laws for governance of the higher education sector, performance assessment of teachers and the framework for continuous professional development (CPD) of principals.

Despite significant global turmoil in 2008, the reforms above were backed up with substantial increases in public education investments. In 2009, a constitutional obligation to devote a fifth of the national budget to education was achieved for the first time. This resulted in a more than doubling of public education spending in real terms between 2001 and 2009, a rate seen in few other countries. Since then, public investment in education has continued to grow rapidly. Over the last four years (2009-2013), increases in the overall national budget have supported annual growth in public education spending of about 6.5 percent in real terms (Figure 1).

Figure 1. Public expenditure on education, 2001-2013

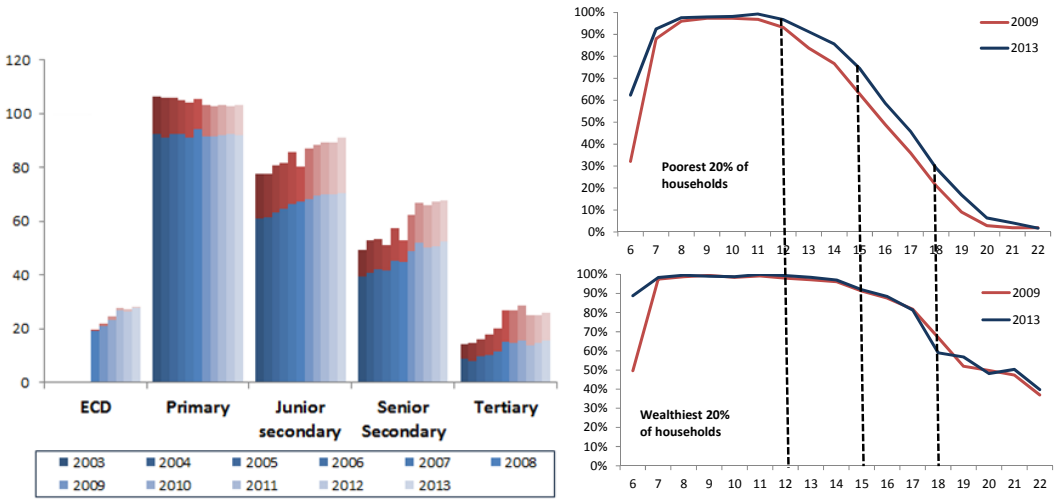
Source: 2010-2013 revised plan budget laws, MoF, BPS for Susenas and GDP and CPI deflators



The reforms and increases in public investment have led to an expansion of educational opportunities, particularly for the poorest children. Universal primary enrolment has largely been achieved and by 2013, almost all children, including the poorest were in school between the ages of 7 and 12. Enrolment rates in secondary schooling also increased significantly (Figure 2) and are now comparable to other lower middle income countries. Enrolments in tertiary education have continued to rise. Overall, the share of 6 -22 year olds enrolled in education has increased from 66 percent in 2006 to 73 percent in 2013. This means that since the beginning of the current RPJM (2010) an additional 7 million children and young adults have enrolled in the education system.

The improved participation rate has been driven mainly by the increased participation in education of children from the poorest households and has led to significant reductions in educational inequality (Figure 2). While enrolment for the wealthiest children has remained high and largely unchanged over the current RPJM, enrolment rates for children from the poorest households have increased significantly. For example, the share of 15 year olds in the poorest 20 percent of Indonesian households enrolled in school has increased from 63 percent to 74 percent between 2009 and 2013. A similar trend for poor and wealthy households can be observed for later ages and illustrates the reduction in inequality seen over this period. However, significant enrolment gaps remain. For example, in 2013, 59 percent of 18 year-olds in the wealthiest households were still in school compared to 29 percent in the poorest households.

Figure 2. Education participation rates, 2003-2013

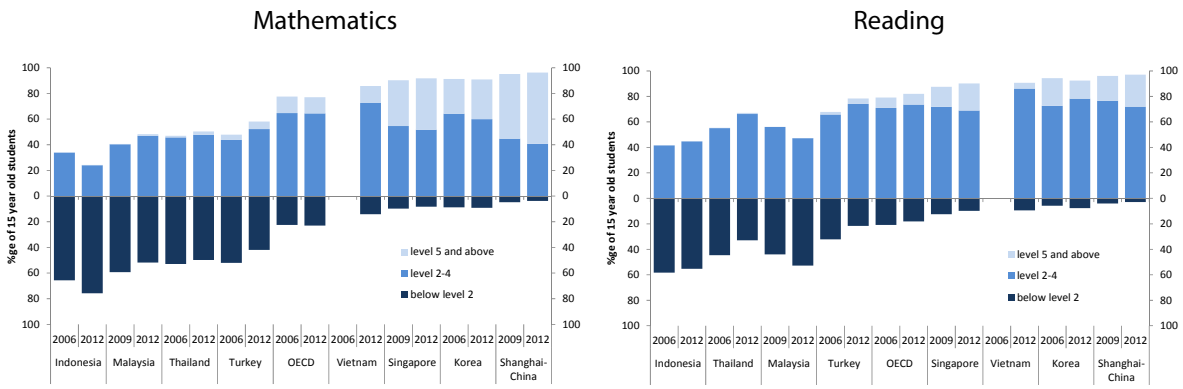


Source: Susenas, 2003-2013

While increased investment has led to some notable achievements in increasing educational opportunity, changes in learning achievement have been more mixed. The teacher law and the certification program have increased the proportion of teachers with a bachelor's degree from 36 percent to 63 percent between 2006 and 2012. This improvement in teacher qualifications is expected to improve the quality of teaching in the long-term. However, Indonesia has performed relatively poorly in international learning assessments when compared to other countries. For example, Indonesia fell below other countries in the region such as Thailand and Malaysia in the 2012 OECD PISA assessment. Trends in learning also show a mixed picture. Since 2006, learning achievement amongst Indonesian 15-year olds has improved in Reading but has not shown improvement in Mathematics and Science.

Average levels of learning hide significant differences across countries in mathematics and reading proficiency levels (Figure 3). In Indonesia, the majority of 15 year-olds fall below level 2 proficiency, a level that is associated, in some countries, with difficulties for students wishing to continue into higher education or transition into the labor force. In 2012, three-quarters of Indonesian students were at level 1 or below where students are able to do 'very direct and straightforward mathematical tasks, such as reading a single value from a well-labeled chart or table'. Trend analysis also shows a drop in mathematics proficiency levels between 2006 and 2012.

Figure 3. Share of students at each PISA proficiency level in mathematics and reading in selected countries, 2006 and 2012



Source: OECD PISA 2013

Data from national examinations show significant disparities in learning between students, schools and regions. For example, students who have parents with low levels of education or low incomes tend to do less well at school. Moreover, female students tend to do better in national examinations than their male counterparts. These findings highlight the need to provide all children with access to good quality education opportunities in order for them to fulfil their full potential.

A comparison between the achievements and the increases in spending on education over the last five years highlights a concern over efficiency in the sector. In particular, a large proportion of additional education spending has been directed towards hiring new teachers and paying them more through professional allowances associated with the national teacher certification program. While increased spending on teachers has put significant additional burden on the education budget it is not clear that it has had an impact on education outcomes and particularly learning achievement. Weaknesses in the mechanisms used to allocate resources to local governments and schools have also reduced the impact of public spending increases on education outcomes.

Key challenges that must be addressed in the next five years

On the 2014 Pearson Learning Curve rating, which is a composite score based on international test results and assessment of adult competencies, Indonesia is ranked at 40/40. One of the key lessons identified by the Pearson Report which is pertinent for this moment in Indonesia is that "*developing countries must teach basic skills more effectively before they start to consider the wider skills agenda. There is little point in investing in pedagogies and technologies to foster 21st century skills, when the basics of numeracy and literacy aren't in place*".

With this in mind, a **strong focus on the quality of basic education is still needed** and the key priority for the next five years must be to improve the learning outcomes of students from schooling, from vocational skills training and from the higher education sector**.** High pass rates and high graduation rates have for many years masked the real level of achievement.Improvement and expansion to 12 years universal education will not deliver the desired individual or national outcomes if the quality is not really there.

A necessary step in improving learning outcomes should be **careful consideration of the whole system and culture of learning assessment,** including the exams, system monitoring of outcomes and school level assessment. The national exams appear to have the point where the imperatives to maintain high pass rates have seriously distorted the examination process and the results have little value. School marks are being awarded by teachers to ensure that all students pass and in doing so, provide a disproportionate bonus to the less able and lower performing students. While some may see this as an equalizing strategy across the disparate regions of Indonesia, it is unfair to students who have worked hard and earned their exam marks. The imperative for all to pass is also one of the factors which sustain cheating, which in turn generates a high cost in human, social and fiscal terms and diminishes community confidence in the education system. The choices for government will be to reform and properly resource improvements to the existing assessment system or institute a totally new system of assessment. This is a hugely controversial area with many opposing ideologies but **it will be very difficult, and maybe impossible, to drive effective improvement in teaching and learning in the absence of valid and reliable assessment on which to base improvement efforts and for monitoring progress.**

If the quality of learning outcomes is not addressed with some urgency, and in a sustained and systematic way, **the current low quality of learning outcomes could hold the nation back**.For example, the potential of the anticipated demographic bonus will not be realized if the mass of students entering the workforce do not have adequate basic skills. The opening up of trade in the ASEAN community will create pressure for all countries to be more competitive and Indonesia must avoid the scenario in which it becomes primarily a source of semi-skilled labour in Asia, instead of leading in innovation, entrepreneurship and application of technologies.

The introduction of a new curriculum in 2013 had wide ranging and ambitious objectives for quality and relevance, including to drive new pedagogy and assessment, but the agenda was also driven by political

imperatives which did not allow sufficient time for consultation, review, trialling and preparation. Not surprisingly *Kurikulum 2013* became highly controversial and is now under review. In moving forward on curriculum and assessment it is most important that the new government recognises the prime role of national standards and the subsidiary roles of curriculum and assessment as tools for quality teaching, quality learning and system monitoring.

In preparing young people for the workforce and for productive lives, the education system must include deliberate teaching of non-cognitive skills including character skills and the so-called 21st century learning skills.A considerable body of educational research suggests that **non-cognitive skills** (e.g. persistence, self-discipline, effective communication) **are equally if not more influential than academic skills in predicting post-school outcomes**. While there are many different approaches in which schools can develop character skills, including religious education, a key message from meta-analysis of relevant research is that good teaching, effective leadership and a positive school climate can develop character skills naturally as part of the effective teaching of academic skills. The implication of this is that real reform in teaching can have a positive flow-on effect to the personal quality of school graduates , the well-being of the country and its economic status in the region.

The reform of the teaching process can happen **school by school, day by day, through the way that individual teachers, principals, supervisors and district officials view their job and take responsibility for their actions**. This approach is consistent with the *Mental Revolution* proposed by President Joko Widodo, which calls for a **new mindset in which citizens, including teachers and education officials, are empowered to make moral choices and behave in ways that will improve teaching and learning.** Principals, school supervisors and teachers themselves must be the leaders of change in this organic school-by school process which reaches into to every classroom.

Principals and teachers however cannot do this alone. They must be supported by **a system that values and supports teachers** through its selection methods, pre-service training, induction, school-based development procedures and effective performance management. National and local government must work together to ensure more effective management and deployment of the teaching workforce. This will result in more students having quality teachers who feel valued and act as professionals.

Part of the system-change required is to focus on school improvement. There are several, disconnected systems and tools for school quality assurance and accreditation. These need to be streamlined, aligned and implemented more rigorously, with appropriate incentives for improvement, sanctions for inaction and positive support for change. A key tool, the **Minimum Service Standards (MSS)** is not well understood and needs to be reviewed and reinforced as a responsibility of local government. From the 2013 MSS survey, around 70 percent of all schools did not meet MSS for text books and enrichment books and 40 percent did not have the required resources for teaching science. On these and other indicators, the MSS survey showed very large **differences between public and private schools**, highlighting a serious issue of inequity between the systems which has yet to be addressed effectively.

Having qualified, competent and motivated teachers and leaders in every school is the key to improving learning. Given the huge investment in teacher upgrading nation-wide, this is clearly achievable if there can be system adjustments to the way that school staffing entitlements are calculated and the ways that teachers are distributed and supported.

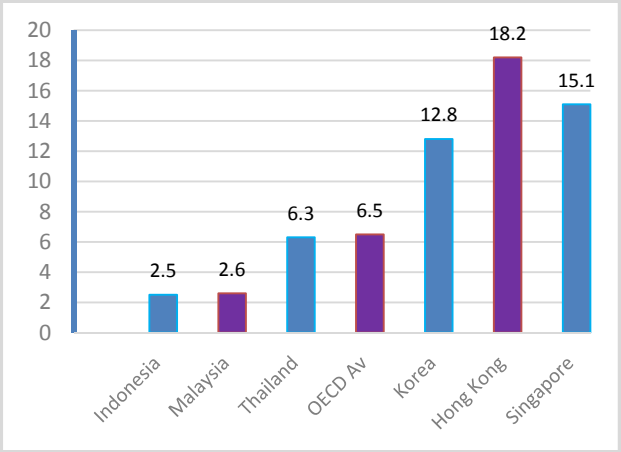
Even in the current situation, school level processes specified by the MSS should not be costly to improve (e.g. ensuring that every teacher has a lesson plan for every lesson, ensuring that principals visit classrooms and give constructive feedback to teachers) but will require principals and supervisors to provide professional leadership, support and supervision. This is lacking in many schools. Empowering parents and communities and encouraging their active engagement in schools, including in school committees and in school self-evaluation, will ensure they are better informed and better able to support school improvement.

The natural starting point for increased parent engagement in education is in **the early years of child development,** including education and support for good pre-natal care and child nutritution and the continuing expansion of quality community based early childhood development centres. These are all

examples of community-based programs which should be supported by a joint health-education approach in order to facilitate improved access, especially by the poor, to good quality pre-primary education. Students who have two years of good quality pre-primary education will start school prepared for learning and continue to achieve more highly than those who missed that opportunity. The results on PISA tests of 15 year olds in Indonesia show that having two years of pre-primary education confers a benefit of 41 points, equivalent to being one year ahead in schooling, or 29 points if adjusted for socio-economic status. But sadly, twice as many rich students as poor students have this advantage. Poor students are more likely to start school late, experience early learning failure and repeat a grade - all factors which are associated with subsequent learning failure, drop out and, as a consequence, will continue the cycle of poverty.

The lasting impacts of socio-economic disadvantage on learning are also seen in analyses of the Indonesian PISA test results by equity quartile. The likelihood of a disadvantaged 15 year old "beating the odds" and scoring in the top performance quartile is described as an index of student resilience. On the Indonesian sample, a very low percentage of students, just 2.5 percent, who are top scorers on the PISA tests come from the bottom socio-economic quartile.

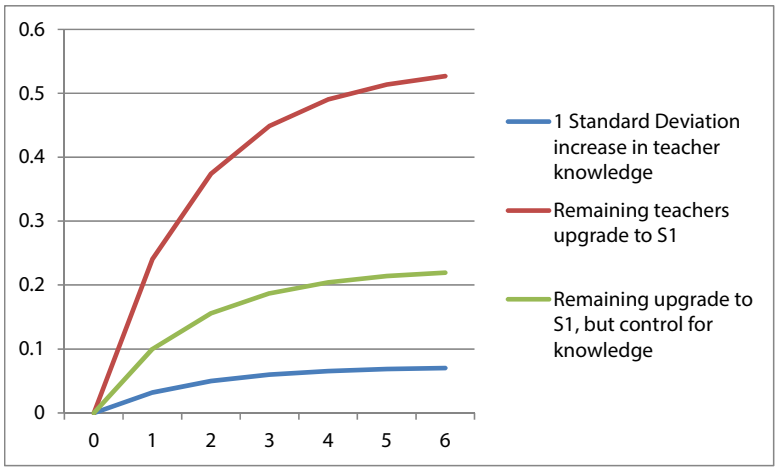
Figure 4. PISA calculations of student resilience based on the percentage of top-scoring students coming from the lowest socio-economic quartile



Evidence of continuing inequity in the quality of education offered and in the learning outcomes of students suggests that the increased investment of the past 5 years has not delivered the desired results. The most disturbing example is the lack of evidence , thus far, of teacher reforms demonstrating positive impacts on either teachers' competence, or students' learning: the majority of teachers fail the competence tests, and principals and supervisors as a group score even lower than the staff they must supervise. In retrospect, it appears that a high level of system inefficiency and weak accountability have prevented good reforms and policy instruments from being fully implemented as planned. While the challenges of scale and the diversity in the operating environment are daunting, investment in improved teacher selection and training and in teacher management and support must be continued .

The Joint Decree on teacher management provides a way forward for district governments to implement more innovative solutions to address teacher support needs and teacher management issues. At the same time, it can be seen that improved remuneration and conditions for teachers are beginning to raise the quality of entrants to the profession.

Figure 5. Estimates of student learning over six years of Primary School based on teacher knowledge vs. degree



Source: De Ree, 2013

Clearly the higher education sub-sector in Indonesia has a key role in skilling the nation and in teacher improvement in particular. The higher education sector, like the school sector, has grown very rapidly. There are now over 3,500 institutions established, many of which are very small, private, poorly funded institutions which cannot provide quality programs and would in many other countries be regarded as unviable. A **more rigorous approach to accreditation and quality assurance** is needed to halt the proliferation of low quality institutions for higher education and to help improve the quality of all. There is also a problem of relevance in which many institutions (large and small) are not providing programs relevant to the skill needs of the country. Even in the area of teacher training, which has become a "cash-cow" for many institutions, many graduates emerge with little, if any, practical training in pedagogy and low subject knowledge, having been taught by lecturers who are not experts in classroom teaching. As is shown above in Figure 5, teachers' subject knowledge has a direct relationship with improved student learning.

Although enrolments in higher education have climbed steeply in response to both supply and demand factors, the enrolment is highly skewed across socio-economic profiles.While 66.6 percent of young people from the highest socio-economic quintile are enrolled in degree courses, just 2.5 percent of those from the lowest quintile are enrolled. These figures are an eerie reflection of the PISA resilience index of 15 year olds. Such inequity requires a range of affirmative actions, not just scholarships, to be applied throughout the full continuum of schooling in order to prepare young people from every social background to enter and be successful in higher education.

In addition to addressing inequity arising from factors such as poverty, isolation and cultural difference, the policy reforms needed to improve quality in higher education include rationalizing and strengthening the institutional focus and mission of institutions and strengthening their processes for quality assurance, which are currently weak. Institutional support is also needed to address management and administration, the quality and qualifications of lecturers and their teaching and research skills as well as the capacity of individuals and institutions to reach out and serve the needs of industry and the workforce.

Efforts and incentives to improve the relevance of higher education will enhance individual employability and the quality and competitiveness of Indonesian businesses and entrepreneurial ventures. Decisions about priorities and reforms in both institutional governance and relevance need to be informed by consistent policy and research.More autonomy in governance and improved funds channeling could provide the impetus for locally-driven initiatives and reform to improve the quality of university teaching and research, extend partnerships with industry and business and reach out to remote areas.

Like the higher education sector, skills training in the technical and vocational sector (TVET) has also expanded rapidly and is poorly regulated. It is described as having an "aura of chaos" with many issues and opportunities similar to the higher education sector: the quality and relevance of courses provided and the

skills of teachers need to be greatly improved. Good quality TVET has an important role in increasing equity of opportunity by ensuring multiple pathways, flexible entry and re-entry, lifelong learning and transportable qualifications and credits within a national qualifications framework. Within such a framework, a more entrepreneurial, demand-driven approach, oriented to local needs and opportunities as well as regional and global opportunities, should fairly quickly generate more positive outcomes for students and raise national productivity.

The agenda sketched briefly above requires intense effort and coordination from national and local government.As a consequence of both the rapid expansion of local government entities and for many, their remote location and isolation from expertise that could be provided by others, the result has been low capacity of local government to manage and weak systems for data collection, management and analysis. **The systematic use of evidence for decision-making at both national and local level is a dream yet to be realized**. Around 30 percent of local governments have been established in the last 10 years and many will need a decade to become fully effective. What is encouraging is that there is a strong link between **better quality local governance and better education performance**.

As the policy leader for education in Indonesia, the **national government** has huge responsibilities for management oversight of one of the largest education systems in the world. Understandably there are efficiency issues relating to timely disbursement of resources, ensuring that structures match functions, upgrading the workforce in qualifications, skills and work ethos, instituting performance management, reliable data collection and expert analysis to ensure a sound basis for decision-making. Planning for 12 years universal education, while at the same time improving the quality of the first nine years, is challenging and will require new ways of thinking and working. The greatest impact may come from developing systems with local government that will improve teacher allocation, distribution and support and identifying ways to free up misused resources and direct those to quality improvements. This will require systems improvement as well as a change in mindset.

Enhanced partnerships between levels of government and the public and private sectors is essential in this process. Given the imperative for quality improvement over the scale and diversity which characterizes Indonesia, it seems logical that **provincial governments will take a stronger role** in leading education monitoring and quality assurance. The recent law giving provincial governments responsibility for senior secondary teachers is a significant step towards this. A stronger role in education improvement may also require enhancement or restructure of existing institutions and networks including partnership with universities that would focus on education improvement. More effective funds channeling will also require enhanced partnerships between levels of government, as well as reduction in the complexity and number of grants and reporting requirements in order to promote flexibility and responsiveness to local conditions.

Recognising the limited fiscal envelope for the desired expansion and quality improvements, there is a need for development of more innovative Private-Public partnerships and different ways of sharing the costs or leveraging from existing investments. This could include effective incentives for the private sector and community organisations to become more engaged within agreed national frameworks and quality assurance mechanisms.

Quality assurance is going to be a key issue in moving forward on the expansion and policy agenda outlined in the Background Study. At school and institution level, the most effective approaches to quality assurance and quality improvement globally have been found to use both upward and downward pressure, and support. Increasing citizen demand, through more effective selection and training of School Committee Members, community stakeholders and employers, has been shown in many countries to be an effective way of accelerating improvement. Schools as learning communities flourish when they have both community and system support and a shared sense of vision and accountability.

Ideally the foundations for the changes envisaged in this sector review would be established in the first year of the *RPJMN* implementation and be reflected in the RENSTRAs at each level, providing a coherent and connected set of roadmaps across levels of government for the following 4 years. It is hoped that this Background Study provides relevant analyses and proposed directions which will be helpful in that process.

Chapter 1. Access to Quality Education

Introduction

Over the past four decades Indonesia has implemented a number of large-scale and highly ambitious policies to improve access to education. Beginning a major push in 1973 President Suharto launched an extensive school construction program (*INPRES SD*) to provide a primary school in every village in the country with the aim of achieving an enrolment rate of 85% in the next five years. (Republic of Indonesia 1974). At the end of a decade (1983) the gross enrolment rate enrolment was 121 %, and the net enrolment rate (including only age-appropriate students, age 7 – 12 years) reached 97.2 %. This achievement led to the announcement of a government commitment to six years universal basic education for all primary school-aged children. The policy commitment was supported by continuing construction of new schools, new classrooms for existing schools, recruitment of more teachers and school rehabilitation programs.

Universal basic education was extended in 1994 by Presidential Instruction No. 1/1994 which required all the relevant Ministries to collaborate to achieve universal nine-years of basic education. The aim was that all children should have access to junior secondary schooling by 2004. This was a significant challenge compared with the previous Instruction for six years basic education which was announced when the GER and the NER had already reached 121% and 97.2% respectively. In comparison, the universal nine years basic education program was launched when the enrolment rates for junior secondary level were still low with GER at 64.4% and NER at just 50%. Not surprisingly, after 10 years of implementation, the aim had not been realized. TheNER at junior secondary school was only 65.24% and the GER was 82.2% with about 16.5 % children aged 13 to 15 still out of school in 2004 (Suharti, 2013).

Massive school construction programs and teacher recruitment continued over the next decade and the enrolment rates improved year on year. However finally closing the gap has proved to be very difficult in view of the significant disparities associated with both the socio-economic status of children and the development status of regions.

This **problem of regional disparities still looms large** and is the biggest challenge in access to junior secondary schooling. Children from poor families and/or from rural areas have a significantly lower probability of continuing their education than their peers from more affluent families and those living in urban areas. Understanding the reasons for this at local level is the first step in strategic planning to finally close the gap.

A second, and related problem, is the **wide variation in the quality of education** that is being accessed. On two sample surveys of the level of compliance with Minimum Service Standards (MSS) huge differences are apparent on key indicators such as qualifications of teachers, the resources available for learning and the implementation of very basic supervisory and professional support functions within the school. The most recent survey in 2012[1] of the MSS in 5,280 schools in 104 districts found that no schools met all of the minimum standards. Some of these standards however could be met at very low cost with better management (e.g. about 40% of schools did not have all the teachers using lesson plans). Other standards would require investment in infrastructure and resources (e.g. only 22% of junior secondary schools had a science laboratory). It appears that only a minority of students, primarily those in the more affluent areas, are receiving an education at the level envisaged by the National Standards. Students from poor families and from disadvantaged areas are doubly disadvantaged by being poor and by being able to access only lower quality schools. Even when better quality schools are within reach, the exclusive admission practices of the more preferred and better resourced schools favour high performing students and those whose parents can pay the various unofficial levies associated with registration and enrolment. The result for many poor

families who make the commitment to nine years of education, is that the quality of the education is so low that the benefit they hoped for, to lift their children out of the cycle of poverty, will not be realised.

The main objective of this chapter is to provide the relevant analyses that will identify and underpin the policy directions for reducing the disparities in access to quality education.As far as possible the data used is from the Household Survey (SUSENAS) which is considered to be reliable and which also allows analysis at sub-district level and cross tabulation with socio-economic indicators. Other data sources are the Ministry of Education and Culture and research studies conducted by partnership programs such as the Analytical and Capacity Development Partnership (ACDP). The discussion in this chapter is divided into the following sections.

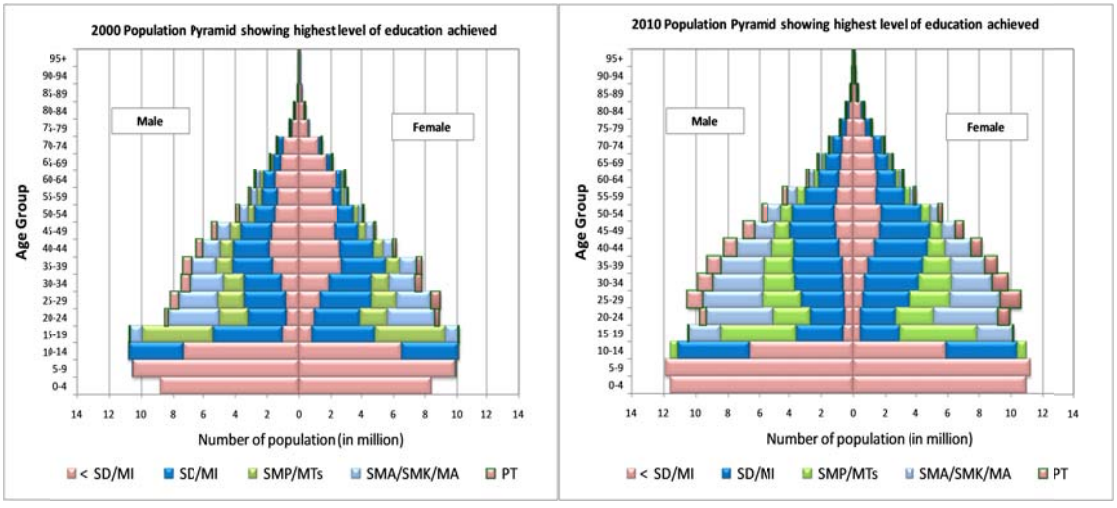
1. A summary of relevant trends in education attainment of the overall population.
2. Enrolment trends at primary and junior secondary school
3. Zones of Exclusion[2]as a model to identify the stages at which children are most likely to be vulnerable to discontinue their education as a result of forces beyond their control
4. Issues at transition points
5. The remaining Gender Gap
6. Supply side issues impacting on access to education.
7. Conclusions – achievements and challenges
8. Proposed policy directions.

1. Progress in raising the educational attainment of the population

1.1 Level of education of the population

The level of educational attainment in Indonesia has improved steadily in this century. Census data from 2000 found that among the 122.8 million of the population in Indonesian aged 19 years or over, 24.1% had never completed primary school and only about 31% had completed junior secondary school or higher. The latest census (2010) shows only 16.2% of Indonesians aged 19 years or over not completing primary school and about 50 % completing junior secondary school or higher. The population pyramid by education attainment for population aged 19 and over can be seen in Figure 6.The key differences in these two snap-shots can be readily seen by comparing the % of the population with junior secondary and senior secondary education as their highest attainment. Comparing both sides of the pyramids shows the improvements in gender parity.

Figure 6. Population aged 19 years or over (millions) by highest level of educational attainment and gender, 1990–2010



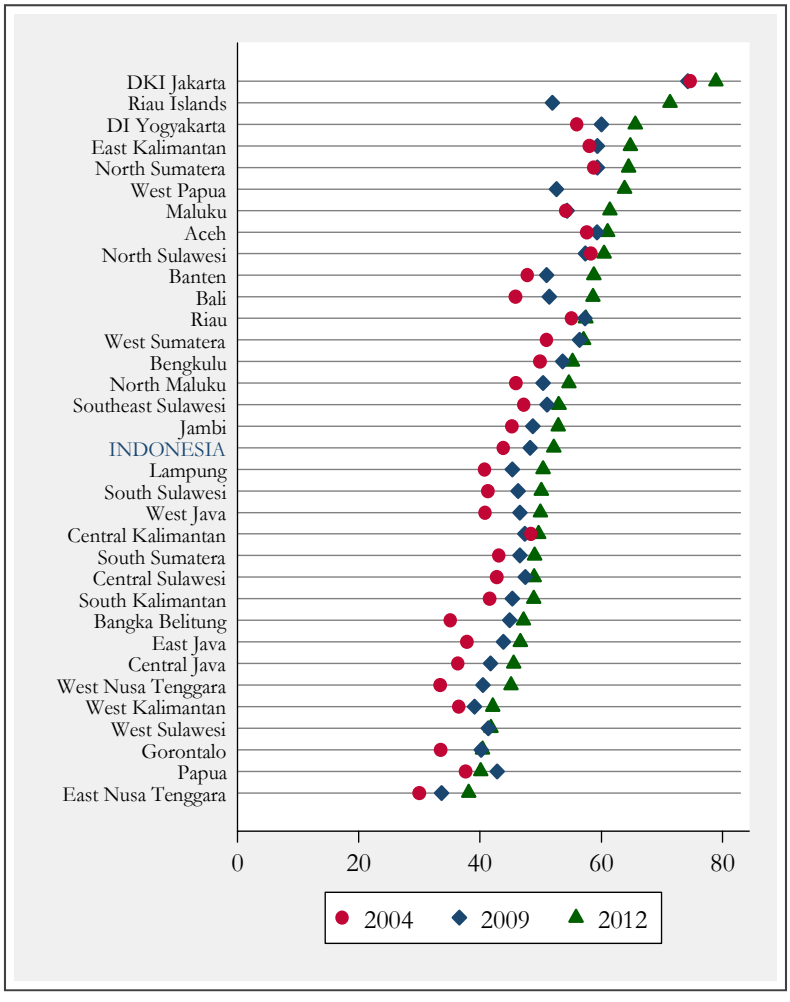
Source: Suharti, 2013

The improvement shown above in the level of education attainment among the adult population occured in all regions from 2004, through 2009 to 2012 however this was quite uneven across the country.

Figure 7 below shows the extent of variation across regions. For example, Jakarta Province had the highest proportion of the population having completed junior secondary or higher levels of education. In 2004, thiswas 75% and in 2012 it reached almost 79%. By comparison, West Nusa Tenggara, West Sulawesi, West Kalimantan, Gorontalo, Papua and East Nusa Tenggara are the provinces with the lowest proportion of the adult population having completed junior secondary or higher levels of education.

Differences are broadly associated with the development status of regions however there are some surprising features for which there are no readily apparent explanations, e.g. Central Java and East Java are not generally thought of as highly disadvantaged regions but are below the average Indonesian growth trend; given the increased investment and attention to education in Papua over the last 5 years it is surprising that the rate of achievement of 9 or more years of education decreased from 42.8 to 40% between 2009 and 2012. All other provinces howed a positive trend including Riau and West Sumatra but the differences there were quite small.

Figure 7. Trends in the of proportion of the population aged 15 or over achieving junior secondary education or higher, by province, in 2004-2009-2012



Source: Suharti's calculation using SUSENAS data 2004, 2009, and 2012

Average years of schooling completed by rural and urban segments

The gains in educational attainment are also evident in the increase in the average number of years of schooling completed by segments of the population aged 15 years or over. In two decades there has been agrowth of two and a half years, from 6.2 years in 1993 to 8.08 years in 2012 (Table 1). This is an impressive increase from 1993 when,on average, most people did not complete primary school, but by 2010 the majority had completed Year 8.

The gap between urban and rural populations continued but has narrowed over time. In 2012, people living in urban and rural areas, respectively, had on average years and 9.34 years and 6.76 years of schooling. Similarly, the gender gap has also remained, but is diminishing. On average, males in the population had about 8.5 years of schooling while females had about 7.7 years of schooling.

Table 1. Average years of schooling of population aged 15 or over by urban/rural area and gender, 1993–2012

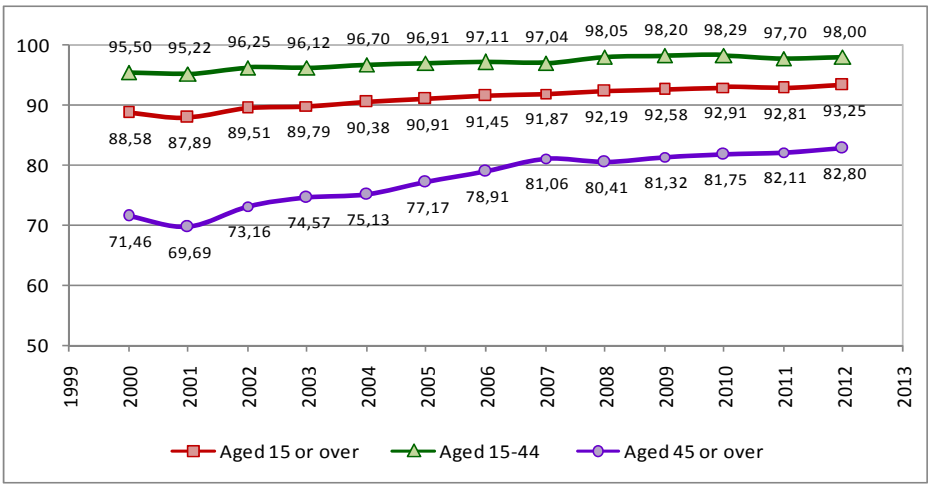
Year	Urban			Rural			Rural + Urban		
	Male	Female	Male + Female	Male	Female	Male + Female	Male	Female	Male + Female
1993	8.73	7.25	7.98	5.40	4.15	4.77	6.84	5.51	6.16
1996	9.07	7.78	8.41	5.73	4.56	5.13	6.84	5.63	6.22
2000	9.15	7.99	8.56	6.17	5.07	5.61	7.39	6.27	6.82
2003	9.36	8.34	8.84	6.50	5.52	6.01	7.70	6.71	7.20
2006	9.55	8.70	9.12	6.86	6.00	6.43	7.87	7.03	7.45
2010	9.68	8.86	9.27	6.98	6.10	6.54	8.35	7.50	7.92
2011			9.13			6.64			7.90
2012	9.77	8.96	9.34	7.17	6.35	6.76	8.49	7.68	8.08

Source: Suharti's calculation and BPS, various years

Literacy rate

The increase in literacy rate is also an indicator of improved educational attainment. From 1993 to 2012, literacy among the population aged 15 years or over increasedfrom 88.6% to 93.25%. The lowest literacy rates are now mainly concentrated in the 45 years or over age group. In 2012, the age group 45 years plus had a literacy rate of 82.8%, compared with 98% for the age group 15–44 years. As expected, gaps between urban and rural and between males and females have remained although they have narrowed considerably.

Figure 8. Trends in literacy rate by age group, 2000-2012



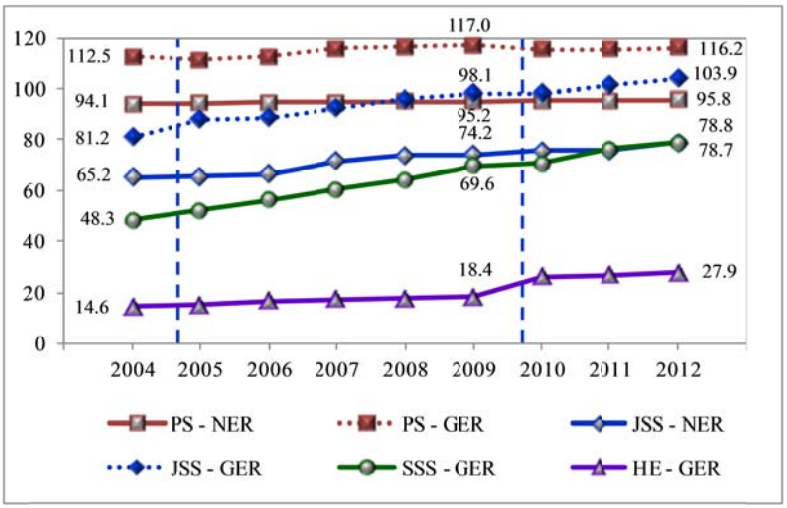
Source: BPS, various years

2. Trends in school enrolment and progression

This section describes school enrolments using both the gross enrolment rate, (GER = the number of students enrolled in school as a percentage of the total population of students in the relevant age group), and the net enrolment rate, (NER = the number of students of official school age enrolled in school as a percentage of the total population of students of official school age in the relevant age group). The GER includes substantial numbers of students who are outside the official school ages, and can therefore exceed 100 per cent.

Figure 9 shows the trends in the GER and NER from 2004to 2012 by school leveland higher education using data from MoEC. At the primary level, the GER has increased almost 4% from 112.5% to 116.2%. At junior secondary (JSS) the rate increased more significantly from 81.2% in 2004 to reach above 103.9% in 2012, reflecting the massive construction and teacher recruitment program initiated to support nine years universal education. A significant increase has also occurred for senior secondary from 49% to 78.7%. The NER has been well below the GER. In 2012, the NERs for primary and junior secondary were 95.8 % and 78.8%, respectively.The large number of underage students currently enrolled in primary school partly explains the much higher rates for primary than for junior secondary. Parents are now permitted to enrol their children at the age of six (rather than the official starting age of seven) and the provision of school operating funds (BOS) on a per capita base provides an incentive for schools to accept under-age students. However, the calculation of the GER is still based on the 7–12 age group.

Figure 9. Trends in NER and GER from primary school to higher education, 2004 - 2012



Source: Ministry of Education and Culture, Education Statistics 2013

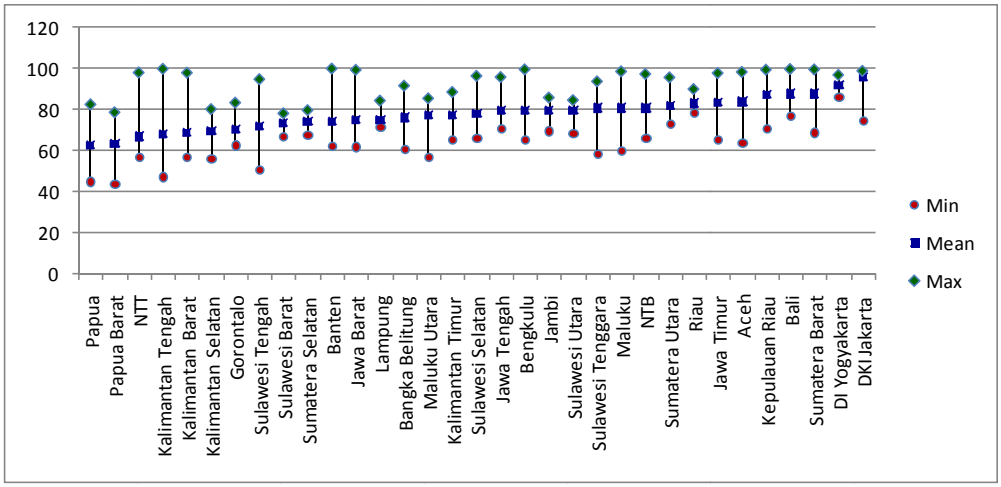
2.1 School enrolment rates vary across provinces and more so across districts

Based on administrative data from MoEC shown in Figure 10, the NER of provinces forprimary level in 2012/2013 ranged between 89.69% in West Papua to 98.70% in Bali. In contrast, the range in NER at junior secondary school was much larger, from 62.91% in Papua to 95.55% in Jakarta.

The differences between districts however were even larger.At junior secondary level, data from MoEC show that the NER in 2012/2013 ranges from 43.57% in Kaimana, West Papua, to 99.86% in Cilegon City, Banten. The variation within provinces for all districts can be seen in Figure 10.

The largest difference within provincesis seen in Central Kalimantan with the range between 46.88% in North Barito to 99.76% in Palangkaraya City. There are also districts in Java Islands that have NER below 70% such as Bogor and Sukabumi Districts in West Java and Sampang and Bangkalan Districts in East Java.

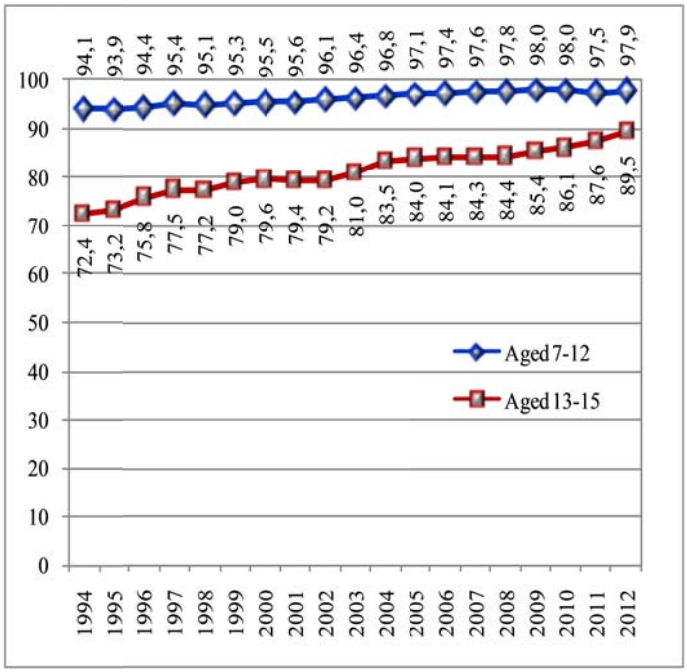
Figure 10. Average junior secondary NER for provinces showing range of district averages, 2012/2013



Source: Ministry of Education and Culture, Education Statistics, 2013.

Data from the Household Survey (*SUSENAS*) in 2012 show that the age specific enrolment rates for children aged 7-12 and 13-15 have continuously increased.The rate for students aged 7 – 12 years increased from 94.1% in 1994 to 97.9% in 2012, and the rate for students aged 13-15 years increased from 72.4% to 89.5%. While the trend is positive, it is still a concern that around 620,000 (2.0%) children aged 7-12 and 1.37 million (10.3%) children aged 13-15 were out of school. This challenge is explored further with reference to the model Zones of Exclusion.

Figure 11. Age Specific Enrolment Rates, 1994-2012



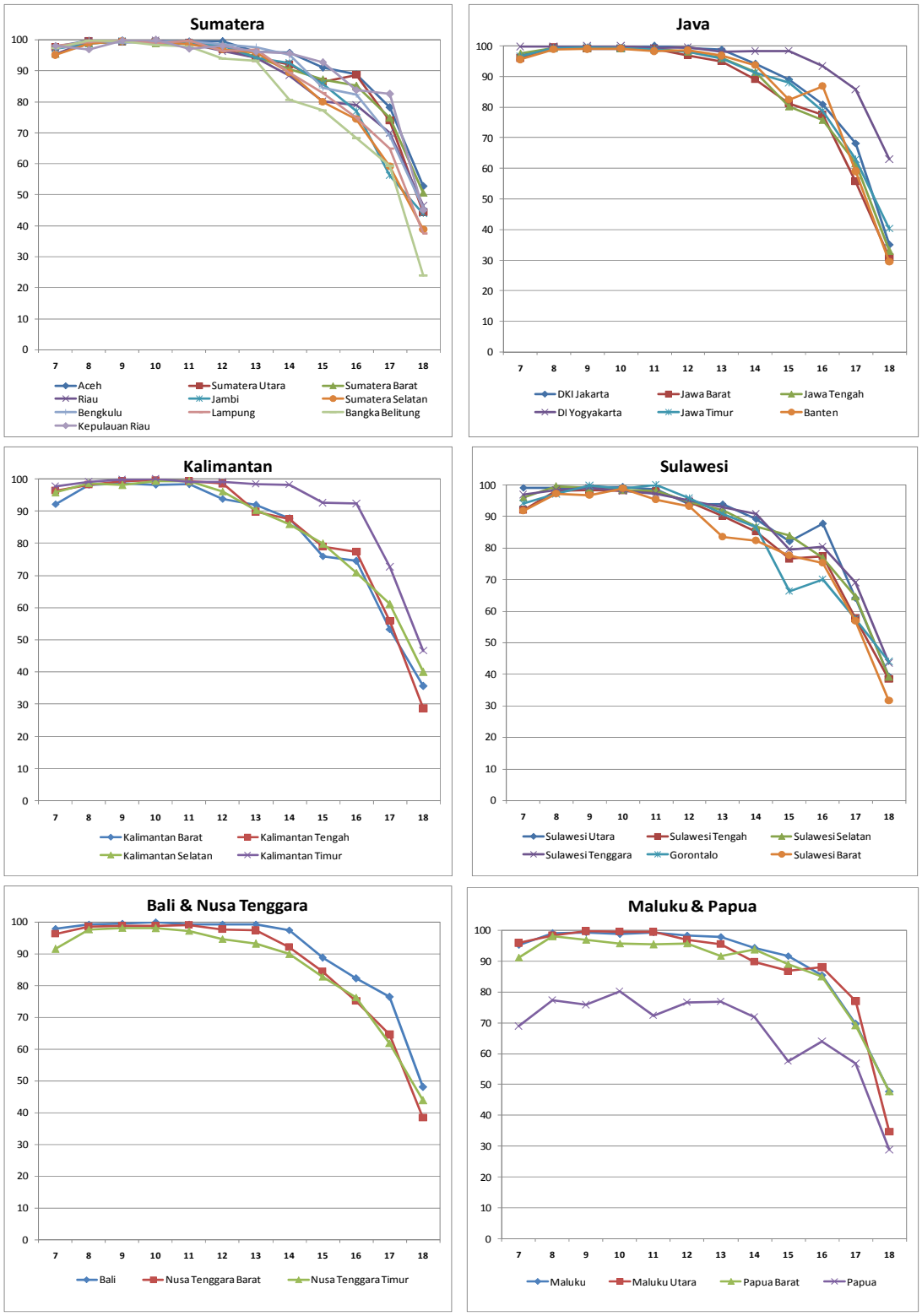
Source:
BPS, various years

There are marked differencesin patterns of school participation across age groups between provinces. Figure 12 uses Household Survey data (*SUSENAS*) to show the extent of variation between provinces which have been grouped by proximity.

Overall, the patterns on the six graphs are similar for the first phase of schooling, except for Papua which begins well below and continues so. From about age 11 the age participation rates begin to diverge.Yogyakarta, for example, has very high enrolment rate up to age 15. The enrolment rate starts to

decrease beyond this point. Kalimantan Timur shows similar pattern, but the enrolment starts to drop a year earlier from age 14. As well as considering transition points, strategies to support completion of schooling need to be sensitive to the age at which drop begins and the regional/local factors at work.

Figure 12. Proportion of children who enroledin school by province and age, 2012



Source: BPS, various years

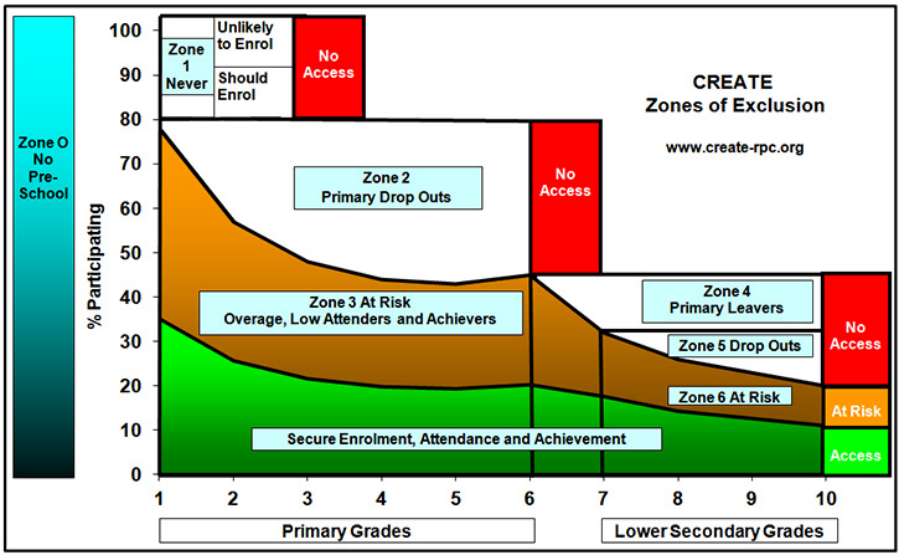
3. Zones of Exclusion: A model for identifiying the enrolment status and vulnerability of children aged 6-15

Policies and strategies to increase access and increase completion rates need to consider many factors. The *Zones of Exclusion* model developed by the Consortium for Research on Educational Access, Transitions and Equity (CREATE) draws attention to many points at which students are vulnerable and the factors which need to be addressed for students to be able to sustain their engagement in and successfully complete their schooling. As can be seen from the graphs above, having enrolled in a level of schooling is, of itself, not sufficient to ensure the benefits.

The use of word "Exclusion" in this model may appear confronting but it makes the point that children who are failing to learn are usually those whoattend intermittently, drop out or are never enrolled,and are not exercising an equal choice in that they cannot control the factors that lead to their inability to complete a quality education. These factors can include a mix of home, social and school factors such as family circumstances and obligations, distance, difficult or expensive travel, poor quality teaching, lack of basic resources for learning, the emotional impacts of frequent failure coupled with the daily experience of social inequity (from lack of uniforms or money for snacks at school and extra-curricula activities). For some teenagers in both rural and urban areas, the experience of schooling can be so unrewarding and irrelevant that even intermittent low-paid, unskilled work is a more attractive option[3].

The model below identifies 6 zones of exclusion. The % within each Zone above is for illustrative purposes. As Indonesia moves to 12 years of universal education, and has set ambitious targets for higher education the model has been extended to 10 Zones, using 2012 Household Survey data on enrolment.

Figure 13. Zones of Exclusion Model: CREATE 2007[4]



As Indonesia moves further towards a higher middle income country the issue of preventing drop-out and maintaining engagement will become more complex and more difficult to solve than just the provision of buildings and teachers. In many parts of Indonesia, except perhaps the most physically challenging and disadvantaged regions, the majority of out-of school youth will increasingly be drop-outs and children attending intermittently, rather than children who have never attended schooling. This is an opportunity cost for the nation and a lost opportunity for the individuals and their families. It also has potentially negative social and economic consequences for communities and families which could be avoided.Teachers can identify at-risk students well before they drop out and must be able draw on pedagogical, community, social and financial support to maintain student engagement.

3.1 Adaptation of the Zones of Exclusion Model to Indonesian context.

Zone	Enrolment status
0	children who have not/never enrolled at school or pre-school
1	children who are currently enrolled at pre-school but do not complete
2	children who enter primary school and are still enrolled at this level
3	children who enter primary schooling but drop out before completing the primary cycle
4	children who completed primary school but did not continue to junior secondary school
5	children who enter junior secondary school but drop out before completing it.
6	children who are currently enrolled in junior secondary school but at risk of dropping-out
7	children who completed junior secondary but did not continue to senior secondary school
8	children who currently enrolled at senior secondary school and are at risk of dropping out
9	children who dropped out from senior secondary school
10	children who completed senior secondary but did not continue into higher education

Figure 14 below shows the % of children aged 6-15 in Indonesia in 2012 who can be regarded as being in each of the Zones above. The key features are -

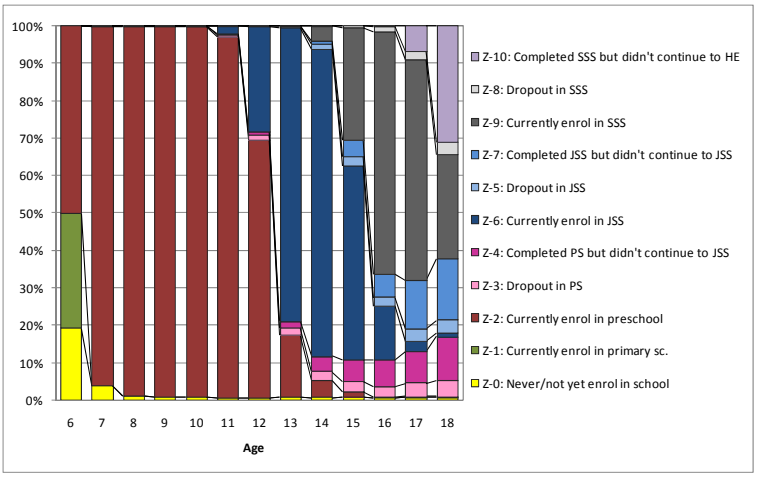
- Many children at age 6 (50.16%) have already enrolled in primary school and 30.67% are enrolled in pre-school.About 4% of children aged 7 fall into Zone0, having not yet enrolled in primary school. Including children aged both 7 and 8 yearsit is estimated that 241,000children need to be enrolled urgently, as late and over-age enrolment are associated with both dropout and learning failure.

- About 1 million over-age students (aged 13-15), are still in primary school. These could be children who enrolled late, children who repeated a grade, children of itinerant workers, children who were not able to travel to school at an earlier age because of distance or lack of transport, etc. In addition, about 320,000 children from this age group become primary school drop-outs. This signals a serious problem of internal inefficiency in primary schooling in which students who have been able to access schooling at least once are not maintained.

- The vulnerability of students at transition points is clearly indicated by the large % of students, (about 500,000 in number) aged 13-15 who fall into Zone 4, discontinuing their education at the end of primary schooling.

As noted earlier, national data masks quite large variations between and within provinces. The success of the policy for Nine Years Compulsory Basic Education must be assessed taking into account how well the education system at local level has been able to respond to the needs of these children.

Figure 14. Educational zone of children aged 6-18 in Indonesia by age, 2012



Source: Suharti's calculation using data from SUSENAS, 2012

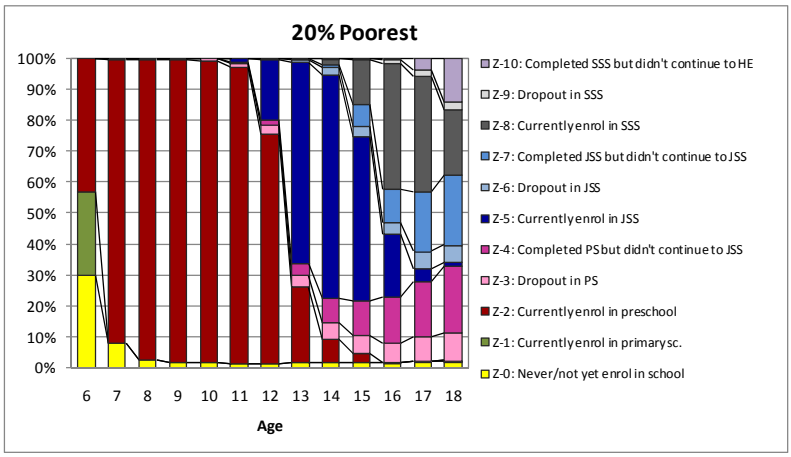
Separate analyses of enrolment data for children aged 6 – 15 years by poverty quintiles highlights crucial issues in terms of equity.

- Of children who did not complete primary school (Zone-3) and who did not continue to junior secondary school after graduating from primary schooling (Zone-4) almost half are from the poorest families (Figure 15).
- More specifically, of the 1.3 million children aged 13-15 who fell in these two zones, about 46% were from the poorest quintile (poorest 20%).
- A disproportionate number of poor children aged 13-15 were still in primary school, having possibly enrolled late or having repeated a grade or their education may have been disrupted by school-level factors such as poor supervision, high absenteeism of teachers and a lack of qualified teachers as the data show that disadvantaged areas do not have equal provision of qualified teachers or quality schools. Even in less disadvantaged areas, the better-resourced schools tend to enroll high performing students from better-off families.

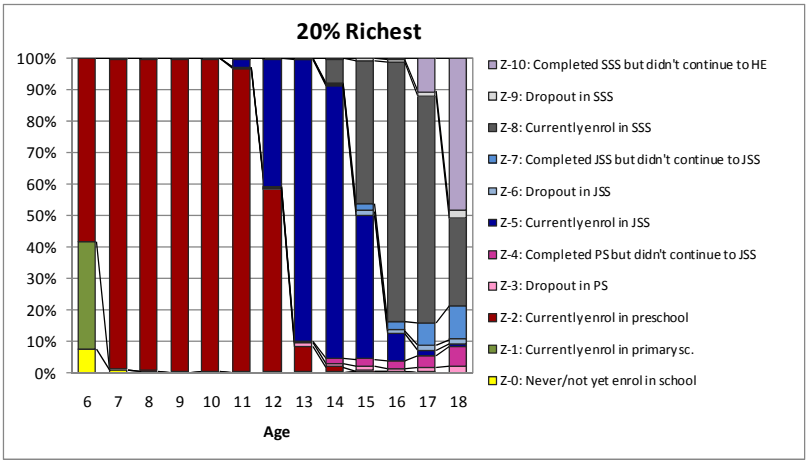
The different patterns for the top and bottom quintiles are a stark reminder of the need for education policies to be informed by analysis of enrolment and completion data at sub-national level and by population characteristics such as poverty quintiles.

Figure 15. Educational Zone of Indonesian children aged 6-18 from the porest and richest quintiles, 2012

a. Poorest 20% (Quintile 1)



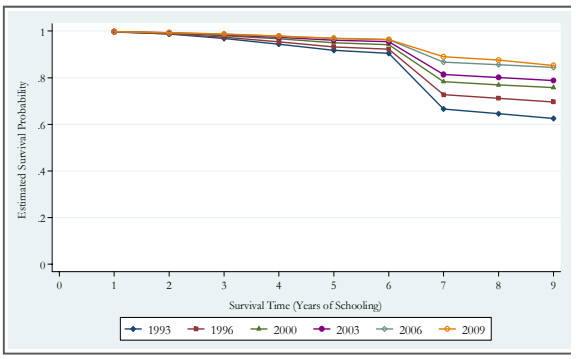
b. Richest 20% (Quintile 5)



Source: Suharti's calculation using data from SUSENAS, 2012

4. Issues associated with Transition points in schooling

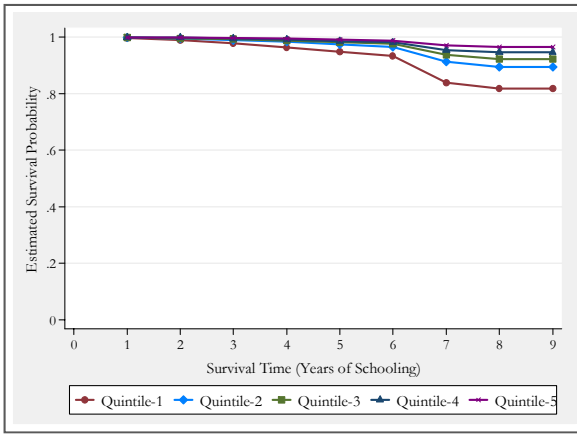
Figure 16. Estimates of education survival of population aged 13–15 by year of survey



Source: Suharti, 2013

Zone-4 in the previous section indicates that there are some children who do not continue their schooling after completing primary school. Using data from *SUSENAS* with life-table methods this section provides trend data which shows that although there has been progress, there is still a significant issue withschool transition from primary to junior secondary school. Figure 16 shows an improvement in the education survival of the population aged 13-15 from 1993 to 2009, with a slower improvement since 2006. The change in gradient of lines between Grades 6 -7 provides evidence that the transition rate from primary to junior secondary school has been improving.

Figure 17. Different school progression of students from different economic status, 2012

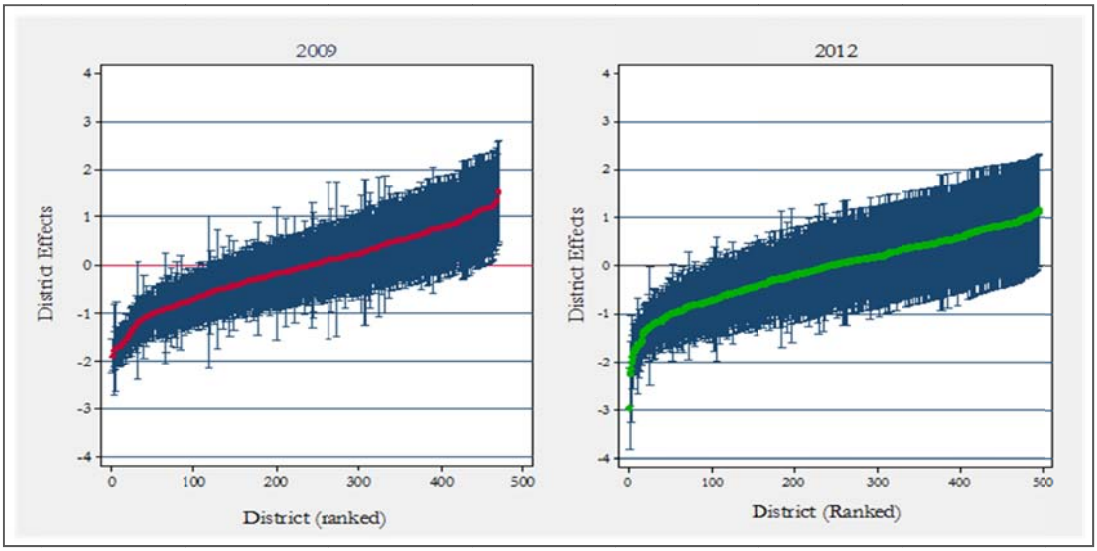


Source: Suharti's calculation using Susenas 2012

As noted in the earlier discussion, there is a noticeable gap in school progression between children from different socio-economic strata. Figure 17 shows that while there is drop-out across all social strata, it is most marked for the poorest 20% of the population. Among 100 children from the porest quintile, aged 13-15 in 2012, who had ever enrolled to the first grade of primary school, about 93% completed primary school and only just above 83% were able to make it to junior secondary school.

In contrast, the outlook for children from the richest households is much better with about 97% of those enrolled at the first grade reaching junior secondary level. What is especially challenging about the progression rates is the size of the gap between quintiles 4 and 5 and the fact that this gap is at least 3 times the size of the gap between other adjoining quintiles. This suggests that pro-poor strategies are not effective or not sufficiently targeted to the poorest of the poor and some new strategies may be needed to address barriers to transition. Using data from the Household Surveys (*SUSENAS*) of 2009 and 2012, it can be seen that the probability of a child aged 13-15 continuing her/his education from primary to junior secondary school varies across districts. In 2009 the probability for primary school graduates aged 13 to 15 who continue to junior secondary school would be between 78% and 99% in the middle 95% of districts (i.e. excluding the outliers).In 2012, the range narrowed to between 94% and 99%. The district effects of the analyses can be seen in Figure 18. The variation is least at the upper end and highest at the lower end and has become more uniform in 2012 compared with 2009, suggesting that the districts with middle to upper range transition rates are closing the gap and that the districts which have the lowest transition rates are not yet making progress.

Figure 18. Caterpillar plot showing district effects with 95% confidence intervals for log-odds of school continuation from primary to junior secondary school, comparing 2009 and 2012.



Source: 2009. Figure is from Suharti, 2013 and 2012.Figure is analyzed using SUSENAS 2012 data.

5. The remaining Gender Gap

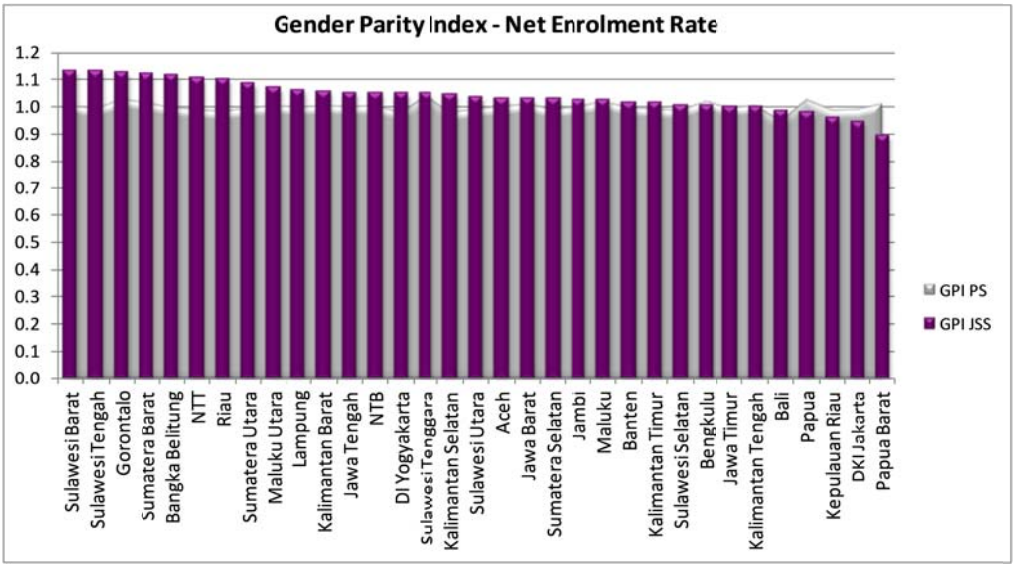
At national level, the gender gap as measured by the gender parity index (GPI) in education has been narrowed. The Gender Parity Index (GPI) for NER at primary level has been steady around 1.0 which indicates equal access for females and males. Dissagregated data shows there are some small differences on GPI across provinces as shown in Figure 19. The GPI calculated using GER also shows a similar result. (Figure 20).

Analysis for junior secondary education reveals there is still a gender gap across regions. Although at national level the gap has disappeared, there are quite large variations in the GPI of NER and GER across regions. For example, in 2012, the GPI of NER at junior secondary level ranges from 0.90 in West Papua to 1.14 in West Sulawesi (14), while GPI for GER ranges from 0.93 in Papua Barat to 1.19 in Central Sulawesi (Figure 20).

It is unexpected, however, that the higher GPI at junior secondary level would occur in provinces that have lower enrolment rates as shown in Figure 21 and Figure 22.

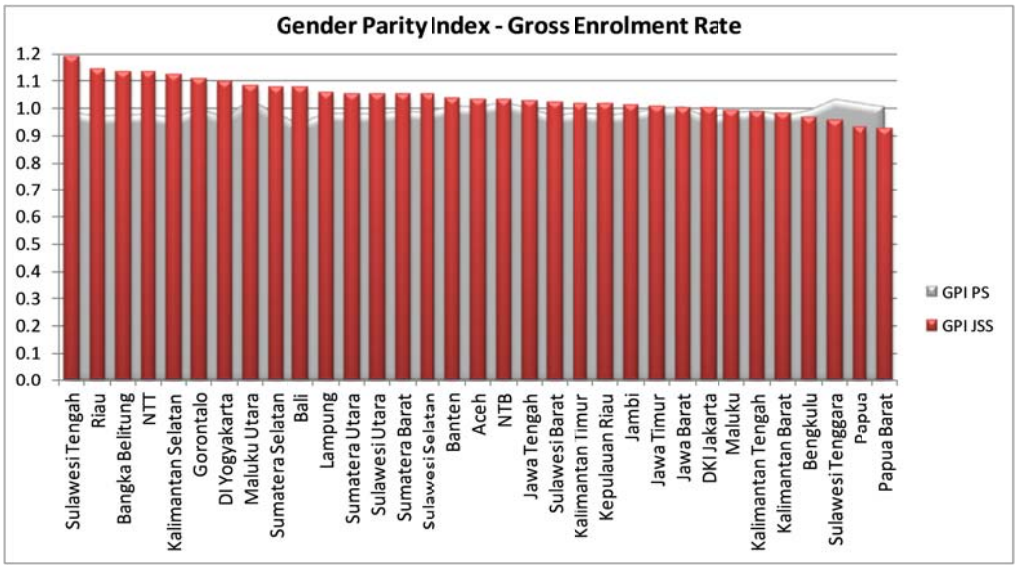
Provinces with lower enrolment rates tend to have a higher enrolment rate for girls than for boys. This might reflect the finding (Suharti 2013[5]) that boys from poor households in the lower performing provinces have the lowest school enrolment rate. (See Attachment 1). Using 2009 data, Suharti also found a gender effect favoring girls in school transition rates between primary to junior secondary and junior to senior secondary.

Figure 19. Gender parity index of Net Enrolment Rate (NER) for primary and junior secondary schools by province,2012



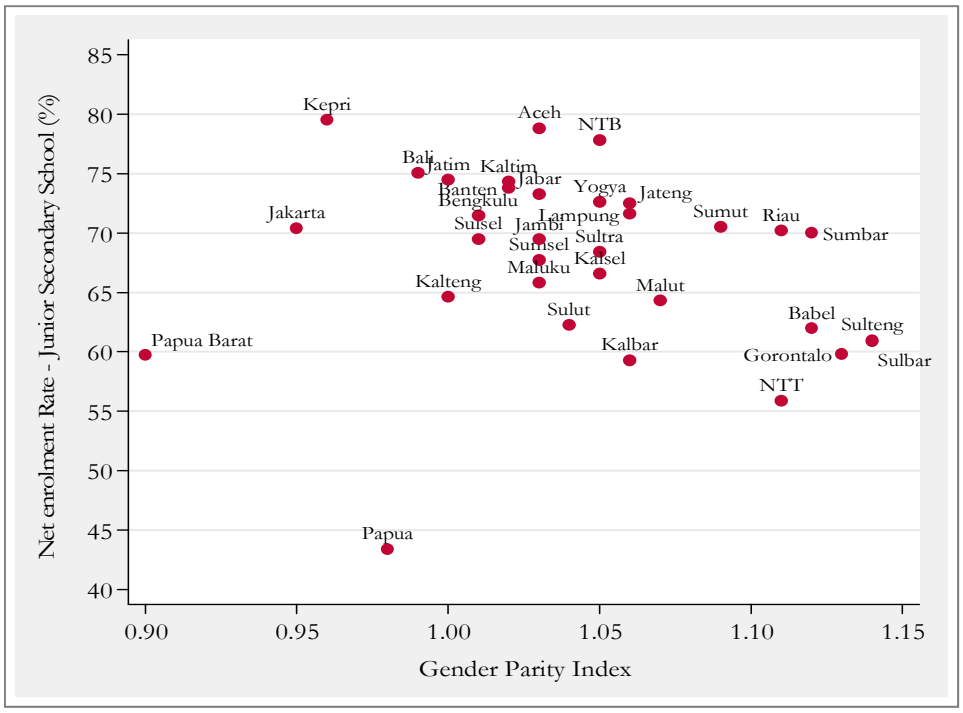
Source: Suharti's calculation using data from SUSENAS, 2012.

Figure 20. Gender parity index of Gross Enrolment Rate (GER) for primary and junior secondary schools by province, 2012.



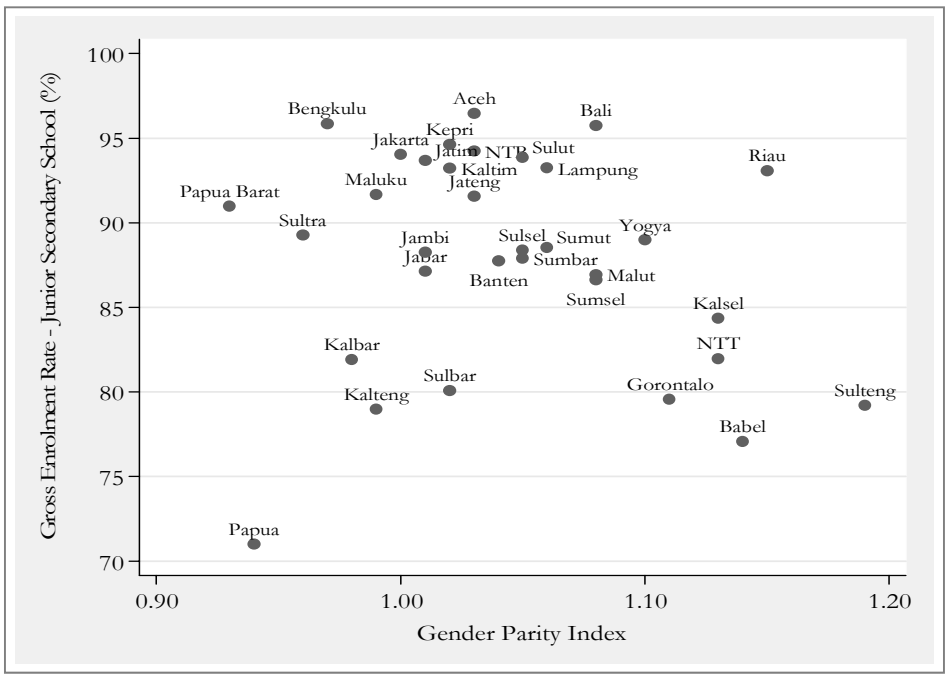
Source: Suharti's calculation using data from SUSENAS, 2012.

Figure 21. Scatter plot for Gender Parity Index (GPI) and Net Enrolment Rate (NER) at junior secondary level, 2012



Source: Suharti's calculation using data from SUSENAS, 2012

Figure 22. Scatter plot between Gender Parity Index (GPI) and Gross Enrolment Rate (GER) at junior secondary level, 2012



Source: Suharti's calculation using data from SUSENAS, 2012

6. The supply of basic education services

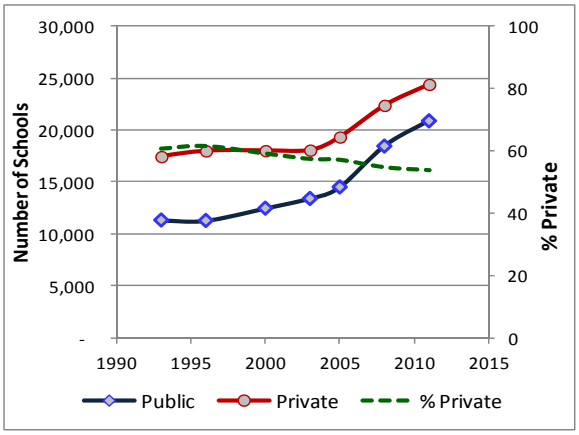
The number of schools is presented in Table 2. The number of public schools has declined since 1996, while the number of private schools has steadily increased since 2003. As there is now a close match in the number of places on the supply and demand sides, the different trends for public and private provision could be an indication of higher demand for better quality schools and/or more opportunity for parental choice.

Table 2. Number of schools by level of education and type of provider, 1993 - 2011

Level of Education	1993	1996	2000	2003	2005	2008	2011
Primary School & Madrasah Ibtidaiyah							
Public	139.109	145.210	140.158	136.797	134.859	135.974	131.089
Private	39.306	35.740	30.383	29.836	30.395	32.246	33.653
Total	178.415	180.950	170.541	166.633	165.254	168.220	164.742
Junior Secondary School + Madrasah Tsanawiyah							
Public	11.316	11.276	12.458	13.395	14.503	18.441	20.874
Private	17.445	17.996	18.019	18.067	19.331	22.379	24.401
Total	28.761	29.272	30.477	31.462	33.834	40.820	45.275
Senior Secondary School + Madrasah Aliyah + Vocational School							
Public	3.692	4.168	4.432	5.520	6.345	8.126	8.548
Private	10.445	9.815	9.828	11.619	12.627	15.293	17.860
Total	14.137	13.983	14.260	17.139	18.972	23.419	26.408

Source: 1993-2008: Suharti, 2013, 2011: Suharti's calculation using PODES, 2011

Figure 23. Trends in the number of schools by level of education and type of provider, 1993-2011



Source: 1993-2008: Suharti, 2013, 2011: Suharti's calculation using PODES, 2011

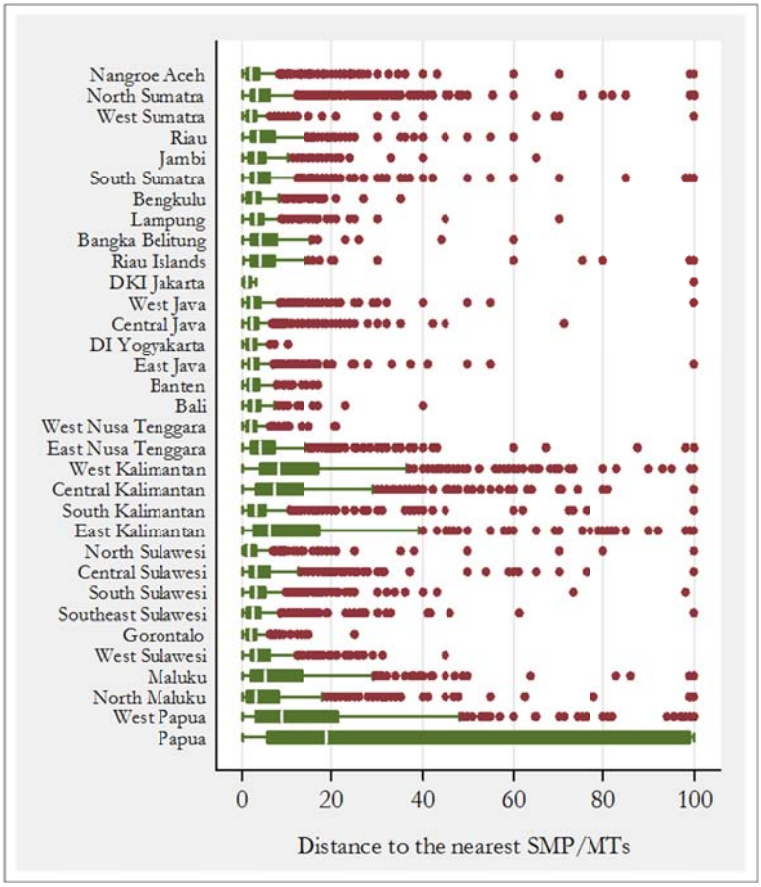
Access to junior secondary schooling has expanded to the point where a junior secondary school is available in almost all sub-districts. Only about 231 sub-districts, from a total of 6,637, did not have either a public or private junior secondary school or *madrasah* (MT). However, the distance from a village to the nearest school is still very long in some areas,including at locations in the most populous island, Java. This illustrates that the challenges in closing the gap in access are not limited to the under-developed provinces (See Figure 24).

6.1 Distance to school

Efforts to provide access to junior secondary schools in rural areas have been addressed very effectively over the past decade through the construction of one-roof schools known as *Sekolah Satu Atap* (*SATAP*). By establishing additional classrooms and teachers at the primary school site the SATUP have been shown to increase the transition rates dramatically. For example in Sukabumi, West Java, the probability of primary school graduates progressing to junior secondary in 19 one-roof school areas increased from a low of 13% to 98%[6]. While the creation of these SATAPs has significantly reduced the distance to be travelled to school, and thereby increased the transition rate, there are concerns about the quality of teaching and learning as teachers are most often under qualified for the specialist subjects they are required to teach. (MOEC, 2013).

Inspection of Figure 24 below shows that if 40 kms is considered the maximum reasonable daily commute (one way), there are many villages on the other side of this line where students are isolated from a junior secondary school. In addition to Papua and West Papua, there is a considerable cluster of villages in Kalimantan and Sulawesi that would fall in this group. The options for students are to attend boarding school, to stay with family or friends closer to the school or to receive some form of distance education. None of these options may be viable for poor families. One-roof primary/junior secondary schools appear to be the best option, provided such schools can be staffed with sufficient qualified teachers and there is flexibility in how the school operates across the two sub-schools. Consideration should also be given to other configurations such as one roo junior and senior secondary schools, and combinations of distance learning and regular school attendance. Unfortunately, the more remote schools are not well resourced and not well staffed and have difficulty retaining qualified staff. As result, the outcomes of small rural schools are significantly lower than the outcomes of larger urban schools.

Figure 24. Distance (kilometers) to the nearest junior secondary school for villages without one, 2012

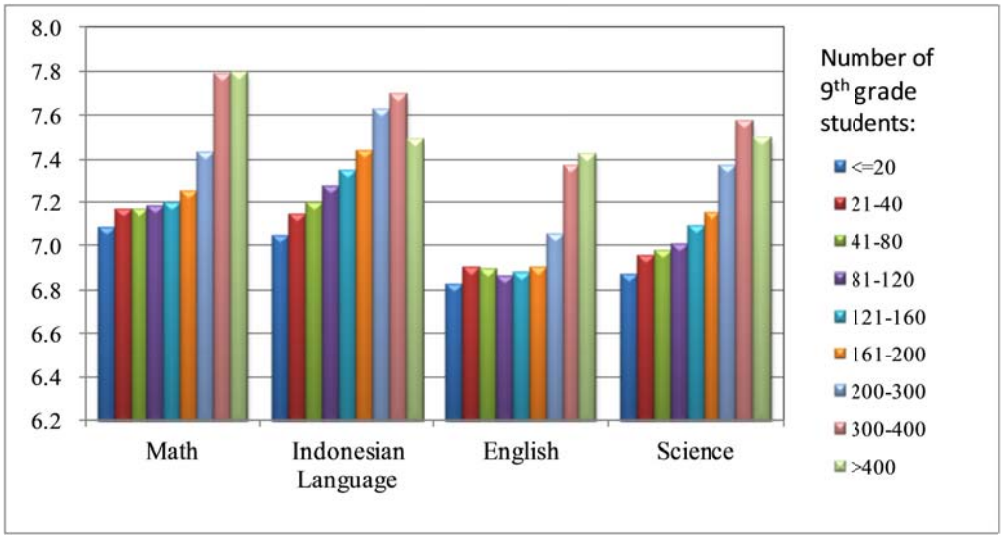


Source: Suharti's calculation using PODES, 2012.

6.2 Size of school

Figure 25 below shows a consistent trend for the size of school to be positively correlated with national exam scores. The best results are for enrolments over 300 students. For both Maths and English, enrolment between 20 students and 200 students does not make much difference but for Science and Bahasa Indonesia there is a more linear relationship. Achievement increases markedly with enrolment of 200 or more. A significant factor in the relationship of achievement and school size is likely to be the availability of qualified subject teachers. Evidence from the Minimum Service Standard Survey[7] indicates that private rural *madrasah* have the lowest number of qualified teachers and lag behind on most of the MSS indicators.

Figure 25. Average national exam score by school size expressed by number of 9th grade students, 2010



Source: Suharti's calculation using national exam data 2010

7. Conclusions

Access to education must mean access to quality education or the disparities between rich and poor students will be sustained rather than alleviated by their attending school. The last 5 -10 years has shown both achievements and challenges in equitable access to quality education.

7.1 Achievements

This chapter demonstrates steady progress in improving the level of education attained by Indonesia population over time. Years of schooling in the adult population improved from about 6 years in 1993 to 8.1 years in 2012.The adult literacy rate has also increased, especially at the lower adult age levels.This progress reflects consistent policies and concerted efforts from government to extend compulsory basic education from 6 years to 9 years and to introduce pro-poor programsto ensure better access to education among the poor. The message that girls have the same rights to education as boys has been well accepted and gender parity has been established at national level for some time.Variation between districts on a number of indicators has also been decreasing in the upper and middle performing districts, but this is not occurring in the most disadvantaged provinces.

7.2 The Challenges

While the achievements are strong, there are two major challenges which remain. These are the **regional disparities in access, transition and completion rates**and the **low quality of education in disadvantaged areas**.

On all indicators of access and quality, disadvantaged provinces rank below the more advantaged regions. This may not be surprising but it is significant and progress must be accelerated to avoid creation of an underclass with poor levels of education, diminished opportunities for higher paid work and family well-being. The disparities are even larger when one compares districts across the country.

From the individual student/family point of view, these two factors(unequal opportunity and low quality of service) are inextricably related. There is little motivation for struggling (and maybe sacrificing) to attend school daily when the quality of teaching is poor because teachers are frequently absent, teachers are often

underqualified or honorary and ill-prepared to deal with the special needsof their students and may lack adequate teaching resources and materials to do so effectively.Unless schooling is making a difference in children's lives and aspirations, children will vote with their feet. Students who are poor and disadvantaged require *exceptional* teachers, *inspired* leaders and *additional* resources to compensate for the disadvantage associated with an impoverished home background and to motivate them to aspire to higher levels of achievement.

This challenge begins with establishing more equitable access to good quality pre-primary education and then **ensuring that all 7 year olds are in school, *and learning***. Almost a quarter of a million 7 and 8 years olds are not in school and we can predict (from their subsequenttransition rates) that many times that number who are in school are not learning and will either drop out at age 11 or 12 or continue schooling but without the basic skills they need for successful learning in junior secondary. The PISA 2012[8]results show that in Indonesia almost two thirds of children have not achieved minimum competence on international benchmarks at age 15. The reason for this is not that they are inherently less capable than their peers in other countries, but that their earlier schooling has failed to establish the foundational skills in literacy and numeracy measured by the tests.

Clearly, if schools are not of good quality, enrolment by the poor is futile. For this reason, the Zones of Exclusion model takes an expanded view of access[9] which includes judgments of educational quality and of educational outcomes. This includes local access to safe schools with appropriate levels of staffing, learning materials, and facilities (including clean water and sanitation) which provide a positive learning environment; admission and progression through primary school within a year of the nominal age-in-grade; consistent attendance throughout the school year; learning outcomes that are useful, relevant and meet national standards; learning in a safe, healthy environment fit for purpose with adequate learning materials; appropriate access to secondary education and training. In short, this means equitable access to affordable schools of adequate quality, where learning takes place. The Indonesian government has made education more affordable by removal of tuition fees but quality is still too variable.

The current regional variations in transition and completion rates for primary and especially junior secondary must be addressed. As signaled above, this will require, in the first instance **a good foundation of learning in the primary years.** "Success builds on success". This must be followed by accessible and good quality junior secondary schooling. Although junior secondary schools are available in almost all sub-districts in Indonesia, children from many villages still face long distancesor difficult travel to reach the nearest junior secondary school or *madrasah tsanawiyah* which puts them at greater risk of dropping out.

That the quality of both primary and junior secondary schools is very variable is seen by the recent MSS survey[10]. Many students are not experiencing good quality teaching and are not enjoying learning as intended. Almost half the schools in the national survey do not have all their teachers preparing a daily lesson plan; almost half the schools do not have all teachers using regular assessment to give feedback to their students to improve their learning. More than 75% of schools across the country also lack some very basic resources for learning (textbooks, library books and equipment for science). These should not be difficult issues to solve. More difficult is the inequity in provision of qualified and certified teachers in small schools and remote areas, especially in the private *Madrasah*.

Unfortunately, disadvantaged students (from poor homes) are often doubly disadvantaged by only being able to access schools with less qualified teachers and fewer educational resources. The government has used various pro-poor programs such as scholarships for the poor to tackle the disparities in access faced by the poor however the approach has not yielded good results as yet. This may be partly because of targeting and administrative issues[11]but it may also be that the provision of cash grants and the **provision of school places is not a sufficient condition to ensure that all children particularly the poor enrol *and continue* their education.**

Given the inter-relatedness of opportunity to learn and the quality of the education experience, efforts to improve transition and completion rates for all students will require targeted pro-poor programs which include **a strong focus on quality**. Quality of education is however, essentially a service delivery issue that is

the responsibility of local government, not something that can be addressed entirely by national programs. National government can take the lead on setting priorities, determining standards, directing financial resources and, in partnership with provinces, lead quality assurance,but local government is responsible for the implementation of quality programs.

8. Recommendations for consideration by Government

The key objective for access in the next five years must be to ensure that investment in providing access includes *equitable access to quality*.

Mobilising the resources for equitable access to quality will require a strong focus on efficiency and targeting which has implications for greatly improved information management systems and enhanced capacity at local government level for analysis and planning. Flexibility and innovation at the policy level will be facilitated by a more holistic and coordinated approach between levels of government and the national ministries responsible and between the separate Directorates-General in MoEC.

The key directions for consideration by government in increasing access to quality education are -

1. Establish a **comprehensive policy framework for more effective and efficient supply of education in low density and isolated areas**, including options for one roof schools and/orcombined *SMP* and *SMA* levels; clustering or consolidation of small schools, multigrade teaching and support via distance learning technologies;different staffing allocations, class structure, pedagogy, funding formulae and school construction standards) - in other words, a Small Schools Strategy. The impact of this comprehensive policy framework should be the implementation of more innovative and flexible school structures and staffing policies and different resourcing formulae for small schools and low density population areas in order to be more responsive to local needs and be more cost effective.
2. Required each district/city to analyse its profile respect to enrolment, transition and completion rates and **develop a plan, not just targets, to improve these rates, especially for poor and isolated communities**. Improvement plans should include a mix of pro-poor programs (such as welfare support, homework centres, community-based programs to support and monitor student attendance and progress, mentoring and home-school liaison activities) as well as support for quality teaching practices which are aimed at increasing student motivation, engagement in and enjoyment of learning. School Principals and Supervisors must lead the implementation of these strategies at school level in collaboration with School Committees and other community structures.

3. **Evaluate school admission systemsand local school enrolment practices** that may be preventing marginalized children from equal access to good quality schools, and issue guidelines to ensure more equitable access.

4. Ensure collaboration between key national ministries and with local government to provide **capacity development to improve and coordinate demographic planning, data collection and management** at city/district level for more equitable and efficient provision of education across both public and private sectors,up-scaling innovative solutions where these have been found to work .

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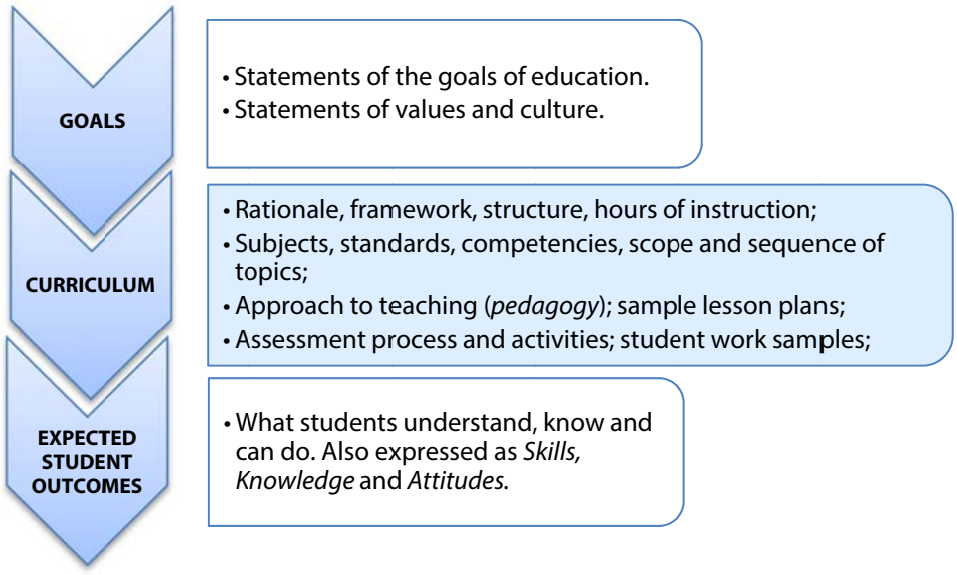
Chapter 2. *Kurikulum 2013* – What are Students Learning?

Introduction

This chapter provides an overview of the 2013 curriculum, with an outline of the specific changes for each level of schooling. It also analyses the risks and challenges in implementing the new curriculum. The chapter begins with a brief definition of 'curriculum' and some background about recent curriculum directions in Indonesia which have influenced the new curriculum.

Following a country's agreed goal and purpose of education, curriculum statements generally specify the subject domains (e.g. mathematics, science, civics) that students should study at each level and the learning methods and processes teachers should take in particular subjects and with particular age or ability groups, and the breadth, depth and order of topics. For example, *Kurikulum 2013* specifies an integrated thematic approach for the lower primary school and provides a student teacher workbook which includes the topics and activities for one semester.

Figure 26. Curriculum as the enabling mechanism to translate the goals of education into student learning outcomes



Educators also acknowledge a **"hidden curriculum",** meaning the informal, unplanned learning that occurs on a daily basis through the range of interactions, relationships, rules and social expectations in the school situation. This is how students learn *to be* as distinct from their learning *to know* and *to do*. The hidden curriculum isa powerfulfactor in the development of social skills, values and character.

1. The origins of the current curriculum in Indonesia

The first Indonesian curriculum document was set out in 1947 and ten significant revisions or new curriculum documents have been issued between 1964 and 2013[1]. For teachers, this may seem to be a lot of revisions, however, to keep pace with both social and economic development, the curriculum must change to reflect changes in socio-economic conditions and expectations. *Kurikulum 2013* has grown out of the Competency-based Curriculum (KBK 2004) and the introduction of school-based curriculum development (KTSP 2006).

1.1 Competency-based curriculum (2004–2012)

The first truly competency-based national curriculum was implemented from 2004 to 2012. It reiterated the responsibility of the national government to provide a single national curriculum taking account of: the development of faith and character; the need to develop students' cognitive skills and interests; national diversity and the needs of national and regional development; the demands of business; the development of science, technology and the arts; globalisation; and national unity and values. In this broad context, the goal of education was expressed as *developing the potential of all students as human beings of faith and devotion to God and to develop their character, healthy lifestyle, intellect, skills, creativity, independence and responsible citizenship.*

The National Education Standards Board (BSNP) was established in 2005 with a mandate to develop and monitor the curriculum. Teams of expertsdeveloped eight National Standards. These standards defined the competencies and levels of service to be achieved in the following areas – Learning Content for all subjects, including formal Religious Education; Learning Process (i.e. pedagogy, lesson planning, assessment); Graduate Competencies (i.e what students must be able to do); Competencies of Teachers and other Education Workforce personnel (e.g. principals, supervisors); Equipment and Infrastructure Standards; Management Standards; Financing Standards; and Education Evaluation.

The eight standards were developed over time. They were issued at irregular intervals by a series of regulations, with the last standard (Finance) completed in 2010. The format and level of detail varied considerably between each standard. The standards were intended to be initial statements that would be reviewed and revised. However the Board was not resourced sufficiently to review implementation or to make the planned revisions. At the same time, a series of regulations in 2006 established that each school should develop its own curriculum (KTSP), based on the Content Standard and Graduate Competency Standard, taking into account local needs and circumstances.

1.2 School-based curriculum development (*KTSP*) (2006)

While this requirement for school-based curriculum development was in tune with international trends, possibly its real importance was to reflect the intention of Law 20/2003, which described the different but complementary roles of national and local government in the provision of education: in this case, a curriculum designed nationally, adapted and delivered locally. From the start, it appears teachers were unprepared for the requirement for school-based curriculum development. It required a different mind-set and approach from their current teaching roles or anything they had experienced before. Despite in-service training modules and support from Teacher Working Groups, the KTSP was widely perceived as an extra burden for teachers, many of whom could not fully appreciate the rationale of a democratisation of education when their own schooling, teacher training and experience had been entirely a top-down approach.

1.3 Drivers of curriculum change (2010–2012)

The difficulties expressed by teachers in developing school-based curriculum (KTSP) was a key factor in the decision for a new national curriculum. However, there were also other issues of concern. Within the content of the curriculum, many of the standards were considered unachievable for most students. The low performance of students on international tests was seen to be, in part at least, the result of a mismatch between the content of the maths and science curricula and what was expected internationally. Many stakeholders also believed that the number of subjects in the primary curriculum was excessive and this "over-crowded curriculum" was having a negative impact on students' mastery of the basics and their well being.

Other concerns related to how the curriculum was being implemented and supported. Schools were unable to ensure the supply of textbooks required for all subjects, and the Ministry was not able to control the quality of textbooks emanating from a large number of contractors. Classrooms appeared to be dominated by rote learning, and schools were becoming "exam factories" where students were coached to pass an exam – rather than schools being genuine learning environments which would foster children's creativity and higher order thinking skills. There was uncertainty and lack of confidence in what students were learning under the school-based approach.

The Ministry also wanted to address contextual and behavioural issues. In response to mounting concern that the primary curriculum was overcrowded and diluting a focus on the basics, the new curriculum was streamlined and the number of separate subjects decreased. To address concerns that students were not receiving enough face-to-face teaching time, the length of the school day was increased and, largely as a response to media reports and stakeholder concerns about unruly behaviour in secondary schools, the overall time allocated for character education, civics and citizenship and religion was increased.

In addition, the 2010–2014 Medium Term Development Plan (RPJM) gave legitimacy to a review of the curriculum when it noted in the education chapter that "*the education system is not yet well-geared to develop independent learners with the capacity to think critically, communicate effectively, to work in teams and foster entrepreneurship*". The RPJM proposed that one of the actions to support Priority 9 should be: "*developing national and local curriculum that is responsive to developments in science and technology, culture and the arts as well as to global, regional, national and local needs, including religious education, physical development and the integration of life skills in education to develop the work ethos and entrepreneurial ability of students in the context of supporting education for sustainable development*." [2]

2. Overview of *Kurikulum 2013*

In August 2012, the Minister for Education and Culture announced a curriculum review. The existing documents were immediately reviewed and a new curriculum for primary, junior secondary and senior secondary was developed. The work was guided by the Deputy Minister for Education and Culture, assisted by an Expert Group and a team of Resource Persons, together with the considerable resources of the Ministry.

The theoretical basis underpinning the new curriculum included many features of good practice from across a range of countries. In particular, the new curriculum specified competencies in each subject in terms of knowledge, skills and attitudes. It supported a more integrated approach to learning (e.g. integration of ICT, language and culture in Junior Secondary) and aimed to foster a more open and student-centred teaching/learning paradigm, including enquiry methods, using multiple sources of information, and learning to collaborate to solve problems. This replaced the old paradigm which had been teacher-centred, teacher-directed and dominated by rote learning and memorisation in the majority of schools.

The approach to formulating content for the new curriculum involved nominated experts reviewing current content and process standards in terms of relevance and level of difficulty, streamlining and eliminating

content where necessary and adding new topics in line with international curriculum expectations (e.g. incorporating knowledge and skills assumed by PISA and other international tests).

The review of the existing curriculum and the draft *Kurikulum 2013* were completed in approximately 12 - 14 weeks, with four weeks of consultation afterwards. Compared to many other countries, this was an extremely fast process and very "top-down". The draft curriculum was issued only in outline form (PowerPoint slides), which limited the opportunity for deep professional dialogue and community engagement on its educational and philosophical underpinnings. Following the short consultation period and considerable commentary in the media, several significant changes were made, including re-installing science as a subject within the curriculum for Primary Grades IV – VI.

The final version was a total package comprising a new structure, new content, new pedagogy, centrally-developed textbooks (to be developed) and a phased teacher training and implementation plan for 2013-16. For the first year, the initial objective was to roll out the curriculum to 30,000 schools but this was scaled back to a pilot of 6,410 schools by a decision of the Parliament. Following the pilot, the new curriculum was formalised by a series of regulations in 2013 and the phased implementation plan for 2014-15 was commenced, with full implementation to be achieved in 2015-16. Training of 1.4 million teachers was scheduled to take place in the first half of 2014 for the 2014–15 school year.

2.1 Primary curriculum – summary of changes

The number of lessons per week is increased by four from 26 to 30 in Lower Primary and from 32 to 36 in Upper Primary. Bahasa Indonesia is positioned as the foundation for learning in all subjects and the allocation of lesson units to subjects includes additional lessons in Bahasa Indonesia for Grades I – III but this increase also incorporates the teaching of science and social science within Bahasa Indonesia using an integrated thematic approach. Lessons are 35 minutes each and, therefore, the total hours of scheduled formal face-to-face lessons ranges from 17.5 hours (Lower Primary) to 21 hours per week (Upper Primary). For a detailed list, see Appendix 1, Table A1.

In upper primary, core academic subjects make up just over half (approx. 56 %) of the total learning time:

- 22 lessons are allocated to the basic skills (language, maths), science and social sciences
- 9 lessons to arts, Physical Education (PE)/Health/Sports and Culture
- 8 lessons allocated to Religion and Civics/Citizenship.

The integrated thematic approach in Lower Primary incorporates content from all the disciplines into the teaching of basic competencies using themes to integrate knowledge. This approach is to be supported by the provision of a single student textbook/workbook for each semester which includes activities relevant to the themes. This removes the necessity for separate textbooks and workbooks for each subject in the lower primary. It also reduces some of the burden on teachers for lesson planning, but may have the unintended effect of stifling creativity and professionalism if they simply follow the student workbook.

2.2 Junior Secondary curriculum – summary of changes

The number of lessons per week was increased from 32 to 38 lessons of 40 minutes each. The number of subjects was reduced from 12 to 10 by deleting Personal Development and taking out Local Content as a separate subject, giving schools the option to include Local Content in Arts and Culture (e.g. a local language) or in Craft. English language was retained as a compulsory subject for four lessons per week.

As in the primary curriculum, Bahasa Indonesia is positioned as a tool for integrating knowledge across the curriculum. Each subject is designed to support all competencies and use a problem-solving (scientific) approach.

Information and Communications Technology (ICT) is not listed as a separate subject but intended to be integrated in all subjects. This may be difficult to implement for two reasons – the majority of schools do not have the resources in every classroom for this to occur andmost subject teachers lack the skills and knowledge themselves to teach their students about the effective use of ICT and its creative learning opportunities. Some educators have argued for more expert teaching of ICT at all levels of schooling, in particular to provide more equity for students who do not have ICT access at home. For a detailed list of lessons by allocation, see Appendix 1, Table A2.

Compulsory Scouting (for both Primary and Junior Secondary) is included as an extracurricular activity to support character development and is to be conducted in addition to the timetabled lessons. Academic subjects (Maths, science, social science and language) comprise about 66% of total learning time. The balance is made up of six lessons for Religion and Civics/Citizenship and eight lessons for PE/Health/Sport, Arts and Crafts. The total lesson time is 25.3 hours per week.

2.3 Senior Secondary curriculum – summary of changes

After completing Junior Secondary, students may choose either the academic (SMA) or vocational (SMK) stream for Senior Secondary. The majority of parents prefer SMA over SMK and have a preference for public rather than private *Madrasah* however their choices are significantly constrained by supply side limitations, which are reinforced by entrance exams, enrolment criteria and by a number of fees.

In both SMA and SMK there are compulsory and elective subjects. The compulsory general education component for both the academic and vocational streams of Senior Secondary includes:

- 12 lessons of academic study
- 5 lessons for Religion and Civics/Citizenship
- 7 lessons for Arts, PE/Health/Sports and Craft.

The total of 24 lessons in the compulsory component constitutes about half the overall minimum curriculum pattern for Senior Secondary. See Appendix 1, Table A3: Allocation of lessons in Senior Secondary School.

The elective curriculum choices for SMA (academic stream) include three streams, each of which contains four subjects. The elective streams and subjects are: Maths/Science (comprising Maths, Biology, Physics, Chemistry); Social Studies (comprising Geography, History, Sociology/ Anthropology, Economics) and Languages (comprising Bahasa Indonesia, English, another foreign language, Anthropology). These subjects are allocated three lessons each in Grade X and four lessons each in Grades XI and XII. In addition, four to six lessons per week are provided for advanced (deeper) study in students' elective disciplines. For the allocation of lessons, see Appendix 1, Table A4.

Students in SMA must study a minimum of 42 lessons per week in Grade X and 44 lessons in Grades XI and XII. This minimum pattern of study is made up of their general compulsory subjects (24 lessons) and one discipline (12 to 16 lessons) plus four to six lessons of advanced (deeper) level study. Students may elect more than one discipline, taking their total up to 60 lessons in Grade X and 72 lessons Grades XI and XII.

The curriculum for SMK (vocational stream) includes similar basic compulsory core subjects as SMA in Grades X and XI, but these are reduced in Grade XII and additional lessons taken in the chosen electives. There are two compulsory general vocational strands and two specialised elective vocational studies.

The compulsory general vocational subjects are Life and Career Skills (Grades X to XII) and Computer and ICT studies (Grade X only). The specialised vocational electives are selected from six broad vocational skills areas: Engineering Technology; Information and Communications Technology, Health Professions; Arts, Crafts and Tourism; Agro-business and Technology; and Business and Management. In all, 40 courses of study are offered under these vocational areas but each SMK school usually is only able to provide a small range of these. The subjects offered by individual SMK are intended to reflect the demand for skills, both locally and nationally, to maximise employment opportunities for youth and to enhance national productivity and

competitiveness through a better skilled young workforce. For the allocation of lessons, see Appendix 1, Table A5.

2.4 Pedagogical changes

The Ministry describes the pedagogy envisaged by the new curriculum as a "paradigm shift". The published curriculum documents list the nature of the transformations that are required in classroom practice to foster independent learning, observation, questioning, processing, making judgements, communicating and creating. There is an emphasis on problem solving, collaboration and teamwork in the classroom. The concept of the teacher as the source of all information is replaced by a concept of the teacher as the manager of a rich learning process which takes place both inside and outside the classroom. These are all elements of good teaching practice but they require focused leadership, support and supervision to become established as habits of daily teaching. Achieveing the paradigm shift envisaged in a short time frame would be a challenging task in any country and is especially challenging in Indonesia given the issues of scale, diversity and level of teacher professionalism.

2.5 Enriching assessment

Kurikulum 2013 proposes a change from the old approach of assessment based on tests of memorised knowledge and competency. The new approach aims for a more "authentic assessment" of the learning process using qualitative instruments, such as student portfolios, to assess students' attitudes as well as their skills and knowledge. It also proposes that teachers should employ a wide range of assessment tools to enrich the teaching and learning process: self-assessment, project assessment, daily tests and assignments, mid-year and final tests and competency level testing by the system for quality assurance purposes.

This is a change in emphasis from assessment *of* learning to assessment *for* learning. In the trial of *Kurikulum 2013*, this is the aspect which teachers found most challenging. Aligning qualitative judgements with reporting in quantitative terms (school marks) is a complex task requiring deep knowledge of the standards and of assessment principles and experience to judge student performance.

2.6 More focus on character development

Policy-makers and other stakeholders have been concerned, especially over the past five years, by an apparent increase in student bullying and physical violence on the way to school and at school, and by incidents of sexual misbehaviour. Such incidents have been reported to occur mainly at secondary schools or outside the school, involving secondary students, especially those from SMK.

In response, the curriculum emphasises character education as a responsibility of the school and of all teachers acting as positive role models. *Kurikulum 2013* also proposes compulsory Scouting as an extracurricular activity to build character. It is also intended that Religion and Civics/Citizenship lessons will contribute to character development across all grades. This is a complex area of the curriculum and is discussed in another chapter of the Background Study.

2.7 Other changes relating to assessment

The Minister announced in November 2013 that the Grade 6 National Exams would be abolished. The decision appears to be a response to many factors including that the exam is no longer needed for entry to Junior Secondary as universal access has almost been achieved. In general, there are now sufficient places for all students to progress to junior secondary, although in many districts the transition rates are still low.

Other factors relevant to the abolition of national exams at Year 6 include: the widely-held perception that the teaching–learning process is distorted by intensive exam preparation in the final year of Primary; the cost and logistics burden on the Ministry; the cost burden on parents to pay for coaching and exam fees; the stress on young students who are transitioning out of Primary and will receive no beneficial impact on their learning as a result of the exam. From 2014, Grade 6 National Exams are being replaced by Provincial Exams, which will include 25% of questions from the National Standards Board (BSNP). At the time of writing, there is no current information on the nature of the provincial component however it can be expected that there will be significant variability in the technical capacity of provincial personnel to manage this task with an appropriate level of technical expertise.

The Minister also announced a pilot project in 150 schools to phase out grade repetition. This "No student held back" policy is in line with considerable international research which finds that grade repetition generally does not facilitate an improvement in learning and is most frequently associated with poor learning performance in later years. A review by Hattie[3] of 861 studies concluded that "*repetition is overwhelmingly disastrous…at enhancing academic achievement*". An Indonesian study, the Quality of Education in *Madrasah*[4], also reported a negative correlation of grade repetition with student achievement. The rationale of this policy change is consistent with the new teaching paradigm in which teachers must become more skilled in formative (ongoing) assessment and adapting learning to meet individual needs however the socialisation of the policy has been met with some resistance.

3. Challenges in implementing *Kurikulum 2013*

The 2012 review and preparation of a new curriculum reflected the Government's goal to improve student learning to a level where Indonesian students can compete regionally and internationally, improve their personal life chances and contribute to the productivity and development of their country. The task has been a huge undertaking and its fast pace has generated significant risks.

The short timeframe did not allow for extensive input by practising classroom teachers at either the initial review or the formulation stages on what works or doesn't work in the classroom. The timeframe also limited the opportunity for the Ministry to implement a rigorous trial of the approach, materials, assessment tasks and in-service modules before finalisation and scale-up. By comparison, the development of a new national curriculum in the UK began in 2011 with expert teams, including teachers, assigned to different subjects. This review proceeded in a phased way which allowed for extensive consultation and submissions between each step of the process. The development process is scheduled to be completed and all curriculum materials issued to teachers by the end of 2014.

The development process and short timeframe for *Kurikulum 2013* also limited the opportunity to establish buy-in and enthusiastic commitment from key stakeholders, i.e. parents, teachers, education officials, elected representatives and teacher unions. Meetings were held in Jakarta and regionally but these tended to be information-sharing after the main work had been done. These limitations may prove to be critical factors in the extent to which the curriculum will be implemented as intended and whether the desired benefits in student learning and international competitiveness will become a reality.

3.1 The massive task of teacher development for the new curriculum

In preparation for the first phase of roll-out in 6,400 schools, experts conducted regional workshops for trainers. The trainers then conducted training for nominated school representatives to be responsible for continuing the awareness training and support in their own schools. An evaluation of this process by the Ministry indicated that the 52-hour training had been successful. However, a more streamlined model of this cascade training will be implemented in 2014–15 in which 33,000 trainers will provide training direct to schools for approximately 1.4 million teachers.

This is a massive task, for which roll-out and quality assurance will be very challenging. Identifying, mobilising and supervising 33,000 expert teachers is the first challenge. Secondly, changing conceptual understanding an achieving a paradigm shift in five to six days will be challenging enough, but changing actual classroom practice is likely to be far beyond what can be achieved in the timeframe or through a cascade training model. A recent evaluation (2013[5]) of the BOS (School Operating Grants program) cascade training program for principals and school committee members identified many difficulties and concluded that in general, cascade training was shallow, not responsive to context and, while it may be suitable for transmitting information, it was not able to change behaviour. In recognition of the limitations of cascade training, the Ministry is planning a modification of the original cascade model used in 2013, however, in essence, it will still be a cascade model. A widespread change in pedagogy will have to be supplemented by: massive re-alignment of the Quality Assurance and teacher support institutions (LPMP) and teacher pre-service training institutes (LPTK) resources and priorities; enhanced support from school supervisors; and innovative approaches for isolated schools and schools with few or no fully qualified and certified teachers.

The new curriculum comes at a time when a number of significant new responsibilities are being required of principals and teachers in implementing teacher performance appraisal. At the same time, schools are expected to enhance their school-based management, seek or renew their accreditation, undertake a self-assessment as part of the Education Quality Assurance System (EQAS) and work towards improving their compliance with Minimum Service Standards (MSS). Unless principals can find ways to integrate these activities at school level, these quality assurance processes and the new curriculum, are all at risk of not being implemented properly.

3.2 Skill level required for teaching in a thematic, integrated, holistic approach

While a thematic holistic approach has been part of the National Competency Standards since the law was introduced in 2007, there is little evidence that this is widespread practice. Understanding and being able to adopt in practice the approach encapsulated by these three words (thematic, integrated, holistic) would be challenging even for experienced and expert teachers. Given the current low level of both subject knowledge and pedagogical knowledge of teachers (as measured by the Competence Tests), it should be foreseen that the majority of teachers, especially those in small schools and those without full qualifications, will have extreme difficulty implementing the new curriculum, whether in Primary or Junior Secondary. Without intensive support, the change to an "integrated, thematic, holistic approach" is likely to be perceived as a burden, no less heavy than the burden of KTSP (school-based curriculum development) of the past five years.

3.3 The new assessment approach

The area of assessment will be especially challenging as it requires a shift along the continuum from the current *testing culture* in which teachers are assessing lower level skills, such as those based on repetition or what could be learned from working through a text-book, to an *assessment culture.* An *assessment culture* is characterised by multiple forms of assessment which are not standardised, not completed under time pressure, use relevant and real-life contextual examples and require students and teachers to reflect on the learning that has taken place. A key feature of *assessment for learning* is that the teacher is able to accurately establish where students are in their long-term learning, what progress they have made over time in developing their knowledge, skills and understandings, and what are the next steps for the student[6].

To do this well requires teachers to have considerable *assessment literacy* – a deep knowledge of underpinning principles and internalised standards for making their judgements. Criteria for judgements[7] are complex and take time to develop. Apart from content and authenticity of the task, these criteria should include practical dimensions (such as transparency, fairness, comparability, feasibility) and more qualitative dimensions (such as cognitive level and educational meaningfulness).

Teachers develop their *assessment literacy* through opportunities to understand and debate the educational theory related to assessment and by working through student samples and making judgements, comparing their judgements with those of other teachers and gradually internalising standards and criteria for assessment. This process requires that teachers have substantial knowledge of assessment and learning theory, adequate time to discuss with colleagues, and support from experts to develop their assessment literacy.

3.4 Potential negative impact on teacher professionalism

Kurikulum 2013 represents a re-centralising of curriculum and textbook production. It claims to decrease the workload on teachers because lesson plans will be integrated in the teachers' guide books. Teachers will also be relieved of the requirement to develop a KTSP for each school.

However, while a single national curriculum has clear advantages, there is a risk of it curtailing teachers' professionalism and creativity – qualities that are associated with higher student performance on international tests. The 2012 OECD Report on PISA identified a trend that **"***the highest-performing school systems are those that allocate educational resources more equitably among advantaged and disadvantaged schools and that grant more autonomy over curricula and assessments to individual schools***".**[8]While this may well be true, it must also be acknowledged that countries with higher levels of autonomy in education (e.g. Finland) are also the countries with high levels of development and a long history of education provision. Indonesia's challenge will be to strike the right balance between top-down control and bottom-up innovation and creativity in the classroom.

Realising the intention of the new curriculum requires teachers to take a more thoughtful and creative approach to lesson planning and assessment and to adapt their teaching methods to the needs and ability levels of students. If this task is too difficult and teachers lack adequate support and leadership at school level they will understandably revert to the old paradigm.

3.5 Is there sufficient attention to the basics – Maths, Science and Bahasa Indonesia?

The performance of Indonesian students on the international tests (PISA, TIMSS and PIRLS) is of concern to many stakeholders. The balance of the curriculum in Primary is 56% academic (Maths, Science, Bahasa Indonesia and Social Science) and 47% non-academic (Religion, Civics and Citizenship, Sports, Arts and Culture). Achieving significant improvement in Maths for example, may require more learning time than is currently allocated in order for students to acquire the foundational skills. The allocation of six lessons 35 minute lessons per week is equivalent to 3.5 hours per week. This is less than one hour per day to establish foundational Maths skills and may be one of the factors which underlies the low performance of the 70 percent of students who are unable to meet the international minimum competence benchmark (PISA) at age 15. From the PISA results it can be estimated that approximately two thirds of Grade 9 students are lagging behind their international peers by at least 2 to 2.5 years in the level of their Maths achievement.

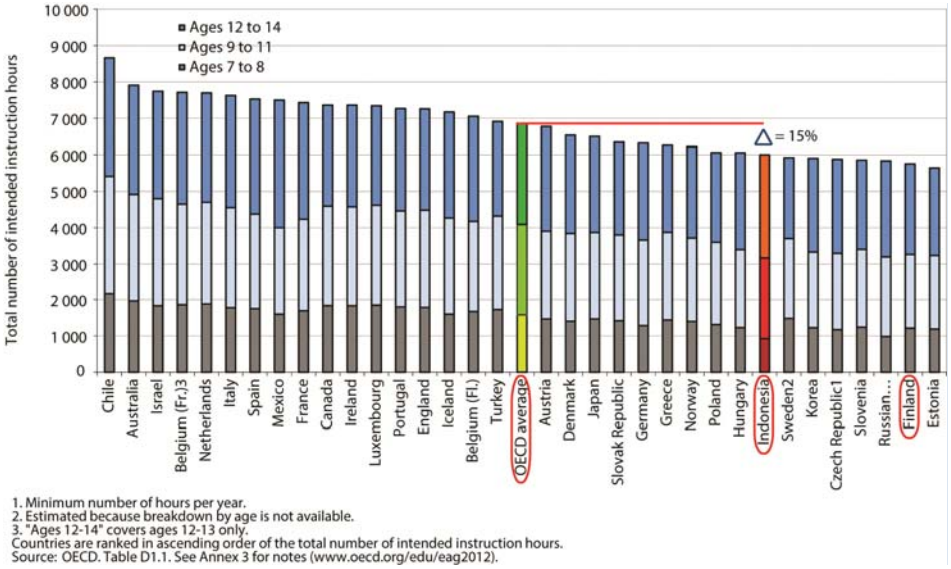
3.6 Achieving a real increase in students' learning time

The new curriculum increases lesson times (an extra 2 hours and 20 minutes for Primary and 4 hours for Junior Secondary each week). Primary now has a total of 21 hours and Junior Secondary 25.3 hours.

These total times per week and the number of teaching days (180) are said to be close to international averages but comparisons are not easily made because of variations in what is curricular or extracurricular (e.g. sport, music) and the years of schooling counted. The graph below from the OECD report, which is pre-*Kurikulum 2013*, shows Indonesia in 2012 to have just over 3,000 hours instruction up to age 11 years – the

lowest of the countries listed. There would need to be a 25% increase in instructional time to match the OECD average of 4,000 hours at primary level. For Upper Primary, *Kuriculum 2013* adds another four lessons per week but this represents only a 12.5% increase. Actual class instruction time is also reduced by the large number of public holidays and the customary break from lessons for exam preparation time. In addition to this, one in six schools in the MSS Survey in 2013[9] did not provide instruction for the mandated 34 weeks per year.

Figure 27. International comparison of instruction hours in Primary school, OECD report



Notwithstanding the above, reports associated with the 2012 PISA tests show that at the school level, there is only a small relationship between test performance and the time students spend learning in and after school. No clear pattern of this relationship is observed at the system level[10].There are many factors other than simply hours of instruction.

Fundamentally, it is *what happens in those additional hours* in *Kurikulum 2013* that will be important. If students are at school, but not learning, the additional hours of attendance will have no impact. To be effective, the time in the classroom must be comprised of active teaching and active learning of the subject.

Box 1. 2009-10 TIMSS Video Study (Andy Ragatz, World Bank)

This distinction between lesson time and actual learning time is well illustrated by the findings of the 2009–10 TIMSS Video Study in Indonesia in which it was clear that the amount of actual time spent on learning was important. Students in classrooms where teachers spent more time on actual maths teaching (rather than on maths organisation and non-maths organisation tasks) achieved higher test scores than others. The amount of teacher–student interaction and time spent specifically on mathematical problems also had a positive relationship with student learning. This underscores a key challenge of Kurikulum 2013 – helping teachers to use lesson time effectively and to be more focused in their teaching.

One problem in guaranteeing the additional hours of instruction is that Indonesia still has significant teacher absenteeism[11]. Although the national average has fallen from around 20% absent per day in 2003 to around 15% in 2013, around one third of teachers are absent every day in remote and disadvantaged areas, such as Papua[12]. Students in these areas are already disadvantaged by being poor, with fewer resources at home and at school, and fewer teachers who are qualified. In these circumstances, where the amount of quality instructional time is very low, there is empirical evidence that high teacher absenteeism has a negative impact on learning.

The multi-faceted challenge is to reduce the high absenteeism of teachers, enable more efficient utilisation of the teaching workforce and establish a more professional culture and work ethic in schools. This will result in students having more continuity in their learning and more purposeful learning, and the distribution of the best teachers will become more equitable. If these challenges cannot be overcome, the new curriculum

will have little or no impact across the less advantaged areas. The new curriculum could become a positive driver for more equitable teacher distribution and support.

3.7 Becoming regionally competitive and keeping up with neighboring ASEAN countries

The liberalisation of trade laws amongst ASEAN countries in 2014 will have implications for the next generation of Indonesia graduates entering the workforce, as they will be compared with, and competing with, their peers from neighbouring countries[13].

Box 2. The 2014 ASEAN Business Outlook Survey

The survey identified Indonesia as the top destination in the ASEAN region for business investment and expansion with one of its key strengths being the availability of low cost labour (rated as satisfactory by 53% of businesses). This is not a desirable scenario for Indonesia's future. The Philippines was ranked most positively for its trained labour (rated as satisfactory by 87% of business) while Indonesia's rating was 39%, the lowest of all ASEAN countries.

To continue and sustain its economic growth in the region, and escape the "middle income trap", Indonesia must increase the skill levels of school leavers and ensure they have the basic skills that employers want and the attitudes that make them ready for work. This issue is explored further in a separate chapter of the Background Study.

'Skills for the 21st century' is now a catchphrase for curriculum in many countries with the twin objectives of enhancing employability and promoting lifelong learning. These 21st-century skills typically include cognitive skills (e.g. maths, literacy, problem-solving), interpersonal skills (e.g. communication skills, team work, leadership) and intra-personal skills (e.g. time-management, initiative, ethics, entrepreneurship). These are not necessarily new skills but their recognition as key outcomes of education is important. To produce more regionally competitive graduates, Indonesia may need to reconsider aspects of curriculum such as the balance of cognitive skills (especially maths and science) within the overall curriculum, the place of English as a language of international communication, and the extent to which interpersonal and intra-personal skills are being developed within both cognitive and non-cognitive subjects.

3.8 Curriculum and improving character

The development of character is seen as an important goal of education and is clearly one of the drivers of *Kurikulum 2013*. However, teachers and parents face many challenges in guiding and shaping young people to internalise social values and behave in accord with moral and humanitarian principles. The challenges include the influence of home and community environments, which, in some cases, condone violence, turn a blind-eye to corruption, discriminate against women or ethnic minorities, and allow community tensions to spill over into the schoolyard. In addition, schools have to learn how to deal constructively with the impacts of globalisation and the widespread use of social media, which are seen by some parents to promote values not endorsed by either the school or the parents.

Before the announcement of the new curriculum, the Ministry had been conducting a pilot program with a small number of schools implementing their own locally-designed character education programs and activities. These programs included: incorporating character education in formal subjects such as Religion and Civics and Citizenship; development of school activities involving community work; providing opportunities for students to take responsibility within the school; participation in team activities; and programs such as Scouting, which has now been included in the new curriculum as a compulsory extracurricular activity. The evaluation of the pilot program has not yet been made public.

An extensive literature review of character education programs[14] conducted in and outside of schools concludes that "character skills" can be taught, can be measured and have been shown to have a positive association with acquisition of cognitive skills. The authors of the review propose that character development and cognitive learning go hand-in-hand, they are not separate activities. **Character develops *as learning takes place.*** Furthermore, the authors suggest that character skills can predict later-life outcomes just as well as achievement on cognitive tests. Perhaps this is so because cognitive tests also measure character to some degree, i.e. students who score high grades on tests are likely to be those students who attend regularly, pay attention, take care with their work, persist in solving problems, complete assignments, are self-reliant and motivated to achieve, show concern for others and have a positive mental attitude.

In the meta-analysis of character education studies, the early years were shown to be most influential, with both families and school environments having an influence. The analysis also included findings that showed that character skills can change over time and, therefore, what happens throughout the schooling years is important.

In addition to deliberate activities and "teaching" of character skills, two concepts are highly relevant to the development of character at school – the concept of the **hidden curriculum** and the influence of **school climate.**

Box 3. The Hidden Curriculum

In the classroom and in the schoolyard, the "hidden curriculum" is what students learn unconsciously from relationships, the school climate and the values that are transmitted on a daily basis. This includes the ways that teachers and students relate to one another, the attitude of teachers (e.g. whether they are well prepared for lessons, whether they are frequently late or absent), the nature of school rules and the way that rewards and punishments are given out, the level of responsibility given to students, how the school community views cheating on exams and how the school values or de-values minority students. This is called the "hidden curriculum" because while these things may not be explicitly stated, they can have a more powerful impact on students' values and behaviour than the formal curriculum for character development.

School climate, as an outcome of the hidden curriculum, has been identified in many years of education research as having a direct influence on student motivation, confidence and achievement. It is also one of the important factors consistently associated with effective schools – schools in which students achieve at higher levels than can be expected from their prior learning and their home background. It is therefore not surprising that positive school climate is also one of the key school level factors identified in PISA research[15] that is correlated with higher student learning outcomes.

In summary, it is reasonable to propose that character development should be approached within a comprehensive framework that includes:

- recognising the role of parents in establishing core values
- the importance of establishing positive attitudes and behaviours in the early school years
- the inter-connectedness of character development and cognitive learning and therefore, the importance of good pedagogy throughout schooling
- the influence of the hidden curriculum – school climate and culture
- the value of a positive school climate characterised by respect and concern for one another, collaboration, openness, joy in learning, encouragement more than punishment
- programs, especially in the adolescent years, which directly develop personal and inter-personal skills for the workplace and for life.

4. Proposed future directions for the curriculum

The clear intention of the Indonesian Government is to ensure that students, in all circumstances, will receive the intended curriculum. However, there is a huge "disconnect" between the policy intentions of the national government and the quality of service delivery at the local level. The reasons for this disconnect are historical, very complex (including contradictory or unclear laws and regulations) and vary with context (e.g. inexperience of staff in newly created districts). As can be seen in other chapters of the Background Study, the reasons are not primarily lack of funding, but lack of individual and system capacity.

In this context the key issues that will impact on the roll-out of the new curriculum are: the current low competence of teachers; the weak pedagogical leadership capacity of principals, supervisors and officials; and ineffective quality assurance systems, coupled with the lack of either sanctions or incentives to fully implement national policies as intended. Implementing *Kurikulum 2013* as intended will require both strengthening existing systems and adopting some new ways of working with schools and teachers.

The key to strengthening systems and improving schools may lie in the **balance of "pressure and support"** in which school accountability, transparency with the community, performance management of teachers, school appraisal and monitoring processes are strengthened at the same time that more effective support is provided to teachers by supervisors, principals, support groups and in-service providers. Negative pressure has a blind sense of urgency but is pressure without means; it is punitive and results in blaming, shaming and win-lose competitions. In contrast, **positive pressure** has a focused sense of urgency,transparency of data and non-punitive accountability, and it brings together peers and partnerships[16]. This concept of pressure and support appears to work in many contexts, including developing countries, but needs to be customised for the Indonesian cultural context in which individuals are often reluctant to challenge the views of more senior persons or to give direct and honest feedback to peers and supervisees.

In relation to the implementation of the new curriculum, using the model of pressure and support, key questions will be: Is a given pressure or support action motivational for those who will be responsible for implementing change? Will it generate the intrinsic desire inteachers, district officials, principals to **put in the effort to get good results**? The appropriate and potentially most effective resource to provide the pressure and support for the change process (and school improvement in general) is the approximate 27,000 school supervisors based at district/city offices and whose role was intended (by the School/*Madrasah* Supervisor Standards 12/2007) to monitor schools and guide and support teachers.

Currently, however, school supervisors are massively under-utilised for school improvement and in many cases unsuitable and/or lacking skills to take a leading role in educational leadership. The teacher competence tests undertaken in 2012–13 found the average score of supervisors to be lower than that of principals or teachers. In 2013, a Baseline Survey[17] of the specific skills needed by supervisors found that "supervisors lacked competence in key areas related to their role – particularly advice to teachers about effective teaching and learning, use of laboratories to support learning, developing indicators of effectiveness, analysing and using the results of supervision and all aspects of research and development".

At this stage, the majority of supervisors would be incapable of effectively leading pedagogical reform. There are many reasons for this situation including recruitment practices not aligned with the role, lack of training and development opportunities, lack of travel allowance or transport to visit schools, weak accountability and no well-defined mandate. A major reform of the role, recruitment, qualifications and conditions of school supervisors could be the keystone for effective and sustainable school improvement, including effective implementation of curriculum. Such reform is already in the pipeline. In 2014, supervisors are being included in continuous professional development programs for school principals, and legislation is being drafted by the Ministry for reforms to their role, recruitment, support and conditions. This reform must be implemented fully and a new culture established in which supervisors will be the front line of improvement, using both pressure and support to drive more effective teaching.

4.1 Recommendations for consideration by Government

(i) **The new curriculum must be given adequate time to deliver the expected benefits, but there should be ongoing rigorous and comprehensive evaluation** based on observations in classrooms and expert analysis, which can lead to incremental improvements in the curriculum at all stages of implementation. The review and evaluation should be independent from those responsible for implementation.

(ii) **Establish an independent authority such as a new Curriculum and Assessment Authority or a revitalised and properly resourced National Standards Board (BSNP).** This independent authority would be responsible and adequately resourced to implement a cyclical plan of review with extensive opportunities for teachers and all education stakeholders to participate fully in review processes, providing a range of evidence, including samples of students' work and classroom assessments. This could avoid the frequent "sudden shocks" of the last decade's curriculum pronouncements and ensure that classroom evidence was part of the review process. An independent authority would also provide some measure of protection from alternating political interests.

(iii) **Within *Kurikulum 2013,* urgent consideration should be given to reviewing the total lesson time for academic subjects in Primary and Junior Secondary, in order to allocate more lesson time for improving performance in Maths, Science and Literacy,** as student achievement in these areas is very low on both national exams and international tests when compared with international standards.

(iv) **Teacher support for the new curriculum should be focused on in-school collaboration for professional learning, led by principals and supported by competent school supervisors.** This will require principals to be fully prepared to take on the role of pedagogical leaders in their schools.The current Continuous Professional Development (CPD) program for principals and candidate principals must be implemented as planned, and sustained. School and *Madrasah* supervisors must partner with principals at the front line in the process of improving teaching, drawing on support from teacher education institutions and networks, including teacher professional associations. Training and development for teachers must be primarily on-the-job learning using what has been proven to work in classrooms. This can be supplemented by resources on the Internet, networking through social media platforms, capitalising on advances in tablet and mobile phone technology as well as formal distance learning to provide resources and support when teachers need it most. Innovative curriculum support should enable teachers in all circumstances to network, share lesson plans and assessment tasks and have immediate access to teaching resources from the Ministry.

The approach over the next five years should be kept as simple as possible, working on a small set of key objectives to keep a strong focus and not overwhelm teachers. It must capitalise on the two key drivers of improvement – instructional leadership by principals and supervisors, and the creation of a positive school climate in which teachers work together as a professional learning community[18]. The approach cannot be entirely driven from the national Ministry. Local government, teacher training institutions, universities and teacher professional associations must also take leadership responsibility. A change in teacher behaviour will not come as a result of national regulation without effective bottom-up support and initiative.

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Appendix 1. Summary of Changes in Structure of Curriculum

Table A1. Primary School: Allocation of lessons by number of hours

Subject	Grades					
	I	II	III	IV	V	VI
Group A						
Religion	**4**	**4**	**4**	**4**	**4**	**4**
Civics and Citizenship	**5**	**6**	**4**	**4**	**4**	**4**
Bahasa Indonesia	**8**	**8**	**10**	**7**	**7**	**7**
Mathematics	**5**	**6**	**6**	**6**	**6**	**6**
Science	**-**	**-**	**-**	**3**	**3**	**3**
Social Science	**-**	**-**	**-**	**3**	**3**	**3**
Group B						
Art, Culture and Craft	**4**	**4**	**4**	**5**	**5**	**5**
PE, Health and Sport and/or local content	**4**	**4**	**4**	**4**	**4**	**4**
Total hours	**30**	**32**	**32**	**36**	**36**	**36**

Table A2. Junior Secondary School: Allocation of lessons by number of hours

Subject	Grades		
	VII	VII	IX
Group A			
Religion	**3**	**3**	**3**
Civics and Citizenship	**3**	**3**	**3**
Bahasa Indonesia	**6**	**6**	**6**
Mathematics	**5**	**5**	**5**
Science	**5**	**5**	**5**
Social Science	**4**	**4**	**4**
English	**4**	**4**	**4**
Group B			
Arts and Culture, including local content	**3**	**3**	**3**
PE, Health and Sport	**3**	**3**	**3**
Craft, including local content	**2**	**2**	**2**
Total hours	**38**	**38**	**38**

Table A3. Academic Senior Secondary (SMA): Compulsory component – Allocation of lessons, by hours

Overall curriculum pattern	Grades		
	X	XI	XII
Compulsory Group A			
Religion	**3**	**3**	**3**
Civics and Citizenship	**2**	**2**	**2**
Bahasa Indonesia	**4**	**4**	**4**
Mathematics	**4**	**4**	**4**
History	**2**	**2**	**2**
English	**2**	**2**	**2**
Compulsory Group B			
Arts and Culture, including local content	**2**	**2**	**2**
PE, Health and Sport	**3**	**3**	**3**
Craft, including Entrepreneurship	**2**	**2**	**2**

Table A4. Academic Senior Secondary (SMA): Elective component additional to above compulsory subjects – Allocation of lessons by number of hours

Elective Specialist Options	Grades		
	X	XI	XII
Maths and Science			
Maths	3	4	4
Biology	3	4	4
Physics	3	4	4
Chemistry	3	4	4
Social Studies			
Geography	3	4	4
History	3	4	4
Sociology and Anthropology	3	4	4
Languages			
Indonesian Language/Literature	3	4	4
English Language/Literature	3	4	4
Other Foreign Languages	3	4	4
Anthropology	3	4	4
Options	6	4	4
Maximum total hours	**68**	**72**	**74**
Minimum total hours	**42**	**44**	**44**

Table A5. Vocational Senior Secondary (SMK): Overall curriculum pattern and hours

Total pattern of study SMK	Grades					
	X		XI		XII	
	SM1	SM2	SM1	SM2	SM1	SM2
Group A						
Religion	**2**	**2**	**2**	**2**	**2**	**2**
Civics and Citizenship	**2**	**2**	**2**	**2**	**2**	**2**
Bahasa Indonesia	**3**	**3**	**3**	**3**	**-**	**-**
Mathematics	**6**	**6**	**6**	**6**	**-**	**-**
Physics	**4**	**4**	**4**	**4**	**-**	**-**
Chemistry	**2**	**2**	**2**	**2**	**-**	**-**
Computers and Information Technology	**2**	**2**	**-**	**-**	**-**	**-**
English	**4**	**4**	**4**	**4**	**-**	**-**
Specialist Vocational Electives	**13**	**13**	**15**	**15**	**40**	**40**
Compulsory Life and Career Skills	**2**	**2**	**2**	**2**	**2**	**2**
Group B	SM1	SM2	SM1	SM2	SM1	SM2
Arts and Culture, incl. local content	**2**	**2**	**2**	2		
PE, Health and Sport	**2**	**2**	**2**	*2*		
Local content skills e.g. languages	**2**	**2**	**2**	2		
Total lesson hours	46	46	46	46	46	46

Chapter 3. Character Education

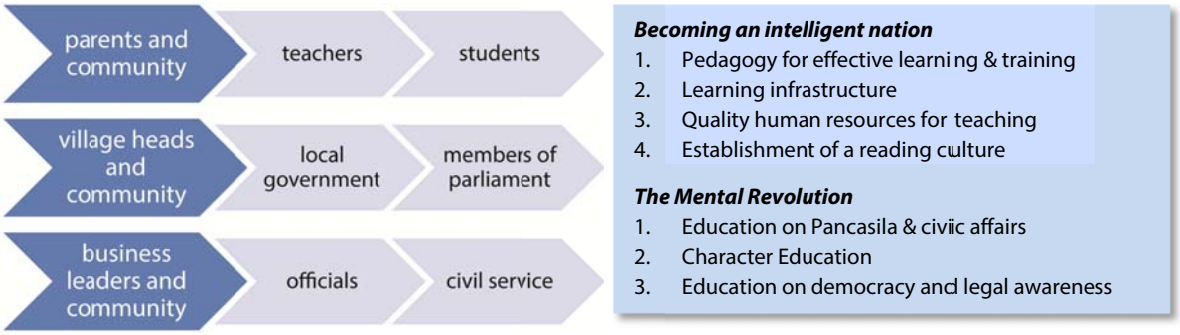
1. Context – the *Mental Revolution*

The context for this paper is the *Mental Revolution* proposed by the President in his election campaign, and reiterated by him in government, as a key strategy for improving individual well-being and national productivity and producing citizens who have noble values, national pride and cultural identity. The broad objectives of the *Mental Revolution* therefore include positive nation-building and restoration of the values of Pancasilla and Trisakti to create a new paradigm, political culture and approach in government that will be more humanitarian and reflective of national culture and values. At the individual level, the *Mental Revolution* underpins personal transformations in how people, think, act and relate to one-another.

The *Mental Revolution* is proposed as a way to counter problems in society. At the level of the individual, the problems are identified as corruption, intolerance, selfishness and a tendency to use violence to solve problems, disregard of the Law and widespread opportunism. At institutional level the problems are seen to stem from "money-politics", the low quality and integrity of many elected representatives, and a bureaucracy that is in many instances perceived to be self-serving, with low capacity and low standards of integrity and reliability. At the societal and national level the problems are identified as social turmoil resulting in unrest and public dissent.

The change in mindset is envisaged to be a national movement from the grass-roots, beginning with the family unit and expanding through all levels of society and the institutions of government.

Figure 28. Mobilising communities to produce the mental revolution



Source: the points on becoming and intelligent nation and the Mental Revolution are extracts from materials issued in the campaign of President Joko Widodo prior to his election

Education alone cannot sustain the *Mental Revolution*. The full development of students, physically, socially, emotionally, spiritually and intellectually is a task shared by the family, the community and the school. Furthermore, in order for the school to be effective in its role, there needs to be an *enabling environment* that includes collaboration with and support from family and community as well as the many institutions of government which support education and social development.

The relevance of school effectiveness research to the *Mental Revolution*

National and local government can best support the *Mental Revolution* as it applies to students and teachers by strengthening the factors that are associated with effective schools and increasing the pressure and support on ineffective schools.

Key characteristics of effective schools identified in reviews of the past 30 years typically include the following processes[1]:

Key Characteristics of effective schools	***Typical processes***
1. Effective leadership	Being firm and purposeful Involving others in the process Exhibiting instructional leadership Frequent monitoring of personnel Some autonomy in selection of staff
2. Effective teaching	Unity of purpose Consistency of practice Collegiality and collaboration
3. Developing and maintaining a pervasive focus on learning	Focusing on academics Maximizing school learning time
4. Producing a positive school culture	Creating a shared vision Creating an orderly environment Emphasizing positive reinforcement
5. Creating high & appropriate expectations for all	For staff For students
6. Emphasizing responsibilities & rights	For staff For students
7. Monitoring progress at all levels	At the school level At the classroom level At the individual level
8. Developing staff skills at the school site	Site based integrated with ongoing professional development
9. Involving parents in productive & appropriate ways	Buffering negative influences Encouraging productive interactions with parents

The review cited above (Sammons & Bakum 2011) which highlights the key characteristics of effective schools also draws the conclusion that **ineffective schools are not merely mirror images of those that are more effective.** Rather than simply lacking the key features of effective schools, ineffective schools are likely to have in common some specific negative features of school culture:

- lack of vision,
- unfocussed leadership,
- dysfunctional staff relationships,
- ineffective classroom practices.

Ineffective classroom practices, are typically characterized by:

- inconsistent approaches to the curriculum and teaching,
- lower expectations for students of low socio – economic status (SES),
- emphasis on supervising and communicating about routines,
- low levels of teacher-student interaction,
- low levels of student involvement in their work,
- students perceive their teachers as people who do not care, praise, provide help, or value learning,
- teachers make more frequent use of criticism and negative feedback.

Strengthening the positive processes and helping to "turn-around" ineffective schools will require national and local government to clarify roles, expectations and policies, review legislation and practices that are inconsistent with the *Mental Revolution*, provide capacity development and support for civil servants and elected representatives and to strengthen existing quality assurance and accountability, both upwards and downwards. In order to achieve the desired change in mindset and behaviour with large numbers of civil servants (including teachers, principals and supervisors) the incentives and sanctions associated with the change must outweigh those associated with the old culture. This is a change process involving hearts and minds, values and culture for which the lessons from research on school effectiveness are highly relevant and provide practical guidance.

2. Purpose and Outline of this paper

The purpose of this paper is to explore the role of character development as one aspect, possibly even the most important one, in the full development of human potential, and to outline various approaches to character development in Indonesia and other countries. The paper then draws on this information and the findings of international research to identify the approach that appears to work best for character development and that will support and sustain the objectives of the *Mental Revolution*. The sub-sections of the Paper are -

- The role of character education, non-cognitive skills and 21st Century skills
- Approaches to character development and some international examples
- The Indonesian approach and the intention of *Kurikulum 2013*
- Overview of international researchon the effectiveness of character education
- Character education to support the *Mental Revolution* through good teaching and learning.

In this paper, character is defined as: **the set of moral beliefs, values and understandings acquired by students from birth and through their education which guide how they think, feel and act and how they see themselves as a member of a group.**

3. Character Education as part of non-cognitive skills development

Character education is part of the non-cognitive domain of education. Globally there is strong interest in the non-cognitive outcomes of schooling. This is partly human-rights oriented – in the words of UNESCO "education should be directed to the full development of the human personality" [2] but it also recognises that education is a process of socialisation of young people in accord with agreed values.

Non-cognitive traits and skills relevant to academic achievement typically include:

a. variables such as attitude, values, interest, creativity, curiosity;
b. personality or temperament variables, such as conscientiousness, a calm temperament ;
c. social relations variables including leadership, social sensitivity, the ability to work with others;
d. self constructs such as self-confidence, national identity;
e. work-habits such as effort, discipline, persistence, and time management;
f. emotions, such as enthusiasm, compassion.

Box 4. India – 9 non-cognitive areas to be incorporated in all curriculum

India has identified 9 non-cognitive areas *to be incorporated in all curriculum:*
punctuality
cleanliness
diligence
sense of duty
equality
cooperation
responsibility
truthfulness
national identity

www.teindia.nic.in/nhrd

Sociologists and economists argue that a well-developed set of non-cognitive traits and skills can have an equal or stronger association with successful school and job performance than academic knowledge[3]. This is not really surprising if we consider that non-cognitive traits and skills, such as attendance, punctuality, persistence, organizational skills, and working with others, are essentially the same characteristics that both teachers and employers consider important.

. . . the way that young people live, learn, work and play is being constantly transformed by technology.

The economic value of non-cognitive factors is one of the key drivers behind the formulation and promotion in many countries of *21st Century Skills*. These skills recognise that the world has changed dramatically in the past 2 decades and that the way that young people live, learn, work and play is being constantly transformed by technology. Students today have many more learning opportunities as well as many more ethical issues to deal with on a daily basis. Schools have a critical role in ensuring that students develop the skills they need for the 21st century within a solid values framework.

21st Century Skills

This concept brings together higher order and critical thinking skills with technology. A number of working groups and education think tanks around the world are trying to define these skills and the implications for classroom teachers. One of these think-tanks is the *Partnership for 21st Century Skills*[4] and it includes the following 5 elements as 21st Century skills and content:

Box 5. 21st Century Skills

21st Century Skills and Content	**Ways of Thinking**	**Ways of Working**
	Creativity and innovation Problem identification, formulation & solution Critical thinking & analysis Decision-making skills Learning to Learn (meta-cognition) Systems thinking Intellectual curiosity	Communication skills Collaboration Persistence Flexibility and adaptability Productivity and accountability Leadership and responsibility
Tools for Working	**Living in the World**	**21ST Century Content**
Information literacy ICTs including computer, internet and other technologies Audio, video and other media Research and analysis skills Software and applications for data display	People skills Personal qualities and values Personal and social responsibility Cultural awareness and competence Life and Career skills Initiative and self-direction	Global awareness Financial, economic and business literacy Civic literacy - local and global Ethics Sustainable futures Caring for the environment

4. Main Approaches to Character Education

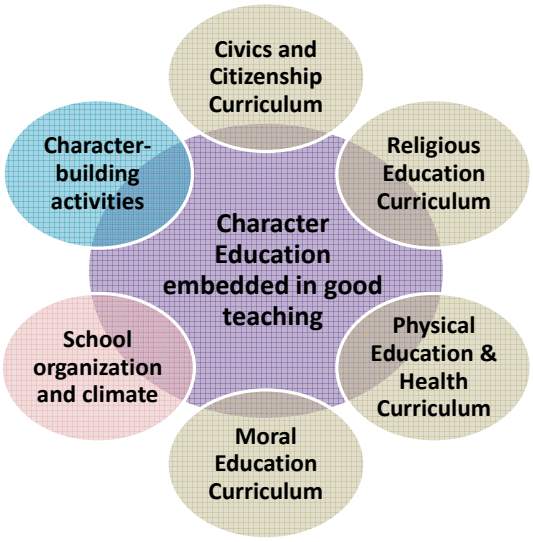
Education systems have historically addressed character development through explicit, specific purpose curriculum and activities to promote desired values and behaviour. More recently, a worldwide trend has

been to embed *attitude* components in all curriculum. Character development is also demonstrated to be powerfully influenced by school organisation and social environment (i.e. school climate) and how teachers teach (i.e. good pedagogy).

The four approaches can be summarised as follows-

(i) providing **special curriculum**, e.g.moral education, civics, religion, health,
(ii) providing **activities** and real-life opportunities to build character and reinforce specified values, e.g. scouting, community service,
(iii) **embedding non-cognitive elements in all subjects** of the curriculum (e.g. by specifying knowledge skills *and attitudes*) **andingood teaching practice,**
(iv) developing a **school climate and school organisation as the enabling environment for character development**.

Figure 29. Explicit Character Development



Explicit character development occurs through curriculum, activities and an enabling school environment. In addition, and perhaps more importantly, character education *is embedded* in how teachers teach – good pedagogy, or bad pedagogy, has a powerful positive or negative impact on students' attitudes and values.

4.1 Examples of explicit curriculum for character education

Religious Education curriculum

Religious education overlaps with, but is generally considered to be separate from, character education. This is because the teaching of values, attitudes and behaviour in religion is within the framework of a specific doctrine in which students are helped to develop knowledge and understanding to practice their family religion (e.g. to observe its rituals and holy days, recite holy texts) and to develop spiritually in accord with their particular faith.

Many countries maintain an entitlement in education law for students to have religious education and require schools employ teachers or visiting clerics specifically for that purpose. The level of training and expertise of teachers and clerics for their role in teaching religion in schools varies widely and is problematic in many countries where teachers of religion have not had the same degree of pedagogical training as teachers of other subjects. Where there are many religions practiced in a community it is not always possible to provide the instruction in every religion and alternative options may include: developing a generic study

of religions of the world; establishing multi-faith curriculum and activities; or providing some alternative education experience focussed on oethis and moral decision-making.

Moral and Character Education Curriculum or Programs

In a survey of 31 European countries, Korim and Hanasova[5] (2010) found that 14 countries had a designated character-building curriculum. In these countries the curriculum for character building seemed to be of 3 main types loosely associated with geo-political divisions: broad holistic approach in northern Europe (e.g. Scandinavia); religious focus in southern-western Europe (e.g. Italy and Spain); moral education focus in central European countries (e.g. Estonia). This suggests that the nature of character education is associated with broad national contextual factors, including history of religions.

In Indonesia's local region, there are example countries providing both religious and moral education.

- In **Malaysia** for example, Muslim students have Islamic Studies and students in non-Muslim schools have Moral Education (ME). The ME syllabus has been in place for more than two decades. The ME syllabus was reviewed a decade ago, and is expected to undergo another evaluation and revision to ensure that it is responsive to Malaysia's dynamic multicultural setting. The focus of teaching and learning in ME is based on seven key principles for holistic development of individuals physically, intellectually, emotionally, spiritually, and socially. The principles are: to be responsible towards self, family, and others; to be steadfast towards one's religion; to be caring towards the environment; to sustain a peaceful and harmonious life; to be patriotic; to respect human rights; and to practice principles of democracy in life[6]

- In **Singapore**, education includes a civics programme which seeks to instil a sense of place, identity and history in young Singaporeans with a view to developing national pride and commitment. The Primary curriculum is described as having 3 components – academic subjects, skills development and character development. The content study for character education is located within Civics and Moral Education (CME) syllabus and focuses on instilling sound values in children, to take them through life as a responsible adult.[7]

- In **Taiwan**, character education is not listed as part of the formal curriculum however the Taiwan Ministry of Education (TMOE) launched a Moral and Character Education Improvement Program (2006).The main goals of the program are: to facilitate the development of students' moral thinking and their ability to select, reflect on, cherish and identify with core ethical values and codes of conduct; to develop a character-based moral culture in Taiwanese schools, one involving teachers, students, administrators, parents and community leaders; to strengthen the roles parents and community leaders play in schools' moral and character education; and to give non-political organisations, cultural and educational foundations, as well as the mass media, a larger role in schools' moral and character education. [8]

Civics and Citizenship Curriculum

Civics and Citizenship education generally has two broad objectives – to strengthen students' understanding of democracy and prepare them to be active participants in society and (ii) to develop their sense of national and local identity and culture. While some countries have included these objectives in their Social Studies curriculum, the development of a separate subject has provided more emphasis and opportunity for an active learning approach with both local and global perspectives. For example, in civics classes student may -

- develop knowledge and understanding of their system of government, legal system and civil organisations at local and national level,
- learn about their history, flag, symbols, monumentsand important heroes, both local and national,

- develop an appreciation of their rights and responsibilities including the capacity to act as informed and responsible citizens and to critically examine values and principles,
- learn to value a multicultural and a multi-faith society through a commitment to human rights and intercultural understandings
- investigate their local community, natural and man-made environment and become actively engaged in environmental and historical preservation.

Personal Development/Health/Physical Education Curriculum

Physical Education (PE) has historically been treated separately from other curriculum areas because it involves physical activity, often outdoors, specialist facilities and specialist teachers but, in a more holistic view of human development, Health and PE can also include aspects of personal and social development curriculum. This covers a broad range of issues relating to healthy lifestyle and personal responsibility, including nutrition and fitness, prevention of harmful behaviours such as drugs and alcohol abuse, child-protection, driver safety, reproductive health, personal and family relationships – appropriate to the age of students and in line with community values. This broad approach recognises that adolescents often lack access to essential information about sensitive issues, but that the inclusion of sensitive areas requires a lot of consultation, parental agreement and specialist training of teachers and health educators.

Ethics and Philosophy Classes

Ethics and philosophy classes are sometime offered for senior students to learn how to respectfully discuss and evaluate different viewpoints and apply logic and critical thinking to analysis of behaviour. Different schools of philosophy can be discussed and critically evaluated for their relevance to everyday decisions. Educators have also found that younger students are equally interested in and capable of engaging in discussions about ethics.

In the Australian state of New South Wales, ethics education is available for students not taking special religious education in public primary schools. This is currently offered as a pilot program to Grade 5 and Grade 6 students.[9]The focus is ethical decision making, action and reflection within a secular framework, based on philosophy. An NGO (under the auspices of a respected think-tank, the St James Ethics Centre) is responsible for all aspects of course delivery, including providing trained parent volunteers and teaching resources. Students learn rules for discussion and how to develop and make a case for a point of view and then participate in discussion of topics which relate to their everyday lives – e.g. evaluation of school rules; should students be allowed to choose their own clothes; controls for internet browsing and use of social media. Some religious leaders have expressed concern that parents are choosing ethics education ahead of special religious instruction in public schools.

Dangers in Constantly Adding to the Curriculum Vs. "Mainstreaming"

Education systems are frequently under pressure from a range of sources (e.g. academics, politicians, well-intentioned lobby groups and activists) to include special curriculum to address specific issues, often as a response to media reports of problems in society or local instances of unacceptable or dangerous behaviour. Examples could include motor-cycle safety, personal financial management, grooming for success in the workplace, HIV/AIDS education, self-defence training for girls, etc. There could be a very long list of good ideas however, rather than continually adding new courses to the curriculum, schools should have some flexibility within existing curriculum to cover themes that are important locally or at a particular time.

Environmental Education in Indonesia is a good example of how new knowledge and emerging global and national issues can be mainstreamed in existing curriculum. Following Law 32/2009 and a joint MoU with the Ministry of Environment, the Ministry of National Education developed the *Adiwiyata* program as a whole school approach for environmental education. In this approach schools incorporate environmental sustainability principles and practices within the school's vision, mission, management, curriculum and pedagogy.A national action plan has been developed, building on effective practices of schools that are committed. A review conducted in early 2014[10] found the approach to be sound and identified 2,520 schools

that were operating in accord with the *Adiwiyata* approach. The review also noted that the expansion of the program, being organic rather than mandatory, was slower than desired. The report identified lack of awareness and resources (including knowledge management, formal networks and online support) as key issues to be addressed in expanding and strengthening the program.

4.2 Character-building activities

Examples of character education being delivered as an activity, can be within-school, in the community, or in the out-doors as an extra-curricula program-

- establishing student councils, school leaders programs, youth parliaments and debating programs which provide opportunities for students to learn by experience about democratic processes and the skills of leadership, representation and advocacy,
- peer tutoring and peer support programs in which older or more academically-able students within the classroom or schoolmay tutor or mentor younger students,
- Scouting programs as implemented in Indonesia and many other countries (e.g. British Commonwealth countries also include Duke of Edinburgh Awards programs) in which students undertake out-door and usually challenging activities and group work under supervision, learn to be self-reliant, responsible members of a team, etc.
- Students undertaking shared duties and responsibilities within the school e.g. keeping the classroom clean and tidy, helping supervise younger students at play, assisting the librarian, gardening, escorting visitors, assisting in the IT laboratory, etc.

Box 6. Ontario - The Character Development Initiative

It promotes the importance of equitable and inclusive schools in which all students are welcomed and respected, feel a sense of belonging, and are inspired to achieve to the best of their ability.

Character development seeks to provide students with tools for increasing academic achievement and for building a solid foundation for thoughtful decision making and problem-solving.

Source: Ontario Ministry of Education

- Voluntary community service activities such as clean-ups, environmental watch programs, visiting sick or elderly, fun-runs, fund raising for charities,
- Mandatory and assessable curriculum components such as the Creativity, Action, Service (CAS) core component of the International Baccalaureate Programme11.

4.3 School organization and the "school climate"

This approach is well illustrated by the example of Ontario Province in which their approach to character education is to integrate the academic and social aspects of learning through the way the school is organised, how teachers and students interact, teaching practices which value diversity and the level and scope of parent and community engagement with the school.

The key principles of the **Ontario Character Development Initiative**[12] are:

- Character development is about excellence in education, communities that are vibrant and caring, and students who will think critically, feel deeply and act wisely.
- A quality education is about more than academic achievement – it is about the development of the whole person.
- Parents and families have the primary responsibility for the development of their children's character, with the support of their school and community.
- Student engagement is essential to all character development processes.

- Ontario teachers and all education workers play a pivotal role in the success of character development in our schools. Character development must be a whole school effort. All members of the school community share the responsibility to model, teach and expect demonstrations of the universal attributes in all school, classroom and extracurricular activities.
- Respect for diversity must be at the heart of all policies, programs, practices and interactions.
- Learning cultures and school communities must be respectful, caring, safe and inclusive.
- Character development must be integrated into the curricular experiences of students and embedded into the culture of the school and classroom in an explicit and intentional manner.
- Character development is not a stand-alone initiative; it has linkages with learning and academic achievement, respect for diversity, citizenship development and parent and community partnerships.

Teachers as role models for students

Parents and teachers have the most enduring impact on the development of character in the early years. Both parents and teachers convey to young people "*how to be*" implicitly through their own behaviour as much, or more by what they do, than what they say.

Decree 16 of 2007 on Teachers, describes the pedagogical and the personal and social qualities required of teachers in Indonesia. The Personal and Social competencies are:

Box 7. Teachers' Personal and Social Competencies

Personal competencies	Act in accordance with Indonesian norms, religions, laws, social and national culture
	Present oneself as an honest and noble individual and a role model for students and community
	Present oneself as a strong, stable, mature, wise and prudent individual
	Demonstrate high levels of responsibility, confidence, work ethic and pride in one's profession as a teacher
	Uphold the teachers' code of ethics.
Social competencies	Act inclusively, objectively and without discrimination on the basis of sex, religion, race, physical condition, family background and socio-economic status of students
	Communicate in effective, empathic and polite way with other teachers, educational personnel, parents and community members
	Adapt to the location, context, social and cultural diversity of their teaching assignment in any part of Indonesia
	Effective verbal and written communication with teachers and other professionals

Teachers' own behaviour and character should reinforce what they expect of students. Where there is a mismatch between what the teacher says and how the teacher behaves, students will become confused and distrustful – not a good basis for learning.The personal and social characteristics above should form a major part of the selection criteria for entry to the teaching profession and should be monitored by the principal or the teacher's in-school supervisor and assessed as part of regular performance appraisal and performance management.

From the 2012 Sample Survey of the Minimum Service Standards[13] approximately 80% of principals reported that they visited classrooms to observe and give feedback to teachers but the actual implementation of the performance appraisal system is very weak and there do not appear to be any sanctions for principals to use with teachers who consistently fail to demonstrate these competencies.

4.4 Embedded in all curriculum, good teaching and management

For at least the last three decades, curriculum developers around the world have been specifying *attitudes* together with skills and knowledge as outcomes in each learning area. The current Indonesian curriculum is also expressed in terms of knowledge, skills and attitudes but operationalising the inclusion of attitudes and then assessing their development has posed a challenge for many teachers. Explicit curriculum resource materials and sample assessments can help bridge the gap in their experience.

Every aspect of good teaching supports character development. The personal and professional qualities that the teacher brings to the classroom convey powerful messages to students about relationships, attitudes and values.

For example in Science, Year 6 students may be studying natural disasters such as Volcanic Eruptions, Tsunami and Floods. The teacher could develop a lesson plan for a 2 week period in which students select one type of natural disaster and work in small groups to research the information and then prepare a presentation to the class. The teacher's lesson plan could look something like this:

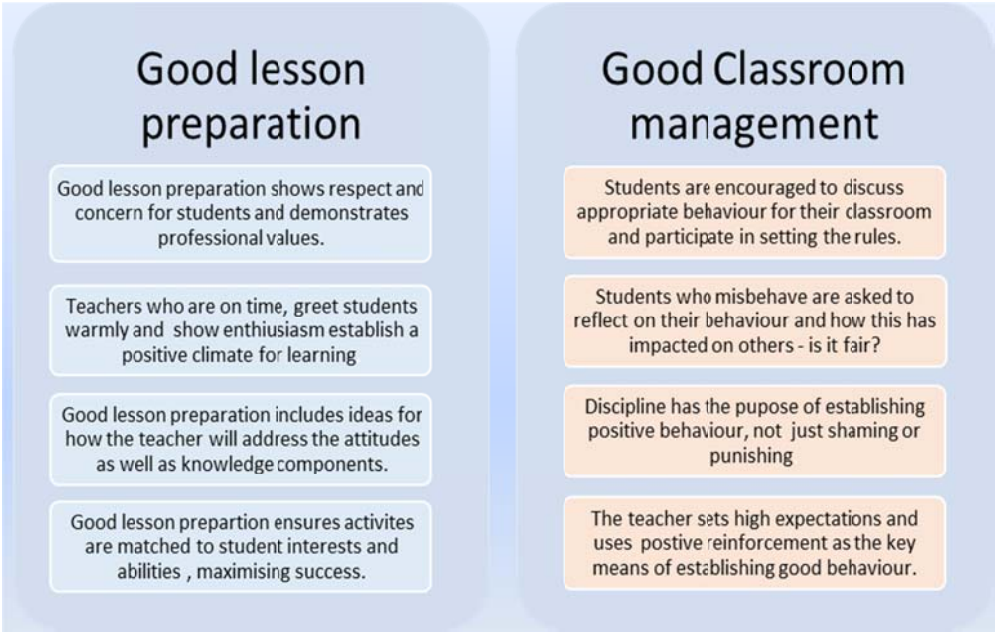
Figure 30. Sample lesson plan with Knowledge, Skills and Attitudes support Character Education

<table>
<tr>
<td>Assignment Topic:
Natural Disasters
Volcanic Eruption, Tsunami, Floods

Students select one of the topics above and work in a group to develop an oral and written presentation</td>
<td>Knowledge
• What causes this kind of disaster?
• What do communities do when this kind of disaster happens?
• What preparations are necessary?
• How does our management of the environment take into account this kind of disaster?
• What does knowing this information mean? What difference will it make to the community?</td>
</tr>
<tr>
<td>Skills
• Cooperation and assignment of roles for the task
• Locating information using a variety of sources
• Choosing and using different graphic organisers
• Designing a power point or written presentation
• Making notes and preparing an oral presentation
• Sequencing ideas in a logical manner
• Clearly stating ideas in written or oral presentation</td>
<td>Attitudes
• Curiosity for how the world works
• Compassion for those affected by disaster
• Community spirit - willingness to support others
• Ability to work together in a team
• Motivation to prepare a good presentation
• Discipline and determination to complete the task to a high standard
• Confidence to speak in front of a group
• Consideration for the views of others</td>
</tr>
</table>

The concept of **embedded character development** is not just about content. It also includes a focus on the **quality of teaching and learning** in which students' relationships and daily experience in the classroom shape values and attitudes about working together, learning, respect for others, being honest, etc. There are many lists of what constitutes good teaching practice. In all of these, elements can be identified which link good pedagogy to the acquisition of non-cognitive skills. The above example of a lesson plan shows how each lesson can include values. The following practice, lesson preparation and classroom management, shows how good teaching practice supports values and character education.

Figure 31. Examples of how good pedagogy can influence character development



Community Engagement

Parents and family are the most important influence, in both formal and informal ways, on the personal and social development of children in their early years.It is the responsibility of the school to reach out to parents to ensure that the school and home are aligned on key values and expectations, and to seek the support of parents and community in their approach to character education, civics and citizenship, and understanding of local cultural and historical context.

One way of engaging with the parent community is to use the school committee as an entry point. Indonesia already requires school-based management to include elected school community members on school committees but in many cases, parental participation in school decision-making and school affairs is weak or non-existent[14].

Key principles for parent engagement

- Effective communication
- Comprehensive training
- Range of activities to suit different needs

Schools need to be creative and find out what works locally to encourage parents to participate in school life. The first step could be to increase the number and range of activities which bring parents onto the school site - for example through arts and crafts programs, school lunch programs, sport, school improvement activities or as volunteers in the school (e.g. listening to students' reading). Communicating regularly and in various forms with parents and community is essential for a genuine and active partnership that will support character building efforts of the school. A recent review of character education[15] identified 3 main principles which underpinned successful engagement of parents in character education curriculum: effective communication with parents; training throughout the school for parents and volunteers to promote the character education program; providing a range of program activities such as seminars, school social activities, parent education workshops. Principals and teachers need to devise creative strategies for increasing the engagement of parents in the school, especially on issues of character development, student welfare, school discipline policies and personal/social development.

4.5 Assessment of Character Education

Teacher observation and rating is the most common method of assessing character development and non-cognitive outcomes. This is quite an acceptable method as long as teachers have opportunities and guidance to develop meaningful indicators and a shared understanding of how ratings are made.

Paper and pencil tests can also be used to measure aspects of character development. An example is the International Education Association (IEA) International Civics and Citizenship Study (ICCS). This was developed to assess how countries have prepared students to undertake their roles as citizens. The study is based on the premise that preparing students for citizenship roles involves helping them develop relevant knowledge and understanding and form positive attitudes toward being a citizen and participating in activities related to civic and citizenship education.[16] (Schulz et al, 2010).

Indonesia was one of the 38 countries participating in ICCS. The results for Indonesia were very interesting. It was found generally that Indonesian students' level of knowledge area was below average, but that their attitudes were average to much higher than average, except for gender rights. Indonesian students had the highest value of all 38 countries in expecting to volunteer time to help people in the community at some stage of their lives.

There are also instruments that schools can use to collect socio-metric data to monitor school climate. For example, surveys such as the *Quality of School Life (QSL)* Survey, have been used in many countries to measure the organisational climate and identify issues to be addressed and ideas for improvement. While the QSL instrument measures student *perception* of the quality of the school, it is reasonable to assume that more positive ratings are associated with a more positive school climate.

A QSL survey was included in the *Quality of Education in Madrasah Study*[17] (2009-1010) which assessed academic achievement of a representative sample of Year 9 students in Indonesia, together with a range of school and student background factors.Findings from the QSL survey included that overall, students had a strongly positive view of their quality of school life with a mean rating 3.17 on a scale of 1 - 4 with 4 being '*strongly agreed*. The area in which they rated their schools most highly was the importance of schooling and relevance of what they were learning for their futures. The area in which they gave the lowest ratings related to whether their thoughts and ideas were valued by others in the school and the respect and status they were given by others in the school. About one third of students felt strongly about this issue, suggesting that this could be an area for improvement in school organization and ethos.

Simple, but well-designed surveys can help schools to see the student perspective and such data is a useful tool for planning school improvement. At the very least, all schools should have effective systems to monitor attendance and decide how they classify and record the incidence of unacceptable or extreme behaviour.The analysis and reporting of this kind of data helps schools to identify areas for improvement and more effectively target their interventions.

5. Indonesia – brief overview of current situation

5.1 Character Education Pilot Program 2010 – 2012

Pilot Program on Character Development in Indonesia2011-2012[18]

The Ministry of Education and Culture conducted and evaluated a Character Development pilot program in 44 schools in 2010-12. The program was based on 18 universal values which were regarded as relevant to the school context (e.g. responsibility; self-discipline) and schools were supported to implement an integrated across-the-curriculum approach, mapping where character development could be addressed in curriculum and school organisation and activities and identifying the nature of support materials and training that could assist teachers.

There was no intention to use the pilot program to develop a national syllabus but the findings of the pilot could be useful for a national approach to integrated approach to character education. The pilot also identified how character development could be included into personal development and local content, using local cultural and development activities such as scouting, camping and creative and performing arts.

Training for the integrated approach to Character Development was conducted in all Provinces in 2011 and 2012 and in about 400 districts. This was mainly awareness and information-giving.The schools in the pilot program received regular visits from a mentor and opportunities to network with other schools in the pilot. The assessment of character development in the pilot program was a very challenging task.A number of school-level indicators and proxies were developed for the 18 values. These covered aspects of school climate, physical appearance of the school and classrooms and degree of interaction in lessons. Strategies were also developed for consistent reporting and analysis of unacceptable behaviour (e.g. incidence of bullying, fighting).Of the schools that had reached their third year of implementation in the evaluation, 75% showed improvement on teacher ratings of the indicators.

Lessons learned from the Pilot program were that -

(i) Implementation of the approach requires a comprehensive awareness program followed by extensive training and support.Many schools that had a high level of awareness and commitment still required a great deal of support and resources. Curriculum officers estimated that about 6 visits per year were needed to optimise the program.

(ii) Character Education takes time to embed in schools. Even certificated teachers are not currently addressing this in their classrooms. Observation of the program underscored the importance of teachers' own values and behaviour. This was identified in the evaluation as the most important factor but there is no established culture nor process in schools for teachers to be told how to behave. "Teachers agree that they must model the behaviour they expect, but this clearly does not happen in many schools - teachers smoke at school, are late, are absent and don't make an effort to prepare lessons or teach in accord with the curriculum".

(iii) The approach to character education must involve parents and community and there should be an integrated approach across GoI – human development is a responsibility of many ministries and agencies.

(iv) Monitoring and Evaluation is an important but extremely challenging task. More expertise is needed for assessment in the non-cognitive domain.

Box 8. Indonesian Character Development Pilot Program

18 Universal Values

religiosity
honesty
tolerance
self-discipline
hard-working
creativity
independence
democratic
curiosity
spirit of nationalism
patriotism
appreciating achievements
friendliness/communications
peace-loving
love of reading
environmental awareness
social awareness
responsibility

Source: Ministry of Education and Culture

5.2 Religious Education in Indonesia

The objectives of religious education for all students are embodied in the Education law No 20 of 2003 which includes "the objective of developing students' potential to become individuals who are faithful to the One Almighty God, having noble characters, and being healthy, knowledgeable, skilful, creative and independent and will grow to be democratic and responsible citizens".

Indonesia has both religious schools, providing education to about 15% of the school-aged population, and general (secular) schools in which 85% of the school aged population are educated. By law, all schools must provide religious education according the faith of the students. Islamic religion is by far the majority religion in Indonesia, with almost 90% of the population identifying as Muslim. The purpose of Islamic religious education is to develop Muslims who are committed to the realisation of Islamic principles. Given that the great majority of Muslim students are in general schools, the quality of religious education is an important issue.

A review of Religious Education in Schools in Indonesia[19] was commissioned by the Ministry of Religious Affairs to look at the relationship of religious education in schools to the development of attitudes of tolerance and inclusion, to investigate the appropriateness of curriculum, materials and pedagogy and to make recommendations about curriculum, resources and teacher training and support to deliver Islamic religious education which promotes religious tolerance and peace within a pluralistic society.

The review found that formal religious teaching "tended to be normative, doctrinal, ideological and traditional" with little opportunity for students to think critically and discuss issues relating to daily life. On the other hand, informal religious teaching, delivered by persons outside the school such as Student Spiritual Mentors (ROHIS) and clerics (ustadz) tended to be more dynamic, but also showed a trend towards more exclusive and extremist views. Students in the study reported that often their teachers in other subjects provided better religious education through discussing subject issues with Islamic messages and themes.

Issues and problems impeding better quality in religious education included –

- Low competence of teachers; use of lecturing and rote learning methods; poor selection methods at entry to teacher training; little or no opportunity for practice teaching and feedback in teacher training; few opportunities for professional development on the job.

- Lack of relevant and engaging curriculum and enrichment materials for teacher training and for use in schools.

Teachers will now get more assistance from the new curriculum for religious education which specifies knowledge, skills and attitudes and learning activities for Islamic religious education and other religions (Budhist, Hindu, Catholic, Protestant and Konghucu). The new curriculum has also allocated additional lesson time for religious education in both primary and junior secondary schools but the increase in lesson time for religion may have little positive impact on students' character development if the quality of teaching religion remains low.

5.3 *Kurikulum 2013*

In brief, the recent reform of the curriculum in Indonesia was focussed on the goal that students at each level of education would develop the competencies and personal attributes that are needed to meet the challenges of the 21st century. In addition, the new curriculum was a response to concerns that were being raised about the curriculum. These concerns included that the existing curriculum put too much emphasis on rote learning of content areas and too little on interactive and contextualised learning and assessment; that there was too little emphasis on character development and the unique culture and identity of Indonesia; that violence was increasing, particularly in the higher grades, that teachers were struggling to design and deliver quality programs of learning through the model of school-based curriculum development in an over-crowded curriculum, with too few teaching hours.

The new curriculum included many changes in content and structure to meet the issues summarised above, including an increase in lesson hours which has been allocated entirely to the non-cognitive domain:

Figure 32. Table of lesson hours allocated to the non-cognitive domain

Level	*Character elements*	*Old Curriculum*	*Kurikulum 2013*
Primary	Total increase 4 lessons per week	26 – 32 lessons	30 -36 lessons
	Religion	**3**	**4**
	Civics	**2**	**5 - 6**
	PE/Health	4	4
	Culture	4	4
	Self-Development	2	-
Junior Secondary	Total increase 6 lessons per week	32	38
	Religion	2	3
	Civics	2	3
	PE/Health	2	3
	Local Content/Craft	2	4
	Culture	2	3

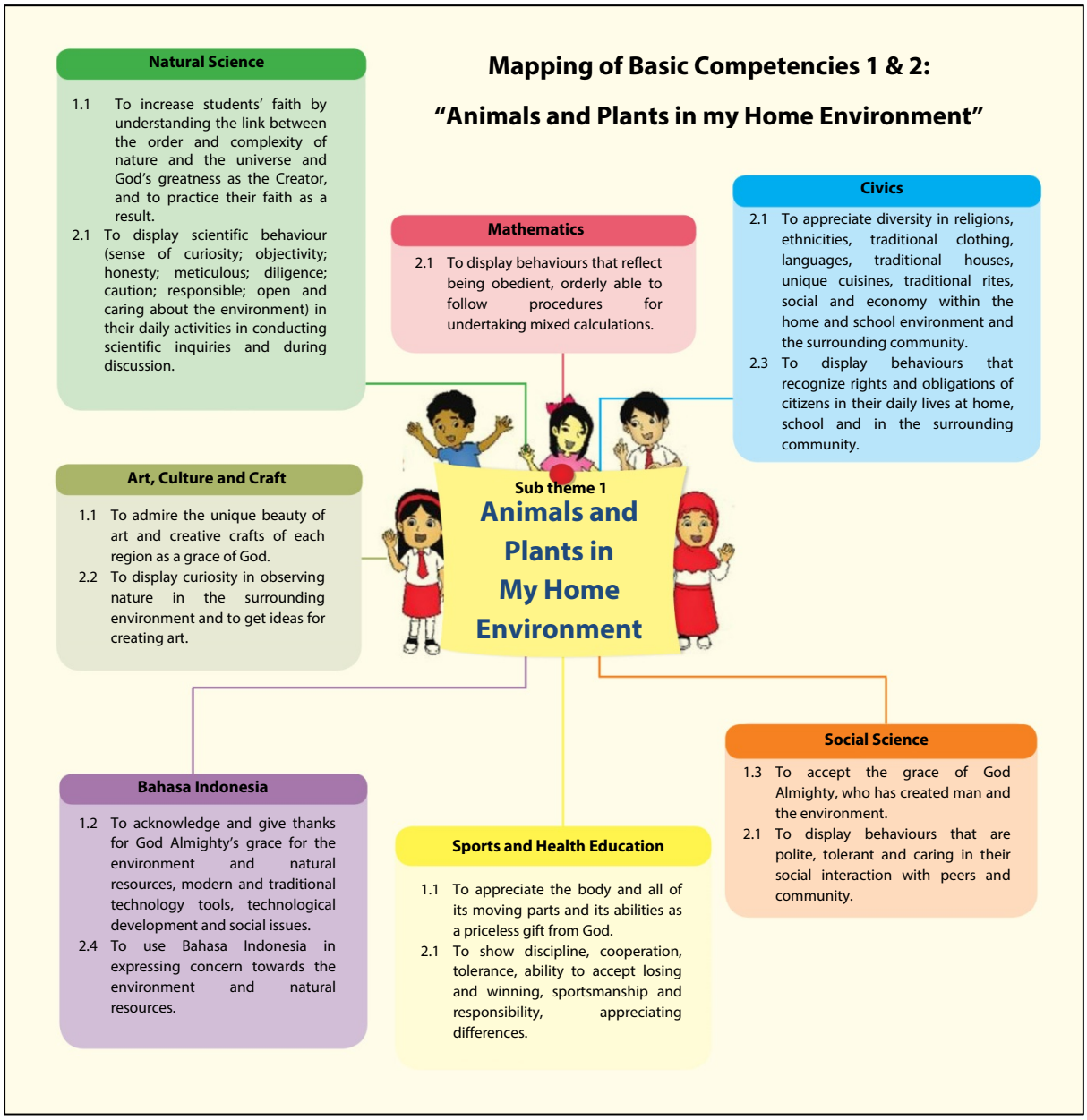
Source: Ministry of Education and Culture

In addition to extra lessons for religion, the new curriculum makes very explicit statements of knowledge, skills and attitude requirements. In the primary curriculum, subjects are integrated in extended units of work on a particular theme.In the junior secondary school, the traditional subjects have remained but the introduction to units includes more explicit statements about the attitudes to be developed.

It is clear from the text books and teacher handbooks that new curriculum has the intention to more intensively develop students' non-cognitive abilities however at the present time teachers are struggling with its implementation and it will require a great deal more support and time before the objectives of the new curriculum can be realised.Logistical problems have marred the implementation process of the new curriculum. In particular the training model does not reach every teacher and the centrally managed textbook development and distribution has resulted in materials being delayed to many schools. Although teachers have been offered textbooks on disc, their limited access to printers and the high cost of photocopying are significant barriers to accessing the material.

Putting aside the implementation problems, it is clear that teachers must now think about the non-cognitive skills to be developed and structure activities in their lessons for students to talk about and develop these. For example in Grade 4, under the theme of *Caring for All Living Beings,* the Teacher Handbook expresses the objectives as: to develop scientific and analytical skills; to develop higher level thinking skills, problem solving and enquiry skills, creativity and a reflective personality. The Teacher's Handbook contains assessment ideas, remedial and enrichment activities, and ideas for engaging parents in the curriculum at home. The difficulty for teachers may be that too many character traits are assigned to each lesson theme and that the assessment (via rating scales that have been provided for each learning area in the thematic module) will become a burden.

Box 9. Character development – Sample integrated lesson planning guide from *Kurikulum 2013*



Source: Ministry of Education and Culture

At this stage of implementation it is too early to assess whether teachers will be able to deliver the curriculum and undertake the assessment as intended in either the cognitive or non-cognitive domains. A systematic, independent review should be undertaken at the end of the first year of implementation to assess progress and whether any adjustments need to be made to the model and the implementation plan.

6. Overview of International Research

A literature review by Gutman and Schoon[20] (2013) on the relationship between non-cognitive skills and positive outcomes for young people has some important findings for character education in Indonesia. These include that there is now a large body of evidence which shows that factors such as self-control and school engagement *are correlated with* academic outcomes, financial stability in adulthood, and reduced crime, but robust evidence of a *causal relationship* is limited. Less is known about how far it is possible to

develop a young person's non-cognitive skills through intervention, or whether such changes lead to improved outcomes, especially in the long-term, e.g. employment.

A key point made in the review is that **there is no single non-cognitive skill that predicts long-term outcomes.** Rather, key skills are inter-related and need to be developed in combination with each other.

Evidence for a *causal* relationship is strongest in relation to skills underpinning academic outcomes:

- Children's perception of their ability, their expectations of future success, and the extent to which they value an activity influence their motivation and persistence leading to improved academic outcomes, especially for low-attaining pupils.
- Within the school, effective teaching, the school environment, and social and emotional learning programs (SEL) can play an important role in developing non-cognitive skills.
- Outside of school, programs such as 'service learning' and outdoor challenging activities have low to medium effects on a variety of cognitive and non-cognitive outcomes.

Another meta-analysis undertaken by Heckman and Kautz[21] (2013) investigated the findings of studies which aimed to develop 8 key non-cognitive skills derived from theory, and then compared which approaches showed the most positive impacts.

- The **highest levels of evidence** for a positive relationship were found for: fostering Intrinsic Motivation, developing Meta-cognition (i.e. critical reflection on the thinking process) and developing Social Skills.
- **Medium level positive effects** were found for programs focussing on Self-Perceptions, Self-Control, Resilience and Coping and Motivation programs based on Achievement Goal theory and Expectancy Value theory.
- The **lowest levels of evidence** for positive effect were found for programs focussing on Creativity, Social skills and Perseverance (both Grit and Engagement).

Box 10. Eight Non-cognitive Skills - Meta Analysis by Heckman & Kautz, 2013

1. Self-perceptions: Self Concept of Ability; Self Efficacy

2. Motivation: Achievement Goal Theory; Intrinsic Motivation; Expectancy Value Theory

3. Perseverance: Engagement; Grit

4. Self-control

5. Meta-cognition

6. Social competencies: Leadership Skills; Social Skills

7. **Resilience & Coping**

8. Creativity

Explanatory Notes on the findings:

(i) Even if the effects were rated as medium or low, there was still a positive association.

(ii) Different theories of motivation can be seen to underpin different program approaches– *Achievement Goal Theory* (in which the focus is on goal setting and how to achieve the goal), *Intrinsic Motivation* (in which the focus is on helping students to internalise the motivation based on values, rather than seek an extrinsic reward) and *Expectancy Value Theory* (in which students are coached to clarify positive but realistic beliefs about their competence and realistic expectations of the value of success).

The meta-analysis also showed that some of the approaches (especially self-efficacy and meta-cognition) had a causal effect on other non-cognitive outcomes, supporting the idea that character skills are linked and should be taught together in a holistic way.Programs which appeared to have the lowest casual effects were those based on community-based mentoring and activities such as community service and outdoor adventures activities. This does not mean that such activities should be abandoned but that they should be combined with some of the other approaches. Programs also need to be appropriate for age and context and be well executed.

The authors concluded that non-cognitive skills have positive and measurable impacts on outcomes for young people but these effects are intertwined and there is no clear single approach which can be demonstrated to work best. Programs which, in combination, develop skills of self-efficacy, motivation and meta-cognition appear to be most influential in developing academic learning and success in children and young people.

7. Character Education for the Mental Revolution

Learning from Indonesia's pilot program on character education, from the efforts of other countries and from research about what programs work best and how, there is a rich body of evidence to guide how the education system in Indonesia can support the *Mental Revolution*.

The key principles developed in this paper for consideration by government are:

1) Non-cognitive skills are highly important for the future well-being, academic success and career achievements of individuals and for national productivity and identity and should be valued in the curriculum.

2) In the Indonesian context, character education in schools should be regarded as a broad term which includes the non-cognitive skills together with special curriculum for values education, religious education, civics and citizenship as well as activities for personal, social, emotional and physical development.

3) Research findings can guide implementation of effective character education. For example –

    - character education skills can be taught using various approaches but some approaches appear to have a stronger and more lasting impact than others e.g. approaches which develop *intrinsic motivation* (ie behaviour driven by internalised values rather than tangible rewards), *meta-cognition* (where students learn to critique their own thinking) and developing *social skills*;

    - character skills are best taught together, in a holistic way, using multiple approaches. Social and global issues can be mainstreamed in existing curriculum, school organisation and management.

4) Good pedagogy is the key to improving *both academic learning and character*. Good pedagogy requires selection of the best candidates for teaching, providing practice-based teacher preparation programs, providing contextualised and continuous professional development and effective in-school supervision and support. In order for religious education to be more effective, the pedagogical skills of religious education teachers must be greatly improved.

5) A positive school climate is associated with better education outcomes, both cognitive and non-cognitive.Principals and other school leaders have a key role in establishing a positive school climate. Teachers set the climate in their classrooms by what they expect, what they do and how they model positive interactions.

6) The education system, schools and individual teachers must also pay attention to 21st Century skills and keep pace with technology and social media in order to stay relevant to the needs and learning styles of young people. Teachers must be able to assist students to manage the many challenges of the technological revolution that surrounds them and prepare them for the 21st century working environment.

7) Parents must be partners in the development of character and schools must find ways to reach out and establish effective partnerships with parents, families and community for character development.

8) Teachers, principals and education officials must first transform themselves in order to establish the organisational culture and school climate which is consistent with the objectives of the *Mental Revolution*.

9) School effectiveness research provides a sound blueprint for establishing a learning environment and culture to support the optimal development of students in both the cognitive and non-cognitive domains.

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Chapter 4. Quality Assurance and Minimum Service Standards for Basic Education

Introduction

The National Education Standards (*SPN*) were developed by the National Education Standards Board between 2007 and 2010 and issued by a series of decrees from the Minister for Education. They cover eight areas: Content (Curriculum), Teaching Process, Graduate Competencies, Educator (Teacher) Standards, Equipment and Infrastructure, Management, Financing, and Education Evaluation. The development of the standards and their application to a range of quality tools and processes has been a significant achievement over the last decade. The national standards are the key reference point for curriculum, examinations, accreditation and quality assurance.

The national standards also provide the framework for assessing and improving teacher performance through the processes of certification, competency testing and performance appraisal. These processes are a very significant aspect of quality assurance and are covered in the chapter on the teaching workforce.

The fast development of the new curriculum in 2013 did not allow time for a comprehensive review of the national standards. A number of issues flowing from the new curriculum, especially about the nature of assessment and the learning process itself, require the standards to be reviewed. In addition, the data from the two Minimum Service Standards (MSS) surveys that have been undertaken point to many areas where the standards need to be revisited, for example, in clarifying expectations regarding teaching hours and hours of duty at school, and reporting requirements. Ideally, the MSS survey data will be used to inform a review of the National Education Standards, as well as the MSS.

This chapter aims to evaluate the extent to which the current quality assurance tools and processes by which the standards are operationalised and monitored are effective in improving the delivery of basic education services. The chapter includes the following five sections –

1. a brief description of the quality assurance tools and processes
2. an overview of the current level of achievement of Minimum Service Standards in basic education
3. aligning the four quality assurance processes
4. issues and challenges in implementing quality assurance for basic education
5. conclusions and recommendations.

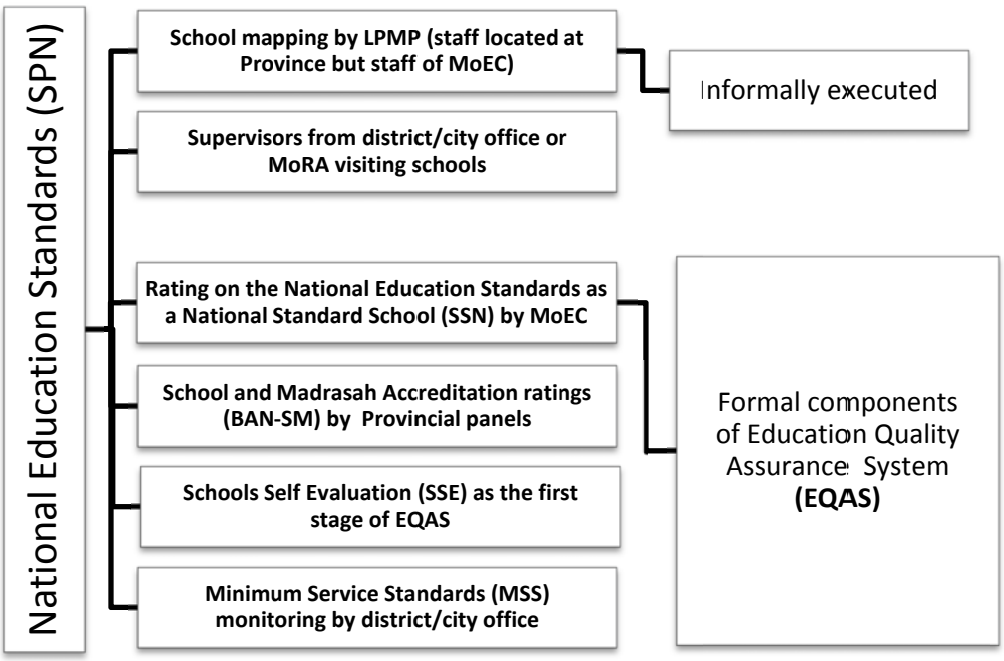
While it is beyond this chapter's scope to investigate the complexities associated with education management information systems (EMIS) for MoEC or MoRA or local government, it is acknowledged that an effective EMIS is critical for monitoring the status and condition of schools. This chapter does not refer to MSS for Senior Secondary School as these have not yet been finalised.

For the purposes of this chapter, the EU definition of quality assurance is considered relevant: *An organisation's guarantee that the product or service it offers meets the accepted quality standards. It is achieved by identifying what "quality" means in context; specifying the methods by which its presence can be ensured; and specifying ways in which it can be measured to ensure conformance.*

1. Quality assurance systems and processes

The Ministry of Education has established a number of policies and processes for the quality assurance (QA) of school education over the past five to eight years. Figure 33 shows the main tools and processes: two informal but important processes at the local level together with the four formal processes being implemented by the Ministry.

Figure 33. Quality assurance systems and processes for basic education



The National Education Standards apply to all education institutions, public and private. However, it is very variable how some of the QA processes are applied to private schools, especially the private *madrasah*. There are many reasons for this, including resource constraints on the implementation of the formal systems and ambiguity at the local level about the extent to which local governments are able to, or should, provide support for quality assurance to all the schools within their jurisdictions.

1.1 Informal monitoring of school quality

The Quality Assurance Institutes at Provincial level (LPMP) are an extension of MoEC, with one LPMP located in each province. Some are quite large with substantial infrastructure and assets. Their establishment and mandate has evolved through a number of regulations issued between 2003 and 2007. Their main responsibilities are to support the quality improvement of education personnel (e.g. through short training courses and cluster networks), conduct research and undertake mapping of education quality. While the mapping of school quality is based on the SSE it appears that LPMP are using their own locally designed templates and data systems which means it would be difficult to get comparable data nationally. Furthermore, since the civil servant grading and remuneration of LPMP positions is linked primarily to engagement in training activities, education mapping has been a lesser priority. Even if it were a high priority, the logistics and resources required for a comprehensive follow-up to school self-evaluation would be impossible for a single LPMP in a populous province such asEast Java province, or even in a less populous province such as Aceh. Undoubtedly, good information may be being collected from mapping, but this is not aggregated or analysed in relation to school accreditation and MSS.

Supervisors have the potential to undertake a larger, more effective role in school quality assurance than they do at present. They are sufficient in number, with an average supervisor-to-school ratio of about 1:10

(although this does not take into account the different classifications, e.g. school, subject or subject cluster). The under-utilisation of supervisors for the QA role reflects a mismatch of the role with their current selection, skills and experience, reflecting a lack of training, development, support and accountability. A regulation is being prepared to address these issues but it must be accompanied by political will at all levels and sustained funding for a significant and continuous professional development program.

With the new regulation and appropriate professional development, it should be possible to have an effective school accountability model being implemented by school supervisors in the next five years. A staged approach would provide teams of supervisors who between them have the appropriate high-level technical and interpersonal skills required to undertake rigorous, independent school inspections, producing reports which are useful both to the schools for guiding improvement and to the district/city offices for accountability and system improvement. This could be the first step towards a highly professional and fully independent inspectorial system in the future.

1.2 National Standard School (SSN) rating

Following the development of the National Education Standards, the MoEC implemented a rating process for schools. National Standard Schools (SSN) were rated as the status to which other schools should aspire. SSN were considered to have better facilities and programs than regular schools. At this time (2007–08), the national standards were still relatively new and the rating program was a significant part of socialising and monitoring the new standards. Table 3 shows the informal hierarchy of schools, according to their programs and resources.

Table 3. Classification of schools

Rating / type of school	*Level of resources and programs*
1. Regular schools	With *modest* resources
2. Model schools	*Aspiring* to become SSN
3. National Standard Schools (SSN)	With *superior* resources
4. National Standard Schools Plus	SSN + some international elements such as teaching in English or offering the International Baccalaureate
5. International Standard Pilot Schools (RSBI)	Now discontinued
6. International Standard Schools	Schools judged to be at international standard in resources and programs.

Source: Ministry of Education and Culture

The process of becoming recognised as an SSN requires a school to be nominated by education officials and then be assessed by officers from the Directorates of Primary Education or Junior Secondary Education. The SSN assessment is based on the eight categories of the National Education Standards and uses a rubric of components, aspects and indicators to determine whether the school is at the required level of quality. Table 4 shows the arrangement of assessment criteria for Junior Secondary Schools. A successful rating requires a mark of at least 68% using the weightings shown in the table. It does not require a minimum score in each of the eight categories, which means it would be possible for a school to score zero on one standard (e.g. Evaluation) and still be granted SSN status.

Table 4. Weighted value of items for scoring as a National Standard School (Junior Secondary)

National Education Standard Category	*No. of Components*	*No. of Aspects*	*No. of Indicators*	*Weighted value of Indicators*
1. Content	5	13	31	13
2. Process	4	12	45	15
3. Competency	1	6	38	13
4. Personnel	6	26	53	15
5. Facilities/equipment	3	26	42	12
6. Administration	5	20	44	11
7. Financing	4	25	25	11
8. Evaluation	3	20	48	10
Total	31	**157**	**326**	**100**

Given the hierarchy of schools in Table 3, rating as SSN is considered to be prestigious. In the past, SSN schools were able to charge fees that reflected their status as a "preferred school" and as a consequence, children from poor families would be unable to attend. From 2013 the assessment of schools nominated for SSN status has become a provincial-level responsibility, including oversight of their compliance with national regulations which do not allow government schools to charge tuition fees. Even so, it seems an anomaly that the SSN accreditation is still in use even though a more comprehensive accreditation system (BAN-SM) has since been developed and would be presumed to have replaced it.

1.3 School/*Madrasah* accreditation (*BAN-SM*)

The school and *madrasah* accreditation process was developed by the National Accreditation Board for Schools and *Madrasah* (*BAN-SM*). The process is based on the eight National Education Standards, and accreditation visits are undertaken by provincial panels funded by MoEC in accord with Government Regulation 19/2005.[1] A schedule and draft budget was prepared for every school to be accredited in a five-year rolling program. The first schools were accredited in 2007. Reports are provided from the provinces to national level, and MoEC monitors and reports on progress towards accreditation. See Table 5.

Table 5. Number of schools accredited 2007-2012

Level of Education	Total
Pre schools	40,812
Primary schools	129,536
Junior Secondary	31,344
Senior secondary, Academic	16,455
Senior secondary, Vocational	19,192
Special Education	929
Total	**238,268**

School accreditation is undoubtedly the QA tool that has the most visibility and traction, with 68.5%[2] of all Primary and Junior Secondary Schools in 2012–3 holding current accreditation at Level C or higher. Different figures for the number of schools accredited are sometimes quoted. The difference comes from counting all schools that have ever been accredited versus schools currently accredited. Accreditation is supposed to lapse after five years, at which time a school should submit for re-accreditation. Nonetheless, it is fair to say that close to 90% of schools had been through the accreditation process by the end of 2013.

The schedule for accreditation is dependent on the size of the budget available each year for assessment panels to do their visits. Progress initially was slower than hoped. It is important to recognise that submitting for accreditation is still a voluntary process and also that schools may prepare for accreditation but not be assessed for some time due to budget constraints. Therefore, the number of schools not accredited includes both schools which are likely to be meeting standards (but waiting) and schools that are not meeting standards. Given the process is voluntary, it could be expected that the last schools to seek accreditation will be those of poorer quality. It is noteworthy that a component of the current Australia-Indonesia Education Partnership is a program to help 1,500 *madrasah* schools prepare for accreditation.

Schools and *madrasah* prepare for accreditation by collecting required data for their profile and ensuring that they at least meet the minimum level in the standards. Provincial panels of independent assessors are trained and visit schools/*madrasah*s to do the assessment using a questionnaire of 157 items for primary schools SD/MI and 169 for secondary schools SMP/MT, arranged in the eight categories of the National Standards. Items are rated from 1 to 5 (1 = highest rating).

A weighting process involving scoring of answers to all questions determines the accreditation level to be awarded, as shown in Table 6.

Table 6. Weighted value of items used in accreditation of primary schools/*madrasah*

National Education Standard Category	*Total items*	*Weighted value of items*
1. Content	18	15
2. Process	11	15
3. Competency	17	13
4. Personnel	19	15
5. Facilities and equipment	25	11
6. Administration	20	10
7. Financing	25	10
8. Evaluation	22	11
Total	**157**	**100**

To be accredited, a school/*madrasah* has to receive a weighted total score of at least 56, with minimum scores specified for each standard. The accreditation levels require different scores: A requires a score between 86 and 100; B 71 to 85; C 56 to 70. If the score is below 56 (level D or E), the school is not accredited. The overall failure rate from accreditation is low at 2.2%. The failure rate for Primary Schools is 2.0%; this is significantly lower than Junior Secondary at 3.7%. In 2013, 81.3% of schools and *madrasah*s which were assessed were rated A or B, an increase from 2011 (76.9%).

Table 7. Number of schools accredited and % at level A – D by BAN-SM in 2013

Accreditation rating by number of schools and percentage										
Type of schools	**A**	**%**	**B**	**%**	**C**	**%**	**D (Fail)**	**%**	**Total**	**Total A-C**
Primary *sekolah*	6,371	21.8	17,537	60.0	4,686	16.0	614	2.1	29,208	28,594
Primary *madrasah*	929	20.7	2,794	62.2	704	15.7	62	1.4	4,489	4,427
All Primary	**7,300**	**21.7**	**20,331**	**60.3**	**5,390**	**16.0**	**676**	**2.0**	**33,97**	**33,021**
Jun. Sec *sekolah*	1,401	31.6	2,070	46.7	819	18.5	140	3.2	4,430	4,290
Jun. Sec *madrasah*	395	21.6	983	53.8	381	20.9	68	3.7	1,827	1,759
All Junior Secondary	**1,796**	**28.7**	**3,053**	**48.8**	**1,200**	**19.2**	**208**	**3.3**	**6,257**	**6,049**
Schools assessed	**9,096**	**22.8**	**23,384**	**58.5**	**6,590**	**16.5**	**884**	**2.2**	**39,954**	**39,070**

MoEC has set annual targets for accreditation, aiming for all schools to be accredited by 2014. This target is unlikely to be reached, partly because of budget constraints and the capacity of provincial panels to accredit about 50,000 schools per year, with both first-time applicants, and re-accreditation applicants. The accreditation process is meaningful to stakeholders and well accepted by schools. This reflects that the process is transparent, there are clear responsibilities for implementation, an annual budget for implementation and an effective incentive – the award of accreditation which is recognised and valued.

1.4 School Self Evaluation (SSE)

School Self Evaluation (SSE) is the most recently implemented component of the Education Quality Assurance System (EQAS). The process was introduced on a small scale in 2011 and extended to most schools in 2013. It aims to support schools in undertaking a self-assessment which would help them with their mandatory annual and mid-term planning and school improvement efforts. SSE is also recommended to schools/*madrasah*s as a preparatory process for school accreditation. The SSE is overseen by the Centre for Quality Assurance in Education in MOEC and is supported in varying degrees by the LPMP at provincial level. The use of SSE is not mandatory and there is no formal follow-up of schools that do or do not engage in the process.

The SSE instruments include questionnaires with 143 questions (covering the eight National Standards) to be completed by the principal, each teacher in the school and a sample of students (between 30 and 60 depending on the size of the school). The results are aggregated into 47 indicators of quality, as shown in Table 8.

Table 8. Categories, indicators, questions and weighting used in SSE for primary schools

National Education Standard Category	*Indicators of quality*	*Total of questions*	*Weighted value of items*
1. Content	4	13	15
2. Process	8	29	15
3. Competency	7	11	15
4. Personnel	7	21	15
5. Facilities and equipment	5	11	10
6. Administration	7	28	10
7. Financing	4	21	10
8. Evaluation	5	9	10
Total	**47**	143	100

Questions are scored on a scale from one to four.

Score 0 – 1:Below Basic Education Minimum Service Standards
Score 1 – 2:Below National Standards
Score 2 – 3:At National Education Standards
Score 3 – 4:Above National Education Standards

The scale 1 – 4 has no direct equivalence with the BAN accreditation. The 2013 MSS survey showed considerable confusion among stakeholders about the interpretation of the SSE scores, e.g. Is a score of 1 equivalent to achieving MSS? Is a score of 2 equivalent to BAN-SM accreditation at level C or level A?

SSE is still at any early stage of implementation. The intention, not yet realised, includes the following aspects.

- Schools will upload their questionnaire responses and transfer the data electronically to MoEC. MoEC does not provide feedback. The school is expected to work from its questionnaires to analyse its situation and areas for improvement, and to use that information to develop its next school plan.
- LPMPs in each province will have access to the national data, and will generate provincial and district/city reports.
- The district/city education offices will receive reports for their areas, and will then provide school-level information to school supervisors. This information will identify areas in which particular schools have received a low score.
- Supervisors will work with individual schools on strategies to improve performance in areas which have a low score, based on data in the school questionnaires. (This end stage could be accelerated if schools provided their reports directly to supervisors and supervisors had ongoing dialogue with schools.)
- The online school data will facilitate both national and local government use of the information for planning and monitoring purposes.

1.5 Minimum Service Standards (MSS)

The Minimum Service Standards (MSS) describe the minimum level of service provision which the government is obliged to provide and which all communities therefore have a right to expect in the delivery of basic education.[3] As such, the MSS describe minimal school facilities and resources for learning, essential processes in teaching and school management, and the planning and monitoring functions that should be undertaken by the district/city office to ensure access to at least a minimum level of quality.

The current version of Basic Education MSS was developed through a consultative process and promulgated through Ministerial Regulation 15/2010. This was later updated with minor modifications by Ministerial Regulation 23/2013. The updated regulation also included Minister-approved Technical Guidelines which contain instructions for the process of determining whether each of the MSS performance indicators has been met. The development and implementation processes are a shared responsibility of the Ministry of Home Affairs (MoHA) and the Ministry of Education and Culture (MoEC). District/city governments are responsible for implementation. The development of MSS also recognised that a lower level than the national standards might be needed as an intermediary step in some aspects of school resourcing. For example, by allowing a slightly higher student-teacher ratio for the moment, and by specifying a minimum percentage of qualified teachers to be appointed in rural/isolated schools rather than for every teacher to be qualified. The MSS were not designed to produce a score or a school rating, they simply indicate whether standards are being met or not.

The MSS for basic education consist of 27 performance indicators: 13 of these are school level indicators of teaching and school management practices; 14 indicators describe the government's responsibilities in providing personnel and an adequate learning environment. Government authorities are still responsible for the 13 school level indicators, e.g. through the provision and support of supervisors to visit schools and monitor the teaching process and school management indicators.

Table 9. Summary of Performance Indicators for Basic Education Minimum Service Standards

Category	*Indicator*
Access and infrastructure	1. Schools/*madrasah*s provided to ensure access within reasonable distance 2. Maximum class sizes, provision of classrooms, furniture and equipment 3. Science laboratory – furnished and equipped (MTs/SMP) 4. Furnished staffroom and principal's office
Provision of teachers	5. Primary student teacher ratio and minimum number of teachers 6. Provision of a teacher for each subject (SMP/MTs) 7. Minimum number of qualified/certified teachers (SD/MI) 8. Minimum proportion of qualified/certified teachers (SMP/MTs) 9. Qualified teachers per core subject (SMP/MTs)
Principal and supervisor qualifications	10. Principals' qualifications/certification (SD/MI) 11. Principals' qualifications/certification (SMP/MTs) 12. All supervisors are qualified/certified
District quality assurance and management	13. Supervisors for school improvement purposes at least monthly for 3 hours 14. The district/city plans and provides support to schools/*madrasah*s teaching programs
Resources for learning	15. A textbook for every student in 5 key subjects (SD/MI) 16. Textbook for every student for every subject(SMP/MTs) 17. Science teaching aids (SD/MI) 18. Minimum number of enrichment books and reference books
Teaching process	19. Permanent teachers work at least 37.5 hours per week on site 20. Minimum hours of instruction for each grade 21. School/*madrasah* level curriculum development and implementation 22. Teachers prepare lesson plans for each subject 23. Teachers use regular assessment for student improvement

Category	Indicator
School quality assurance and management	24. Principals supervise and give feedback to teachers 25. Teachers provide semester reports to principals 26. Principals report exam results to parents and district/city office 27. Effective school based management in operation

The Technical Guidelines contained in Ministerial Regulation 23/2013 provide instructions for the district/city on how they should measure the MSS indicators at both school/*madrasah* and district/city level. This data is required to be collected annually. The data should be used for planning and resource allocation but implementation to date is very weak, reflecting the absence of clear sanctions or incentives for compliance.

The MSS were developed in 2008–09 and regular reviews were intended to be a part of the system, especially as standards were expected to be raised over time. Already a number of the indicators need to be re-calibrated because of changes in curriculum (e.g. deleting the requirement for school-based curriculum development, and the provision of a single integrated textbook for lower primary) or because the studies that have been conducted suggest some standards may be too high or too low or that the technical guidelines for assessing the standard are not appropriate.

2. Snapshot of the extent to which the Government is meeting the MSS

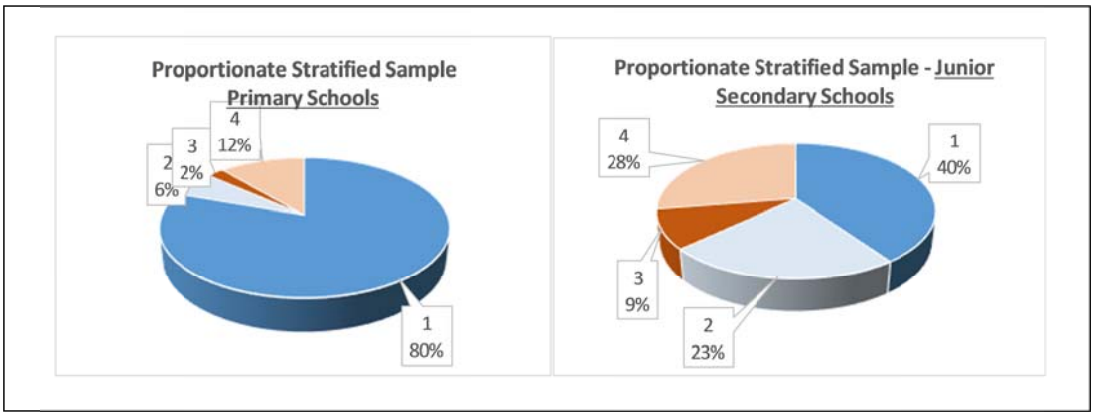
MoEC and development partners have undertaken two national sample surveys (baseline 2010 and follow-up 2013) to identify the level of service provision across a sample of jurisdictions. The most recent survey 2013[4] sampled 5,285 Primary and Junior Secondary Schools in 104 districts/cities. Of these, 23 districts/cities were also part of the 2010 baseline survey and 20% of the schools were common to both surveys. Schools in Indonesia are either *sekolah* (general schools) or *madrasah* (Islamic schools). Within each of these categories, there are both government and private schools. Overall, this means four types of schools at both Primary and Junior Secondary.

The 2013 sample methodology used a two-stage stratified cluster design to allow analysis by six regions of Indonesia and three categories of development status (*advanced, medium advanced and less advanced)*. The number of schools to be selected from each Primary and Junior Secondary School category was determined according to their proportion of the total. Teams of surveyors were trained in clusters and visited schools and district/city offices using questionnaires and observation to assess the standards. Photographic evidence was also collected to verify assessment of infrastructure and resource indicators.

Table 10. Number of schools selected from each category of schools, 2013 survey

Region	Primary (1-6)				Junior Secondary (7-9)				All
	Sekolah (SD)		*Madrasah* (MI)		*Sekolah* (SMP)		*Madrasah* (MTs)		
	Gov't	Private	Gov't	Private	Gov't	Private	Gov't	Private	
Sumatra	949	55	38	90	144	79	36	79	1470
Java	1.265	62	23	261	125	117	31	135	2019
Bali/NTT	354	38	8	51	57	21	7	52	588
Kalimantan	271	15	12	24	47	16	14	18	417
Sulawesi	336	16	8	27	58	13	12	25	495
Maluku/Papua	138	33	5	17	35	21	8	10	267
All	**3.313**	**249**	**94**	**469**	**466**	**267**	**108**	**319**	**5.285**

Figure 34. Proportional representation of types of schools in the 2013 MSS Survey



1	Primary Sekolah Gov't (SD)	1	Junior Secondary Sekolah Gov't (SMP)
2	Primary Sekolah Private (SD)	2	Junior Secondary Sekolah Private (SMP)
3	Primary Madrasah Gov't (MI)	3	Junior Secondary Madrasah Gov't (MTS)
4	Primary Madrasah Private (MI)	4	Junior Secondary Madrasah Private (MTS)

2.1 Summary of findings from the 2013 survey at national level

- Overall, the education system is getting **very close tohaving an adequate supply of schools, classrooms and furniture for students and teachers.** All sample districts reported that every community of 1,000 or more inhabitants had access to a Primary School within three kilometres and a Junior Secondary School within six kilometres.However, more than half the *sekolah* and public *madrasah* Primary Schools have some classes with more than 32 students, and around 70% of the private *madrasah* have some classes of more than 32 students.About one third of the Junior Secondary Schools have classes with more than 36 students. See Annex Figures A1 and B1.

- Districts/cities all stated that they have **a plan for supporting schools and *madrasah* in quality teaching** and that supervisors had a role in this. The MSS requires supervisors to visit schools at least once a month for a sustained visit, focused on improving teaching and learning**. Supervisors' visits are made to 71% of government schools (SD) and 43% of private *madrasah***. However, only one in five of these visits is of the required (3 hour) duration.

- Overall, there appears to be **a sufficient number of teachers** in the system but the private ***madrasah* are lagging behind in having a minimum percentage (considered to be a critical mass) of certified teachers and principals**. In *special areas* (remote) where lower standards are set, only about half the schools meet a minimum criterion of having 20% of teachers that are both certified and qualified. The private *sekolah* (SD) in these areas have only about 25% of schools that can meet this criterion. See Annex Figure A1.

- In Junior Secondary, **the provision of qualified and certified teachers highlights very large differences between the four systems.** Over 80% of government schools (both *sekolah* and *madrasah*) have a minimum of 70% of teachers with the S1 degree or equivalent, compared with 60% of the private *madrasah*. When the certification requirement is added, the private schools lag further behind where about one third of schools have 35% of their teachers qualified and certified, compared with two thirds or more in the government systems. This difference may reflect access to the certification process which is controlled by the district/city administration and has budget implications. See Annex Figures B2.

- Both systems **are not providing the minimum levels of education resources for learning – textbooks, reference books, library books and resources for science and natural sciences**. More

than 70% of all categories of Primary Schools do not provide sufficient textbooks and enrichment books. Around 40% lack basic resources for teaching science and natural science at the primary level. In Junior Secondary, the lack of sufficient textbooks is similar to that in Primary, with the *madrasah* system lagging even more. The low level of compliance with textbook and library books is surprising since the costs are not high and the sources for funds include school operating grants (BOS) as well as national and local grants. See Annex Figures A3 and B4.

- **Only about one in three government Junior Secondary Schools were provided with a laboratory, compared with about 76% in private *sekolah*. In the *madrasah* system about 67% of the government *madrasah* and 21% of the private *madrasah* had a laboratory**. See Annex Figure B1. None of these schoolshad the full kit of science equipment mandated by the National Education Standards. While MoEC provides the initial kits, there appears to be no ongoing replacement of resources. (Books get lost and damaged. Test tubes break. Interesting and pocket-able items "go missing"). **On many of the resourcing indicators, the private *madrasah* were significantly lagging**.

Box 11. Science equipment

The requirements for schools to maintain the full kit of science equipment or a full set of textbooks per head are clearly well above current expectations and practices of both school and government level for the regular supply and maintenance of school resources. It also suggests that the science kit should be reviewed in terms of the science curriculum and what is expected of teachers and students. Key questions would be: How do teachers currently teach science? Would teachers use the equipment if they had it? Is a laboratory essential for Years 7 -9 science?

- Regarding basic teaching practices, only **half the schools surveyed could state that all their teachers had a daily lesson plan.** Similarly, only about **half the schools could state that all teachers were using regular assessment** to provide feedback to students to assist them in their learning. The task of ensuring all teachers in a school comply with these very minimum teaching procedures is the responsibility of principals and supervisors. **Over 80% of principals showed evidence of visiting classrooms and providing feedback to teachers** at least twice per semester. However, this task must be challenging in schools where principals and supervisors are not fully qualified or certified, as is the case in around 35% of private schools (both *sekolah* and *madrasah*). See Annex Figures A4 and B5.

- In terms of school management and efficiency, about **80% of all schools operate for the mandated 34 weeks** per year. Less than **10% of all teachers work on site for the 37.5 hours mandated** in the National Standards and approximately **60% of teachers meet the 24 teaching hours per week required for certification**. See Annex Figures A4 and B5.

- **School-based management is not fully established in all schools** with only about 60% to 70% of schools able to show evidence of a functioning committee and an annual report. See Annex Figures A4 and B5.

2.2 Summary of indicators on which systems are lagging

For the purpose of making comparisons, an arbitrary 80% threshold has been used to identify lagging performance – i.e. **the system does not have 80% of schools meeting the MSS Indicator:**

Table 11. MSS Indicators which are lagging in all schools and additional indicators which are lagging in each type of school

Source: Author's Analysis

System	*Primary*	*Junior Secondary*
All systems are lagging below 80% on these indicators	• Schools have some classes with over 32 students • Textbooks, teaching resources, enrichment and reference books • Teachers on duty 37.5 hours • Teachers meeting the 24 hours rule • Teachers use lesson plans • Teachers use assessment for learning • School has an annual work plan • School has a functioning school committee	• Schools have some class with over 36 students • Science lab, furniture and equipment • In remote areas, 20% of teachers qualified and certified • Specialist teachers for Arts and Culture, Physical Education, ICT • Principals provide semester and end of year report on student achievement to district/ city • School has an annual work plan • School has a functioning school committee
Differences between the four types of schools in the indicators on which they are lagging		
Government sekolah	**No additional indicators lagging**	In addition to indicators lagging for all systems **-** • At least 35% certified • In remote areas, 40% qualified
Private sekolah	In addition to indicators lagging for all systems - • At least 2 teachers certified • Principal qualified and certified	In addition to indicators lagging for all systems - • At least 70% of teachers qualified • At least 35% certified • School operating 34 weeks pa
Government madrasah	In addition to indicators lagging for all systems - • Principals report student achievement to district/city office twice yearly	In addition to indicators lagging for all systems - • Specialist teachers for English, Religion, Arts, Physical Education, ICT
Private madrasah	In addition to indicators lagging for all systems - • Furnished staffroom for teachers • At least 2 teachers certified • Principals qualified and certified • Principals report student achievement to district/city office twice yearly.	In addition to indicators lagging for all systems - • Furnished staffroom • Furnished principal's office • At least 70% of teachers qualified • At least 35% certified • Specialist teachers for Maths, Natural Sciences, Social Sciences, English, Civics • School operating 34 weeks per year

Source: Author's Analysis

2.3 Regional differences

The MSS Survey did not show any consistent patterns across the six regions of Indonesia (Sumatra, Java, Bali and Nusa Tenggara, Kalimantan, Sulawesi and Maluku and Papua). Expected differences for Eastern Indonesia were masked by the coupling of Bali with Nusa Tenggara.

Some differences were observed which could be correlated with the level of urbanisation and development status within regions. For example, more urbanised areas had a higher percentage of schools with at least one class over 32 students (Primary) or 36 students (Junior Secondary).However, in general it should be expected that the differences within regions would be greater than the differences between them.

2.4 MSS results for schools which are accredited

In not one school were all the MSS indicators met. This appears surprising at face value but is a sign that governments and school management still need to focus attention on more equitable provision of infrastructure such as science laboratories for Junior SecondarySchools, distribution of qualified and certified teachers, provision of learning materials (especially books and science equipment) and quality processes to support teaching and learning and school-based management.

Although no school was found in the national sample that met all the MSS indicators, schools that were accredited at the higher levels (A and B level by BAN-SM) met the MSS indicators at a higher level than schools accredited at C (lowest) or D (fail). This means that in general, the two instruments (BAN-SM and MSS) are positively correlated and could be aligned by the adjustment of the scoring systems and eligibility for accreditation. The only noteworthy exception to this positive relationship was the percentage of schools which had one or more classes with more than 32 students (Primary) and 36 students (Junior Secondary). A higher percentage of schools accredited at level A had at least one class larger than specified (32 or 36) than schools which had a lower accreditation rating. The likely explanation for this is that schools which are perceived to be of higher quality are in higher demand and, therefore, likely to accept more students, creating larger class sizes. In contrast, the majority of the poorer-quality private *madrasah* are in rural areas and have small enrolments so the likelihood of exceeding the class size are much lower.

2.5 Cost of bridging the gap in MSS

Some MSS indicators require minimal or no additional expenditure by government and could be achieved by improved management and more effective use of existing resources. These include increasing the amount of effective instruction time (e.g. the required number of weeks per year; hours of teaching) and key process indicators (e.g teachers developing lesson plans and conducting regular assessments, and principals implementing effective supervision and school management practices).

Box 12. Cost of Bridging the Gap

The total cost estimated for schools to meet MSS, not including teacher costs, was:

- **Primary:**

Rp 36,774,238,938,149

- **Junior Secondary:**

Rp 14,987,257,856,378

Table C1 in the Appendix shows the projected cost of meeting MSS indicators, not including costs associated with teachers and allowances. Some MSS indicators require only moderate capital investment, (textbooks, learning resources and school equipment) whereas infrastructure improvements (additional classrooms, major and minor repairs) are a high cost, especially for the Primary system where there are many poor small schools in the *madrasah* private system. Science laboratories, science room furniture and science equipment for Junior Secondary are also high cost items.

The 2013 MSS survey identified four major programs that channel funds to districts/cities specifically for improving the quality of, and access to, basic education. These are in addition to the annual General Funds Allocation (DAU) provided to cover salaries and other purposes to be decided by the district/city. The current four special programs are:

1. Special Allocation Fund (*Dana Alokasi Khusus,DAK*) to be used for major and minor capital works, including purchase of school textbooks
2. Quality Improvement Program *(Program Bantuan Peningkatan Mutu, PBPU*) to be used for improving school-based management and upgrading teachers
3. School Operational Fund (*Bantuan Operasional Sekolah*, *BOS*) provided direct to schools to cover operational expenses
4. Program to Increase Access to Junior Secondary *(Program Peningkatan Akses, PPAS*) to fund major school improvement or building of new schools at Junior Secondary level.

While the guidelines for *DAK* and *PPAS* make reference to meeting MSS, there is wide variation in the extent to which the expenditure is strategic in reducing the MSS gap in particular schools. For example, districts may select teachers for certification from schools that already meet or surpass the requirement for the minimum number of staff to be certified. This lack of targeting is due in large part to the lack of data and/or the lack of analytical capacity and tools.

Poor targeting is a symptom of system inefficiency. Of special concern is the inefficiency in the distribution of teachers which, if addressed, would hasten the achievement of the most lagging MSS – the provision of minimal numbers of qualified and certified teachers. For example, transferring teachers from schools that have an excess of teachers with S1 degrees or D-4 certification to schools which have a shortage would produce savings that could be directed towards a range of quality improvements.

Case study[5]: Purworejo regency (city) in Central Java is lagging in meeting MSS 7 and 8, relating to teacher qualifications. In this city, 263 schools/*madrasah* do not meet the indicators but another 483 schools/*madrasah* have an excess of qualified teachers. There are at least three alternatives for the administration to consider in closing this gap.

Table 12. Alternative costing scenarios for closing the gap in Purworejo, Central Java

Activity	Cost category	Number	Unit cost (Rp)	Total cost (Rp)
Alternative I: Recruitment of new teachers				
Recruit new teachers	Administrative	263	0	0
Salary of new teachers	Operational	263	25mil/year	6.6 billion recurrent
Alternative II: Upgrade teachers qualifications to S1 in the 263 schools				
Upgrading qualification	Capital	263 x 2 year	3.5mil/year	1.85billion recurrent
Alternative III: Redeploy existing S1 teachers within the regency so that all schools meet MSS				
Re-Assignment of teachers.	Administrative	263	1 mil	263 million one-off

Source: Author's own calculation

Another way in which districts/cities could improve efficiency is by clustering or merging small schools. Providing a fully equipped laboratory for a small SMP/MTs with only 40 - 50 students is not an efficient use of resources at this stage. Effective solutions could include merging schools within systems (e.g. public *sekolah* and public *madrasah*) or having some shared classes across systems (e.g. public *madrasah* and private *madrasah*). Either of these approaches would be sensitive and require extensive stakeholder consultation and support, administrative vision and political will. It would be more difficult to implement this approach in rural areas where the schoolsare sparsely distributed.

From the case study above, it can be seen that planning and budgeting for meeting MSS should take into account efficiencies that can be achieved within the existing resources. However, this cannot be accurately estimated at the national level. Needs and opportunities must be identified at the local level and systematically reported upwards.

The 2013 MSS survey projected that meeting the full cost of MSS would be in excess of Rp 54 trillion, not including teacher costs which should be approached through greater efficiency in distribution. This figure is probably affordable when spread over five years. See Appendix C for calculations and cost assumptions.

3. Aligning the four quality assurance processes

The MSS differs from the other three quality assurance processes in that its **focus is primarily the government** whose responsibility it is to deliver quality education in accord with national standards. Performance on MSS indicators is therefore a measure of the **extent to which the government is meeting**

its obligations in planning, resourcing and managing education, including the responsibility to ensure that schools comply with key policies, such as those for curriculum and assessment. As many of the resources that support education (such as staffing and buildings) are not under the control of individual schools, MSS provides signals about the equity and efficiency of the system in providing the conditions for learning. For example, comparative analyses will show up differences between urban and rural schools and between public and private *madrasah* in the percentage of qualified and certified staff.

On the other hand, the two school accreditation ratings – SSN and BAN-SM – provide **a picture for each schoolof the level of resources** (human and other) and the quality processes that are in place at a moment in time. The accreditation process allows schools to be graded within existing resource constraints. This grading is its chief function.

The **School Self Evaluation is more a process than a product**. It is an opportunity for the school to reflect on achievements and challenges and establish realistic improvement targets.

The ideal scenario is that there is consistency and transparency about each of the systems and their processes are complementary. There should be **some pressure on national and local governments** to commit resources and effort to ensuring the MSS, while **simultaneously, providing encouragement and incentive for schools** through their own efforts, and through successful advocacy and partnerships, to continue to improve their service delivery, and achieving accreditation at higher levels at each cycle. School Self Evaluation is an ideal preparation for accreditation, as well as an ongoing school improvement process, but schools need to have the minimal inputs from the government to be motivated to engage in school improvement. Supervisors of schools can be advocates, and provide support, for the SSE processes in their schools.

3.1 Comparing the two accreditation systems

Although the two accreditation systems (SSN and BAN-SM) both stem from the National Education Standards, each of the instruments has been developed separately by different agencies under the same Minister. They each use different processes in making their assessments. The SSN and BAN-SM processes both provide formal accreditation but there is no clarity about how they relate to each other and no articulation between them of the levels of certification.

There is little consistency between the two systems in scoring or in the weightings given to a particular standard. For example, in respect to scoring, the BAN-SM requires a school/*madrasah* to achieve a specified minimum score in each standard, but the SSN requires only an overall pass mark of 68%, with no minimum scores. Theoretically, it would be possible for a school to be accredited as a National Standard School with a low or zero score on the Teaching Process Standard. It is difficult to understand why this should be possible.

The key issues which appear to be unresolved are: how the SSN ratings relate to accreditation level A on BAN-SM; how the two processes can be linked to ensure reliability and transparency; and whether *madrasah* and private schools can be included.

Box 13. Comparing the two accreditation systems

The focus of accreditation is *grading whereas the focus of* School Self Evaluation is on the *process and developing understanding for improvement.*
Example - Accreditation (BAN-SM) has one question about student achievement results in exam subjects while SSE has five questions. Accreditation (BAN-SM) does not ask for any information about assessment of students in non-exam subjects whereas SSE has eight questions about the nature of assessment in subjects which are not a part of national exams.

The BAN-SM process is well known and embraced by both schools and *madrasah* as a recognition of their efforts to meet the standards. It is a more inclusive approach, in that all schools must present themselves for accreditation and schools who are ranked C or lower are offered guidance to prepare for and achieve a higher grade at their next accreditation.

The ideal scenario would be for the SSN to be fully integrated with the BAN-SM so that there is one instrument for school accreditation.

3.2 Comparing accreditation and School Self Evaluation

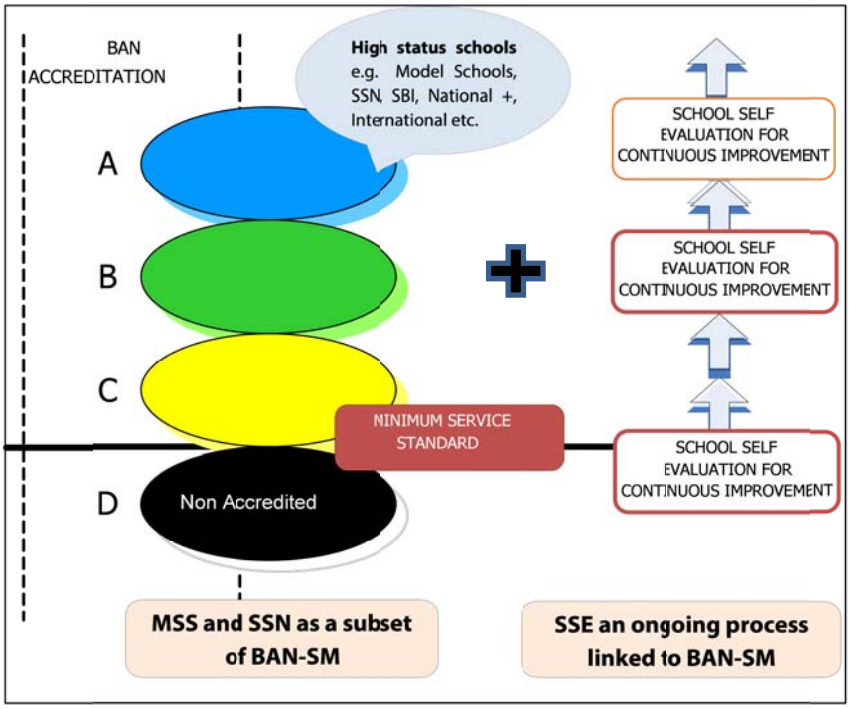
Accreditation is conceptually different from School Self Evaluation. The accreditation process selects particular aspects of the National Standards and gathers information from principals to determine whether certain resources or processes are in place. In this way, accreditation instruments seek to report on *status*. On the other hand, School Self Evaluation seeks more frequently to report on *process*. It asks many questions beginning with "how". The SSE instrument also values input from the broader school community by gathering information from teachers and students, as well as the principal. The focus of SSE is to support continuous improvement in quality processes by the school through reflection, evaluation and understanding the steps needed for improvement. The key outcome of SSE is not a score or rating but enhanced *understanding* and the capacity to improve.

3.3 Bringing the four processes together

The design of MSS assumed that it would articulate to the lowest level of the BAN-SM accreditation ladder. The diagram in Figure 35 is adapted from the initial communications materials for promotingMSS which positioned MSS at the pass/fail level of BAN-SM. The two additions to the diagram are the box suggesting where SSN and other high status schools would be located, and the insertion of the SSE process as a continuous process on the school improvement ladder.

Merging the two accreditation processes and linking MSS to accreditation would provide a much simpler system. It would have more chance of universal implementation than the current approach, which is overlapping but not readily comparable.

Figure 35. Relationship between MSS, National Standard Schools, BAN-SM and SSE



Aligning the two accreditation processes and MSS will require indicators and their scoring systems to be reviewed and articulated in a single scale to ensure reliability and transparency. Preparatory work has already been undertaken towards this objective as an outcome of the 2013 MSS survey.[6]

At a policy level, the alignment of systems in the manner shown above will require schools to meet the MSS before applying for accreditation. Such an approach would put pressure on the government to ensure that all schools have been provided with the basic level of resourcing to meet the MSS or an agreed subset of MSS. This is in essence, the real purpose of MSS.

At the top end of the scale, it could be argued that only schools that have already been accredited at level A should be considered for SSN or other rankings however at the present time with the current MSS, this would not be feasible. The purpose of these high status schools and the issues of equity of access, should be clarified, bearing in mind strong evidence that education systems which are highly differentiated on socio-economic indicators tend to reinforce inequities[7].

Alongside an integrated accreditation system, in which MSS has a role at the first stage, will be the SSE process as an ongoing part of quality school management, supported by regular visits by school supervisors.

4. Issues and challenges in implementing school quality assurance processes

4.1 Confusion and burden of too many tools

As described earlier, there is a considerable overlap among the accreditation tools but little alignment in their scoring and interpretation. This makes it difficult to compare or equate the ratings and, as a consequence, there is confusion amongst school and district/city staff and other stakeholders.

It is also burdensome and distracting for school and district/city staff to deal with several requirements purportedly serving the same purpose but using different data collection systems and reporting. Schools already provide very detailed annual census data to their district/city office and the office must provide detailed information to the Ministry on enrolments, teachers, school resources and conditions. MSS and accreditation require much of the same information but in different formats.

Given the degree of confusion, the additional burden and the lack of sanctions or incentives for complying with MSS, it is not surprising that few districts/cities have seriously engaged in assessment and planning for MSS. Even in those districts that have been part of the five-year pilot study, it appears that that the large-scale programs used to build knowledge of MSS since 2010 have had little success[8]. Knowledge of MSS across the basic education system is very low and this provides little basis for effective implementation.

4.2 Quality of data for planning and monitoring

Implementing MSS is hampered by the poor quality of data from schools and *madrasah*, the absence of automated and reliable systems for data management and the lack of capacity of district governments to analyse data and generate information for planning. This is a country-wide problem which impacts on all service delivery.

Questionnaires returned are often inaccurate, incomplete or not returned at all which means government officials further up-stream frequently have to rely on estimates. Schools/*madrasah* are burdened by being required to submit many different reports to different parts of government and even to different directorates within the education ministry. Much of the same data is included in these various reports but usually in slightly different formats and with slightly different specifications. Understandably,

schools/*madrasah* see little value in preparing reports which have neither positive nor negative consequences.

4.3 Incentives and sanctions

While there is a legal basis for each of the QA tools and processes, the implementation is mixed and depends on the presence/absence of incentives and sanctions at school and district/city level. Accreditation has more incentives and outcomes for schools than the other components of EQAS. Non-compliance with MSS has very little impact.

Table 13. Current perceived incentives, sanctions and benefits at school level

Process	Perceived incentives	Perceived sanctions	Outcomes for the school
LPMP monitoring	Minimal or nil	nil	nil
Supervisor visits	Minimal or nil	nil	nil
SSN	High status	Unfavourable market comparisons	Reputation as a preferred school
BAN-SM	Accreditation	Public perception Not able to conduct national exams	Grading Public confidence
School Self Evaluation	Intrinsic motivation to improve	nil	Preparation for accreditation
MSS	Minimal or nil	nil	nil

Source: Author's Analysis

As with many of the education reforms, the legal instruments for MSS have developed over time to address specific implementation issues. The regulations for the current MSS have progressed from 2005 (PP 65/2005) through to the latest one in 2013 (PP23/2013) which updates the 2010 regulation (PP 15/2010). The 2013 regulation more clearly defines the role of the head of district/city government to submit bi-annual reports on MSS achievement to the Ministry of Home Affairs (MoHA) and Ministry of Education and Culture (MoEC). This could be interpreted that the national government is tightening the requirements already in the law for districts/cities to report on MSS and establishing the means by which sanctions may be applied.

Furthermore, the Ministry responsible for civil service and bureaucratic reform (*Kementerian Pendayagunaan Aparatur Negara Dan Reformasi Birokrasi* or *MenPan*) through Ministerial Regulation 36/2012 is able to apply sanctions to districts/cities that do not fulfil the service standards for which they are responsible (including MSS) and each district/city office and school/*madrasah* will be required to display a signed Service Announcement. See Box 14.

Another important development in 2013 has been the issue of Circulation Letter 903/5361/SJ which allows districts/cities to allocate funds to private *madrasah*. This is significant because, while the private *madrasah* lag on most MSS indicators and their compliance is counted in district/city reports, local government has not had a mechanism to include *madrasah* in resource allocations.

Box 14. Official Seal Service Announcement

With this, we state that we accept responsibility to carry out services in accordance with established service standards and if we default in carrying out this promise, we are ready to receive sanctions in accordance with prevailing laws and regulations.

Signed: Responsible official for Service delivery.

4.4 Local government capacity for MSS planning and implementation

The results of the 2013 MSS survey on capacity development indicate that district and school/*madrasah* personnel have limited knowledge of the minimum standards. There is little evidence of local government planning to specifically meet MSS other than in four of the five pilot districts.

The recommendations made about the types of capacity development needed to support MSS at district/city level included comprehensive awareness-raising of the MSS requirements and the concept of accountability, training and support for staff in different roles (data collection, data entry and data use, planning and monitoring), together with the introduction of appropriate systems and software for data management. Many of these civil service capabilities are generic across service areas, not just education, and a number of government and development partner programs have been working at the local government level to enhance these capabilities.

As part of a significant capacity development program funded by the multi-donor Basic Education Capacity Trust Fund (BEC-TF), the World Bank[9] conducted two studies of district governance capacity in 2009 and 2012. The studies aimed to assess the state of local education governance in a sample of 50 Indonesian districts/cities and its impact on education performance. The study used a framework of four dimensions of governance efficiency and a fifth dimension of service delivery:

- transparency and accountability
- management control systems
- management information systems
- efficient resource use
- education service provision standards.

In summary, the study found that: better education governance was associated with better education performance; there were modest improvements in education governance between 2009 and 2012 but weaknesses remained; improvements were seen in the quality of education management information systems and processes to strengthen transparency and accountability. Despite the improvements that were noted between 2009 and 2012, only about one in three of the sample local governments had written procedures and protocols for data collection and verification in 2012. This is a significant barrier to implementation of MSS.

4.5 The enabling environment for change

Learning from the 2013 MSS survey and the World Bank study, it is reasonable to conclude that the MSS is affordable and achievable if *each* of the following conditions can be met:

- a strong political commitment at local level to MSS and reducing inefficiencies
- a reliable education management information system (EMIS)
- an effective partnership approach between national and local government for funding MSS
- systematic improvement of capacity of district government officials.

Each of these conditions will be difficult to establish in all district/cities of Indonesia at once, however, there is little point in strengthening one element (e.g. capacity development) without the others also being addressed.

A concluding paragraph from the World Bank study of governance in 50 districts is shown in Box 15.

Box 15. Conclusion from World Bank Study - Governance and local education performance: a survey of the quality of local education governance in 50 Indonesian districts 2013

While strengthening local governance is crucial for sustained progress in the education sector it is also important to recognise that central government transfers and education sector programs present a number of challenges to district level education governance.

The intergovernmental transfer system introduces incentives for higher salary spending which may distort the decision making process and result in mismatches between school needs and district allocations. While local governments provide the bulk of funding for basic education, the central government still contributes significantly. Central government programs largely bypass district level planning, budgeting and monitoring processes and have the potential to seriously undermine district efforts to improve education sector management and governance.

Efforts to clarify roles and responsibilities and an increased effort to incorporate central government programs into local planning processes are clearly needed.

4.6 The capacity of principals and supervisors to lead QA and support quality teaching

Indonesia has over 300,000 principals and about 28,500 school supervisors (23,000 in MoEC and 5,500 in MoRA). Although their responsibilities vary in relation to subject specialisation and religious supervision, principals and supervisors have a critical role in quality teaching processes through their management and supervision of teachers. Guiding and supporting improved teaching practice requires them to be confident and competent instructional leaders. However, on the 2012 competence tests of pedagogical and subject knowledge, many principals had lower scores than teachers. Furthermore, the average score of supervisors was lower than the average score of teachers.This has serious implications for the extent to which principals and supervisors can effectively assist teachers to provide quality teaching.

Further evidence of this situation comes from a recent study of principals' and supervisors' competence and training needs undertaken in 2103[10]. The methodology included self-ratings and ratings by others.

Box 16. Findings of the ACDP study of principals' and supervisors' competencies

The areas in which principals were rated as being least competent were the supervision of staff and the use of ICT for management and teaching and learning processes.

Supervisors were rated as being least competent in research and development and the academic supervision dimension of their role. In relation to academic supervision, it was found they lacked competence in the provision of advice to teachers about effective teaching and learning, use of laboratories to support learning, developing indicators of effectiveness and analysing and using the results of their supervision visits.

Overall, it was found that both principals and supervisors lacked the skills to provide effective supervision and guidance to teachers. The key findings are summarized in Box 16.

MoEC is addressing the competence of principals through a comprehensive continuous professional development program (CPD) scheduled to commence in 2014. The competence of supervisors is being addressed at the policy level by a new draft regulation which aims to ensure that their selection, qualifications, role and conditions will support them to effectively fulfil a role in quality assurance and quality leadership. Implementing this regulation to achieve the desired changes will require a professional development program at least equivalent to that being developed for principals, and it will need to be ongoing given the age profile and likely high turnover in that segment of the workforce.

4.7 The role of school-based management

Research into school effectiveness over the past two decades has shown parental involvement in school decision-making as one of the key features of effective schools.[11] Together with many developed and developing countries, Indonesia introduced school-based management (SBM) about a decade ago. Since then, MoEC and development partners have implemented many programs to help schools and communities establish school committees and assist them to effectively fulfil their role.

In the 2010 MSS baseline survey[12] around 80% of schools sampled had some elements of school-based management, but only about half (60% *sekolah* and 50% *madrasah*) met the three criteria for the minimum standard of effectiveness: to have an annual plan, to provide an annual report and to show evidence of a functioning school committee (e.g. by having minutes of meetings, records of attendance). These are very minimal indicators of a functioning school committee. In the 2013 MSS survey, the situation had barely changed. Similarly, the World Bank Study (2012) of school-based management in Indonesia[13] found that while committees were established in the majority of schools, "there were significant weaknesses in how SBM was operating". (See the chapter on Education Financing).

Fully empowered and effective school committees could provide the "short route" to accountability. As opposed to the "long route" of providing reports upwards to the Ministry, in the short route, parents and community members are more likely to be informed and engaged in school decision-making because principals and teachers will be directly accountable to the most important stakeholders – parents. On the other hand, QA processes which are implemented by others outside of the school may not reach all schools, and findings are not always effectively reported to policy-makers and decision-makers, or communicated to parents. While considerable efforts have already been made to support school-based management in the past, a new push to further support and empower school committees could be a very cost-effective way of increasing accountability, providing both the pressure and support for school improvement.

4.8 Adequate resourcing for QA

The degree of implementation of each of the key QA processes is constrained by resource considerations. Over the past five years, the number of schools able to undertake the BAN-SM accreditation process has been limited by the level of funding provided for training and the operational costs of the assessment panels.

Similarly, achievement of MSS has been constrained both by the limited funding for capacity development for implementation and by the limited funding (national and local government) to address the lagging indicators. In the case of MSS, development partners have been working with national and district governments to support capacity development and also to build more schools.

School Self Evaluation, being school-based, is not capital resource-intensive but it does require recurrent training and support. Supervisors could be a key resource for this process but they themselves must be trained and able to travel. The importance of QA should ensure that the processes are well resourced and sustainable.

5. Conclusions and recommendations

Indonesia has **a more than sufficient QA Framework** in its Education Quality Assurance System (EQAS). There are enough tools and processes but, with the exception of BAN-SM accreditation, EQAS is not being effectively implemented and the parts are not sufficiently integrated. It is essential that the four tools be aligned in order for the system and stakeholders to gain an accurate picture of the quality of service delivery in their schools.

Parents and the community are under-utilised and under-prepared for the potentially powerful role they could take in all aspects of quality assurance at the local level. The cost of truly empowering school committees would be small in relation to the benefit in school quality and, ultimately, in student learning outcomes. More engaged and informed school committees can play an important role in School Self Evaluation, as well as in school-based management, linking longer term planning to school improvement in all aspects, not just resource allocation.

There are **many issues and challenges** which impact on the effective implementation of a robust quality assurance system, not the least being that the **National Standards** which underpin accreditation, MSS and SSE need **urgent review**. Following or concurrently, the tools and processes for QA will also need to be reviewed and brought into line with changes in the workforce, curriculum and assessment. The scoring and weighting systems of each tool/process need to be aligned and more transparent.

While needing to be aligned with the other components of EQAS, **MSS has a different focus**. It is essentially a tool for monitoring the extent to which the government is meeting minimum standards equitably for all students. The purpose of MSS is therefore not to rate schools, but to rate the government. The grey area, yet to be resolved is the extent to which private providers (e.g. foundations and Yayasans) which operate the private schools and *madrasah* are fully or partially responsible for meeting MSS and the role of the different levels of government with the private institutions. In the past 50 years, the government has continuously refined the roles and responsibilities of levels of government in relation to basic education. It has made considerable progress in relation to the public/private issues in higher education but there are many unresolved issues about the public/private roles of basic education which may become more pressing in the push for a universal 12 years of education.

Principals, teachers and supervisors have basic responsibilities for quality teaching and quality school management. These responsibilities areincreasingly being included in mandated performance appraisal processes and in continuing professional development for principals, which means that the compliance with teaching and management process indicators of MSS will improve. However, capacity is still low and it must be developed and sustained for these improvements to be realised.

The **enabling environment** for robust QA and commitment to MSS includes an effective EMIS, collaboration between different levels of government, a strong regulatory structure with incentives and sanctions, and political will at all levels. Developing the capacity of government officials for their roles in QA, especially MSS, without these enabling conditions would be wasteful.

The key achievements over the past five yearsprovide a good foundation for the future. In summary, these achievements are the development and introduction of a significant quality assurance system based on National Education Standards. Specific outcomes include:

- accreditation of over 90% of basic education schools/*madrasah*s
- development and operationalisation of Basic Education Minimum Service Standards (BE-MSS), School Self Evaluation and Essential School Data (DAPODIK)
- embedding MSS in capacity development programs of the government and development partners
- a program of continuous professional development (CPD) for principals which will contribute to their skills to manage their schools and the teaching/learning process
- draft regulations for the reform of the role and conditions of school supervisors, facilitating a greater role for them in school quality assurance
- implementation of two national surveys of achievement of MSS, costing studies, capacity review, and preliminary work on the alignment of EQAS elements.

The recommended key policy directions for strengthening quality assurance are as follows:

1. Streamline and fully align the content, administration and reporting of all quality assurance tools. At a minimum, this should include merging the SSN accreditation with BAN-SM accreditation and aligning

key indicators of the Minimum Service Standards and the School Self Evaluation with accreditation. The processes have different purposes and need not be matched in every way but there should be a core set of indicators which are articulated.

2. Review both the National Standards and the Minimum Service Standards, taking into account the MSS survey findings. The technical guidelines for MSS should also be reviewed to ensure MSS is affordable and achievable but also drives improvement.

3. Implement a concerted campaign to promote and establish MSS and convey to local governments that it is their obligation to monitor, plan for and meet their obligations to deliver education according to the MSS.

4. Improve databases at all levels of the system, reduce duplication of data gathering and increase the effective use of data in planning.

5. Support and empower parents and the community to be more actively engaged in quality assurance and to seek stronger accountability from schools and local government for quality education.

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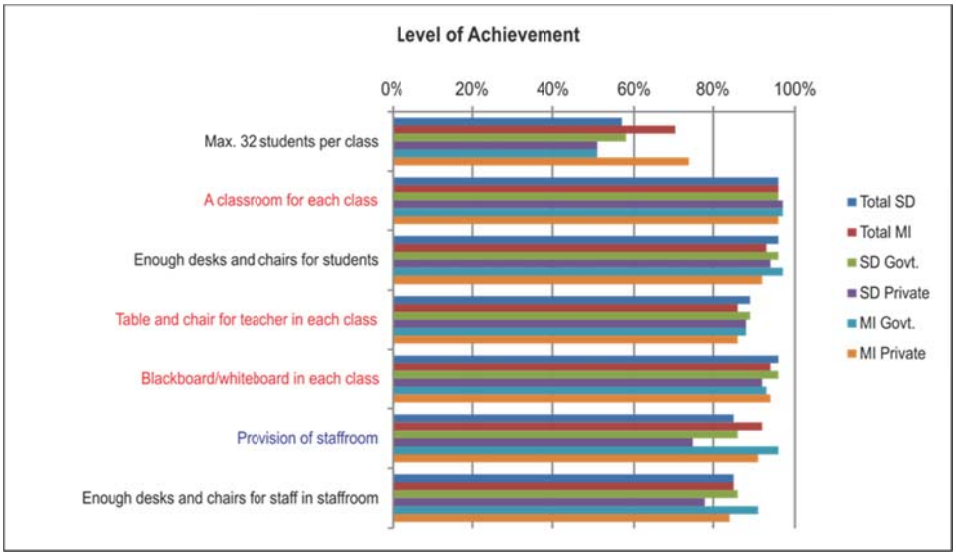
Appendix A. Compliance with MSS Indicators for Delivery of Primary Education

Note on colour used for text on the vertical axis indicates:
Black = significant
Red = non-significant
Green = no difference between primary and junior secondary
Blue = no difference between public and private

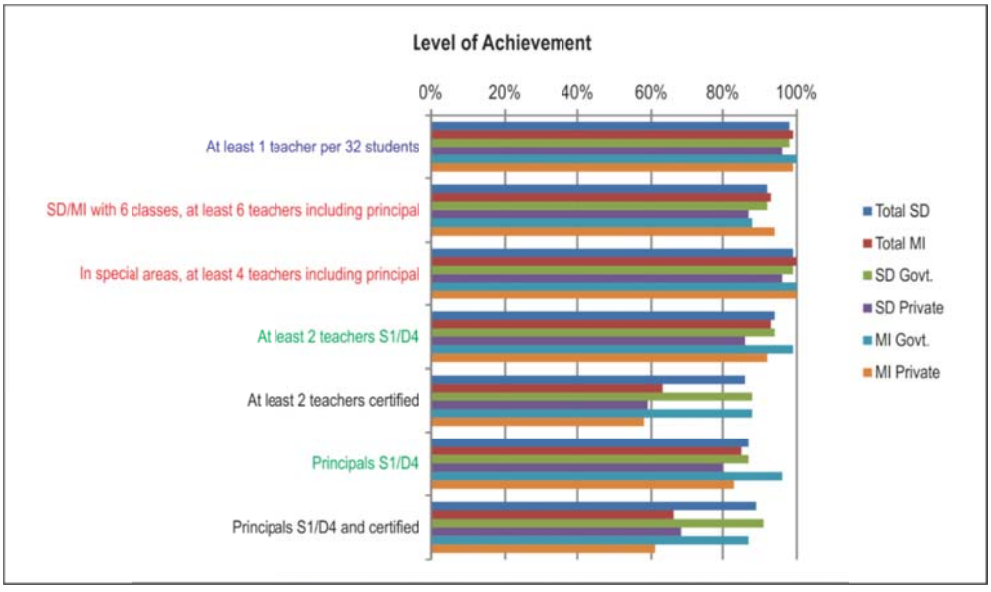
Performance Indicators 2 – 4: Infrastructure

Figure A1: Achievement of MSS in government and private sekolah (SD)and madrasah (MI) for infrastructure in primary education



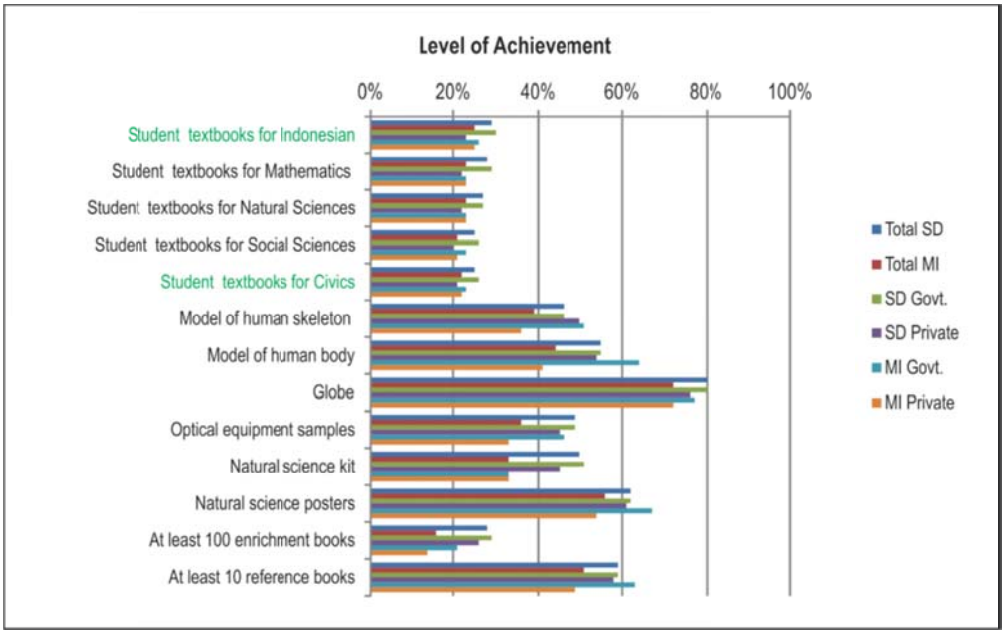
Performance Indicators 5 – 11: Teachers

Figure A2: Achievement of MSS in government and private sekolah and madrasah for teachers in primary schools



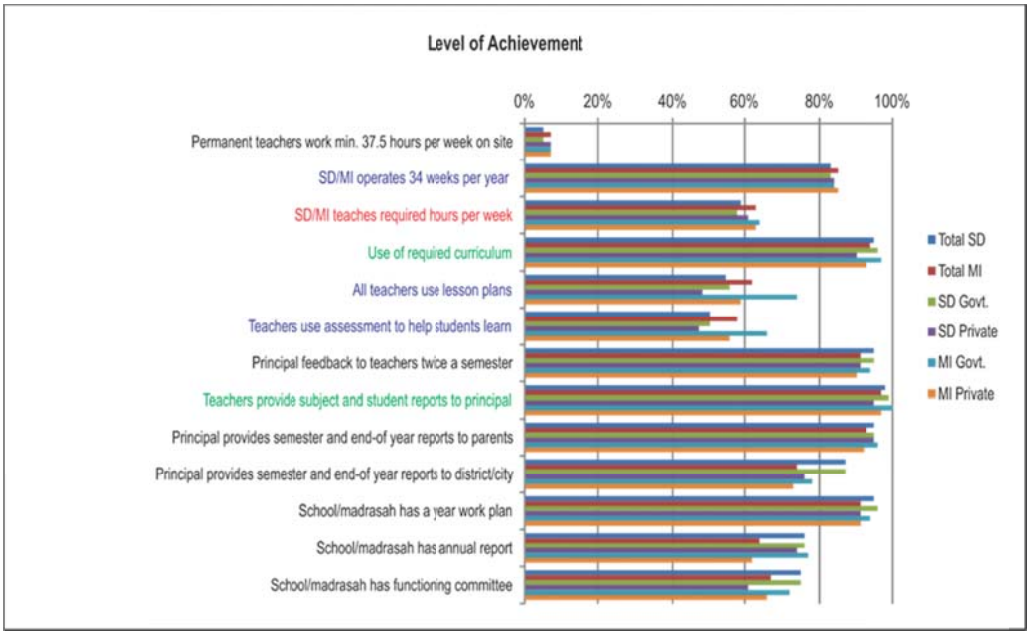
Performance Indicators 15 – 18: Learning resources

Figure A3:Achievement of MSS in government and private sekolah and madrasah for learning resources in primary schools



Performance Indicators 19 – 27: Teaching process and school/*madrasah* management

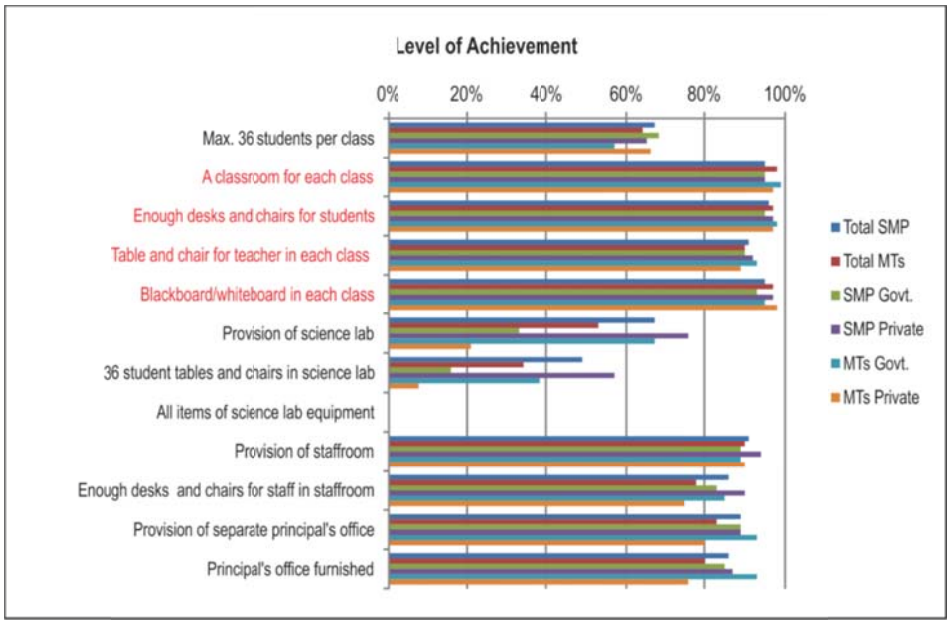
Figure A4:Achievement of MSS performance indicators in sekolah and madrasah for teaching process and school/madrasah management in primary schools



Appendix B. Compliance with MSS Indicators for Delivery of Junior Secondary Education

Performance Indicators 2 – 4: Infrastructure

Figure B1:Achievement of MSS in government and private sekolah and madrasah (SMP/MT) for infrastructure in junior secondary schools



Performance Indicators 5 – 11: Staffing

Figure B2: Achievement in government and private sekolah and madrasah (SMP/MTs) of MSS related to provision of teachers in junior secondary (Part 1)

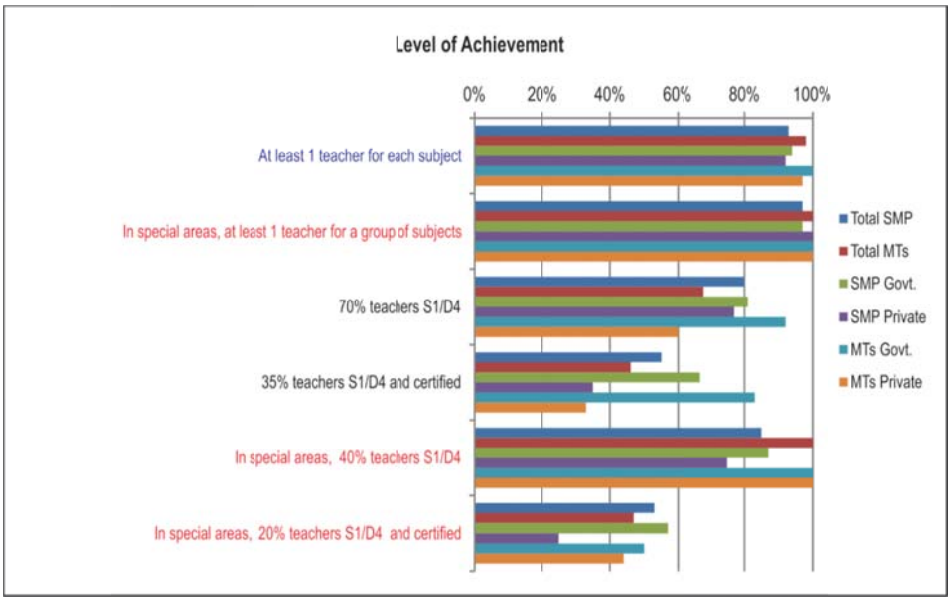
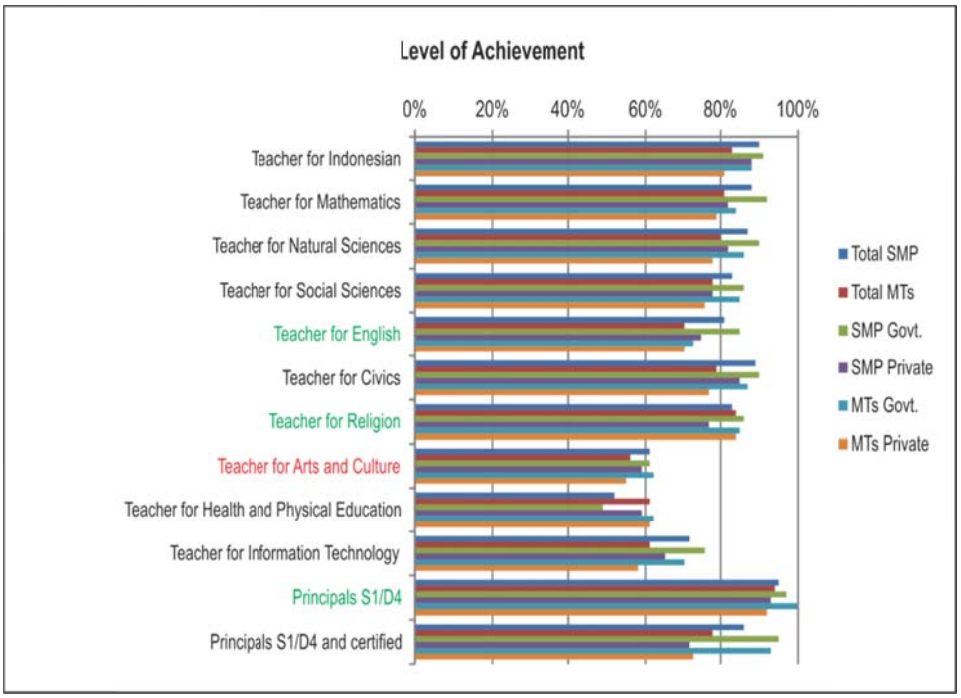
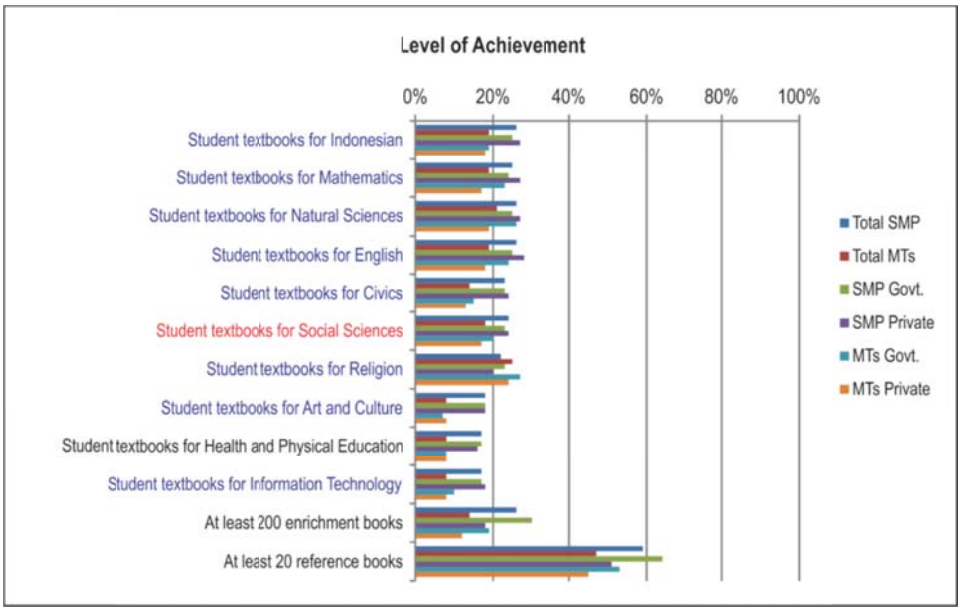


Figure B3: Achievement in government and private sekolah and madrasah (SMP/MTs) of MSS related to provision of teachers for junior secondary (Part 2)



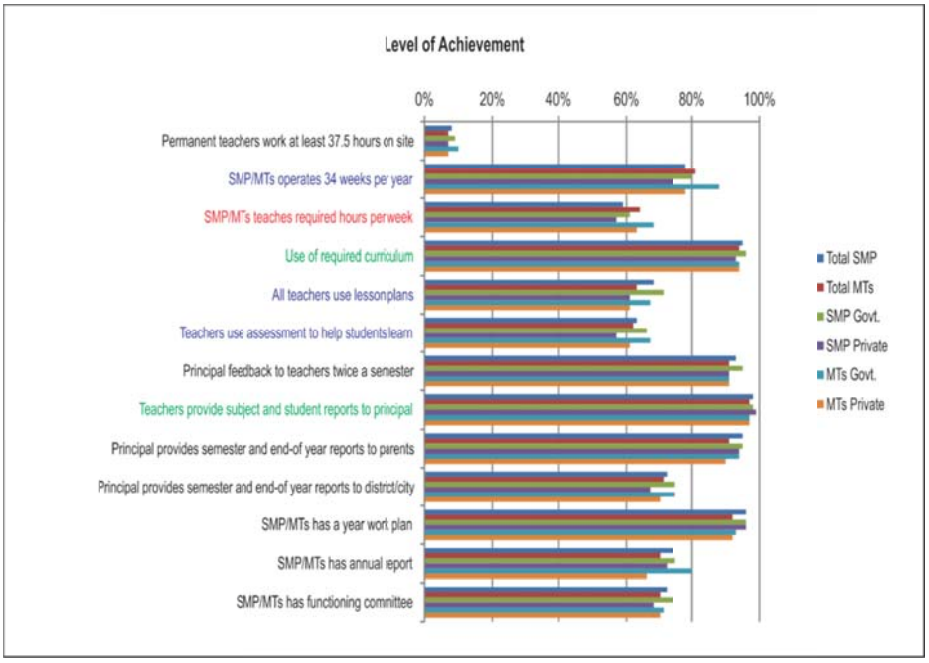
Performance Indicators 15 – 18: Teaching resources

Figure B4: Achievement in government and private sekolah and madrasah (SMP/MTs) of MSS performance indicators related to teaching resources



Performance Indicators 19 – 27: Teaching process and school/*madrasah* management

Figure B5: Level of achievement in government and private sekolah and madrasah (SMP/MTs) of MSS performance indicators related to the teaching process and school/madrasah management



Appendix C. Cost of Bridging the Gap to Fully Meet MSS for Basic Education

Calculations of the cost of bridging the gap between the present situation and the full achievement of BE-MSS are projected using data from the 2013 BE-MSS survey extrapolated to national level.

Table C1. Cost of bridging the gap between the present situation and full achievement of MSS

PRIMARY		JUNIOR SECONDARY	
ADDITIONAL CLASSROOMS			
Govt SD	7,870,740,000,000	Govt SMP	697,305,600,000
Priv SD	114,980,400,000	Priv SMP	495,306,000,000
Govt MI	108,928,800,000	Govt MTs	9,132,960,000
Priv MI	953,664,000,000	Priv MTs	51,314,160,000
MAJOR REPAIR OF CLASSROOMS			
Govt SD	9,223,195,490,000	Govt SMP	1,826,250,630,000
Priv SD	658,457,600,000	Priv SMP	629,746,200,000
Govt MI	901,808,520,000	Govt MTs	79,238,480,000
Priv MI	1,379,236,560,000	Priv MTs	693,998,860,000
MINOR REPAIR OF CLASSROOMS			
Govt SD	9,641,656,500,000	Govt SMP	2,196,512,640,000
Priv SD	801,108,000,000	Priv SMP	2,009,527,200,000
Govt MI	136,967,880,000	Govt MTs	145,955,040,000
Priv MI	1,577,121,840,000	Priv MTs	850,456,740,000
ADDITIONAL STUDENT DESKS AND CHAIRS			
Govt SD	7,988,801,100	Govt SMP	246,780,810
Priv SD	1,024,794,000	Priv SMP	118,519,650
Govt MI	932,802,600	Govt MTs	8,142,120
Priv MI	2,276,872,800	Priv MTs	129,417,330
ADDITIONAL TEACHER FURNITURE IN CLASS			
Govt SD	7,346,024,000	Govt SMP	643,827,345
Priv SD	1,011,500,000	Priv SMP	337,633,590
Govt MI	52,951,500	Govt MTs	33,171,600
Priv MI	1,043,070,000	Priv MTs	479,812,550
ADDITIONAL BLACKBOARDS			
Govt SD	1,311,790,000	Govt SMP	293,721,825
Priv SD	204,901,000	Priv SMP	87,563,025
Govt MI	362,094,300	Govt MTs	13,534,300
Priv MI	284,609,100	Priv MTs	78,291,825
ADDITIONAL TEACHERS' ROOMS			

PRIMARY		JUNIOR SECONDARY	
Govt SD	2,162,879,352,000	Govt SMP	244,274,868,000
Priv SD	344,025,600,000	Priv SMP	89,438,112,000
Govt MI	8,068,800,000	Govt MTs	19,506,624,000
Priv MI	214,574,400,000	Priv MTs	145,792,584,000
ADDITIONAL CHAIRS AND DESKS IN TEACHERS' ROOMS			
Govt SD	6,427,771,000	Govt SMP	1,080,460,500
Priv SD	890,120,000	Priv SMP	412,755,000
Govt MI	52,951,500	Govt MTs	75,390,000
Priv MI	1,112,608,000	Priv MTs	1,100,487,500
NOT APPLICABLE TO PRIMARY		**PROVISION OF SCIENCE LABORATORIES**	
		Govt SMP	952,771,678,110
		Priv SMP	1,219,574,628,090
		Govt MTs	103,060,240,920
		Priv MTs	2,145,884,595,750
NOT APPLICABLE TO PRIMARY		**ADDITIONAL LAB FURNITURE**	
		Govt SMP	7,808,370,000
		Priv SMP	7,783,380,000
		Govt MTs	890,320,000
		Priv MTs	11,570,840,000
ADDITIONAL SCIENCE TEACHING AIDS		**ADDITIONAL LAB EQUIPMENT**	
Govt SD	488,091,872,632	Govt SMP	108,954,000,000
Priv SD	46,071,397,400	Priv SMP	16,934,748
Govt MI	8,326,204,806	Govt MTs	8,616,000,000
Priv MI	97,259,283,964	Priv MTs	75,462,000,000
ADDITIONAL ENRICHMENT BOOKS			
Govt SD	1,543,686,530	Govt SMP	11,022,513,000
Priv SD	1,543,686,530	Priv SMP	8,644,269,000
Govt MI	23,814,167	Govt MTs	1,031,048,000
Priv MI	300,477,173	Priv MTs	9,973,561,000
ADDITIONAL REFERENCE BOOKS			
Govt SD	1,185,319,428	Govt SMP	921,569,250
Priv SD	117,454,545	Priv SMP	866,785,500
Govt MI	15,901,351	Govt MTs	101,238,000
Priv MI	22,436,722	Priv MTs	817,505,000
NOT APPLICABLE TO PRIMARY		**ADDITIONAL PRINCIPALS' ROOMS**	
		Govt SMP	31,930,785,600
		Priv SMP	21,038,712,000
		Govt MTs	1,734,688,000
		Priv MTs	40,125,660,800
NOT APPLICABLE TO PRIMARY		**ADD. FURNITURE IN PRINCIPALS' ROOMS**	
		Govt SMP	3,133,517,040

PRIMARY		JUNIOR SECONDARY	
		Priv SMP	*21,038,712,000*
		Govt MTs	*115,638,208*
		Priv MTs	*3,472,459,392*
SUB-TOTAL Primary *36,774,238,938,149*		***SUB- TOTAL Junior Sec*** *14,987,257,856,378*	
GRAND TOTAL: Rp 51,761,496,794,527			
GRAND TOTAL + 2013 inflation adjustment of 5.5%: Rp 54,608,379,118,226			

Notes on cost calculations

1. Unit costs are those established in 2012 by ACDP 006 Free Basic Education Strategy Development published in Financial Projections for Implementation of Free Basic Education to 2020, adjusted for inflation to reflect costs in 2013.

2. Additional classrooms are calculated on the assumption that each primary class with over 32 students, and each junior secondary class with over 36 students, in schools/*madrasah*s which do not have additional spare classrooms, would need to be divided into two classes. This is a purely theoretical approach based on the BE-MSS performance indicator, and is not recommended as a realistic resolution of the issue, which may be better addressed by changing the relevant indicator to a more realistic maximum number of students in a class.

3. The general oversupply of teachers in Indonesia's basic education system means that the shortage of teachers in particular locations is primarily an issue of teacher distribution. It is not possible to calculate the number of teachers who would still need to be added to the system, particularly in very remote locations if more efficient teacher distribution practices were in place.

4. It has not been possible to calculate the budget required to meet performance indicator 15 which deals with the provision of student textbooks. In many schools/*madrasah*s, the surveyors were not able to calculate the number of additional textbooks needed for each subject in each class – school/*madrasah* records do not provide inventories of books with the required detail. The funds for the required purchases of textbooks can be sourced from the existing BOS budgets. The issue is the prioritisation by schools/*madrasah*s of textbook purchases over other categories of operational non-personnel expenditure, such as paying allowances for teachers' participation in routine committee work or extra-curricular activities.

Chapter 5. Quality of Student Learning as Measured by the National Exams

The national exams have an important role in evaluating the performance of the education sector in Indonesia as they provide the only Indonesian measures of student learning achievement at the end of two stages of learning, Grade 9 and Grade 12. The development and management of the exams each year is a huge undertaking. External exams are held in the core subjects of Indonesian, English, Maths and Science for Grade 9 (Junior Secondary). For Grade 12 (Senior Secondary) the exams cover both core and specialist subjects. 3,652,327 Grade 9 students and 2,697,568 Grade 12 students took the exams in 2013.

This chapter provides a brief assessment context for the national exams and then examines achievement for 2013 in each subject, comparing performance in different subjects, variations across regions and the relationship of pure exam scores with the school marks awarded by teachers. Challenges and issues impacting on the exams are examined, with proposed directions to address these.

1. The nature and importance of assessment

Assessment and feedback are an integral part of child development from birth. Parents are naturally the first teachers of their children. Many parents and other adults or older siblings continue that role, in varying degrees through to adulthood, providing opportunities for learning and giving feedback. Similarly in formal education, assessment and feedback should be a natural part of the teaching and learning process. For students to learn, teachers need to be highly observant, constantly gathering information and feeding it back to students so that learning takes place – skills are acquired, knowledge accumulated, values and attitudes developed, and curiosity and creativity stimulated. This is often called formative assessment as its purpose is to assist learning.

Good teachers use formative assessment information both unconsciously and consciously to adapt their approach to students and the subject matter, especially in the early grades. This is largely an intuitive and informal process but because there are multiple learners, and because the community and education system need to be confident that students are learning as expected, assessment becomes more formalised and externally driven as students move up the education ladder. Assessment is also used for a range of other purposes in addition to giving feedback to students as they are learning.

Across education systems, it is generally recognised that an effective education system would include the following types of assessment.

(i) **Classroom assessment**, integrated with the teaching process, provides real-time information to students about their learning and shows teachers what is working or not working in their teaching. Classroom assessment includes a variety of activities (e.g. observations, questioning, student reflections, assignments, paper-and-pencil tests) to evaluate student learning and to help teachers evaluate and adapt their teaching. This is the most important type of assessment for improving learning. It should answer critical questions such as – Which students have not understood the concept? Which students cannot demonstrate the skill being taught? Why not?

(ii) **Examinations** provide a basis for selecting and certifying students as they move from one level of the education system to the next (or into the workforce). Examinations usually cover the main subjects of a curriculum and ideally involve both written components and multiple-choice questions. Exams that are based entirely on multiple choice questions are cost-effective, but they also have limitations.

(iii) **Large-scale, system-level surveys** provide valuable feedback on the overall performance of the education system at particular grades or age levels. These assessments typically cover a few subjects on a regular basis (such as every two to five years).They are sample-based, and can use both multiple-choice and short-answer formats. Indonesia has made some steps towards this pathway and has the technical capacity to expand the Indonesian National Assessment Program (INAP) to become a national survey of student achievement. Indonesia also participates in international tests which provide very detailed information on performance at a country-level of analysis, including disaggregation by gender and a range of equity and school-level factors, as well as providing international comparisons and trend analyses.

1.1 Policy and legislative framework for assessment in Indonesia

The **national education standards** contain the government's policy on assessment of student learning. This is found in two places: firstly, in the Education Management Standards (Decree 19/2007) which identifies the role of the teacher, the school and the government in assessment and sets out the principles which should guide education evaluation; secondly, in the Education Scoring Standards (Decree 20/2007) which set out more detailed advice about the conduct of assessment such as daily tests, mid-semester and end-semester exams, end-of-year exams for promotion and graduation, and national exams. In Indonesia, as elsewhere, the exam system evolves and develops in response to the context. For example, a recent regulation (32/2013) was issued to abolish the Grade 6 National Exam.

The **Minimum Service Standards (MSS) recognise the importance of assessment** by including it in three of the 13 standards that are assessed at school level. Specifically –

- each teacher develops and adopts an assessment program to help improve the learning capacity of his/her students
- each teacher submits a subject evaluation report and a student assessment report to the principal at the end of each semester in the form of a report on student achievements
- the school or *madrasah* principal presents reports on semester examination results (UAS) and Promotion Examination (UKK) and final examination (school/national examination) to students' parents and sends a final summary to the Regency/City Education Office (*Dinas*) or Religious Affairs Ministry Office at the end of each semester**.**

Together, the National Standards and the Minimum Service Standards provide the framework for school and system level assessment.

2. The national exams

The national exams are currently the only mechanism for the Government to report to the public on student learning achievement. The exams have been subject to many changes over the past decade, especially in respect of the role of school marks, the setting of the pass-mark, conditions under which students may re-take tests, and improvements in test development and administration. As in many countries, the national exams attract intensive media attention and controversy on an annual basis, perhaps more so in Indonesia because of the scale of operations and the evolving nature of decentralisation.

2.1 The exams

The test development process employed by the Ministry of Education and Culture (MoEC) broadly follows international standards in test development using both Classical Test Theory and Item Response Theory (ITR). The process has been constantly improved, e.g. development of more robust items, greater alignment with curriculum and development of strategies to reduce cheating. The content of exams is determined each year by a framework (Blueprint) which includes the topics in the curriculum and the competencies which are identified for the end of each stage (Grade 9 and Grade 12).Item writers, including teachers and

academics from many parts of Indonesia, are trained to write questions which they believe will meet criteria for content and difficulty and are fair and equitable. Recently, item writers have been trained in developing items to test higher order thinking skills.

Within the constraints of time and budget available, the Assessment Centre undertakes trialling and the appropriate psychometric analyses to determine the final exams. This has become more costly and difficult since the tests have recently been expanded to include 22 parallel forms as a means of reducing cheating. However the burden of so many parallel forms has impacts on quality and reduces the extent to which tests can be trialled with a fully representative sample.

Over 35,000 items have to be generated each year. The huge number of items now required presents a risk of low quality items being included and also exposes the tests to higher risk of leakage in the development process which involves many item writers at many locations. Items are not secured for future use as test booklets are retained by schools and this limits the opportunities for trend analysis through common item equating through time.

The exams have up to 50 questions with multiple choice response formats which can be machine marked. This is the most cost-effective type of exam but these response formats are limited in the extent to which they can adequately measure what students can do, especially in relation to writing and higher-order thinking skills. Many countries include either short constructed responses or a written component with their exams to address these issues but including qualitative responses greatly increases the cost of marking. The Assessment Centre is now trialling more complex item formats with stimulus material which can be used to assess competence at various levels. The Centre is also trialling computer based tests as a strategy to reduce cheating.

Indonesia includes school marks as part of the national exams, with a weighting of 60% pure exam marks and 40% school marks. In theory, the school assessment could be used to capture more qualitative elements of assessment than are measured by the tests however this would require a change in mindset about school level exams and considerable cost in training and supervising teachers to mark scripts according to national standards.

2.2 School marks

The National Standards for Assessment require the school mark to be **based on student performance on semester tests.**

- For Grade 9, the school mark is derived from the average score of the student's performance from semesters 1 to 5 of junior secondary,
- For Grade 12 (academic stream) the school mark is derived from the average score of the student's performance from semesters 3, 4 and 5 of senior secondary, For Grade 12 (vocational stream) the school mark is derived from the average score of student performance from semesters 1 – 5,
- For accelerated students and others who use the semester credit system to complete their program in less than three years, the school mark is derived from the average score of the student's performance from semesters 1, 2 and 3.

The distributions for school marks at both Grades 9 and 12, for all subjects are positively skewed, tightly concentrated at the high end and have no positive statistical relationship to exam marks. Only 0.004% of students failed on their school marks.

The lack of variation in school marks means that this mechanism does not adequately discriminate between students and therefore provides little additional useful information for the system. The high marks awarded by schools appear to reflect a very widespread practice that school marks are oriented to ensuring virtually all students achieve a pass, not only in their school mark, but a mark so high that a student who failed to achieve a pass on the actual exams could receive a pass on their combined mark, in some cases similar to a student who did quite well in the external exams.

2.3 Combination of scores to provide the final marks

The school mark is weighted to contribute 40% to the combined exam score and the pure exam scores contribute 60%. Together these two components make up the combined exam score for each subject.

In order to pass the national exam, students must achieve a combined score of at least 4/10 in each of their examinable subjects as well as an overall combined average score of 5.5. The passing mark is reviewed annually by the Minister and is periodically revised. For example, in 2005–06 the pass mark was 4.25, in 2007–08 it was 5.0, in 2009–11 it was 4.25, and in 2012–13, it was 5.5. The adjustments appear to be normative rather than standards-based.

3. Overview of student performance 2013

There are four key features of the Grade 9 exam results:

(i) the very high pass rate over 99%
(ii) the marked difference between school marks and pure exam marks in average achievement levels and spread of marks
(iii) the unusual distributions of exam marks in many districts
(iv) the weakest area is Maths and it has the broadest spread of scores.

The following tables and analyses are based on individual student level data and provincial level disaggregation for 2013 provided by MoEC.

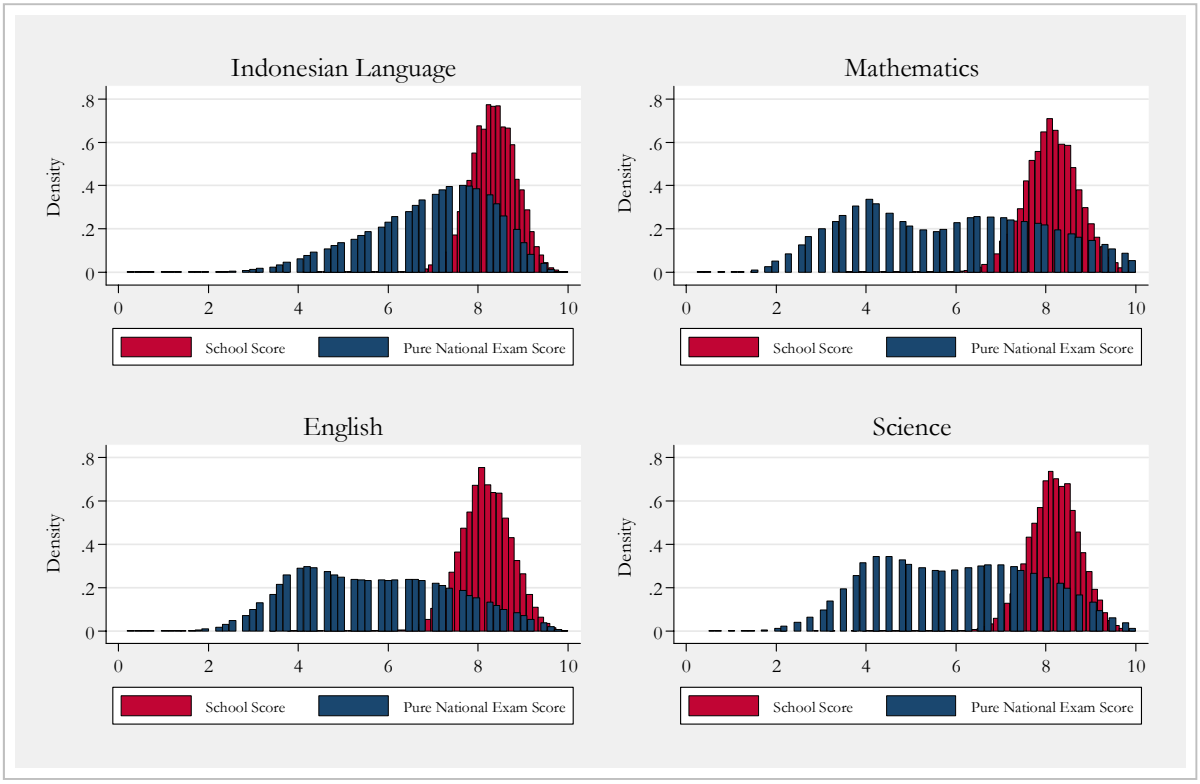
3.1 Subject comparisons and school and exam mark differences at Junior Secondary

Table 14. 2013 Grade 9 national exams – average pure exam marks and average school marks together with the lowest and highest scores and standard deviations

Statistics	Pure National Exam				School Score			
	Indonesian Language	English	Math	Science	Indonesian Language	English	Math	Science
Average	6.97	5.69	5.74	5.96	8.32	8.16	8.12	8.18
Minimum	0.20	0.40	0.25	3.04	3.04	1.38	1.44	2.10
Maximum	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00
Standard Deviation	1.37	1.71	2.08	0.51	0.51	0.56	0.61	0.55
% not passing	44.041%				0,004%			

Source: Ministry of Education and Culture data 2013, derived from aggregated provincial data.

Figure 36. 2013 Grade 9 national exams – distribution of pure exam marks and school marks for each subject



Source: Ministry of Education and Culture data 2013

From consideration of both Table 14 and Figure 36, the following observations can be made –

3.2 Difference between school marks and exam marks

i. In summary, 44% of students failed to achieve a pass on their exam marks compared with .004% who failed to achieve a pass on the school marks.

ii. The mean school marks are much higher than exam marks for all subjects and tend to have a positively skewed, peaked, highly compacted distributions. The subject means on school marks are all quite similar, ranging from 8.12 for Maths to 8.32 Bahasa Indonesia. The standard deviations are small, ranging from 0.51 Bahasa Indonesia to 0.61 Maths.

iii. The mean pure exam scores for Maths, Science and English are around 22 – 25 % lower than the school marks in those subjects. The marks are also more spread along the continuum with relatively large standard deviations ranging from 1.37 for English to 2.08 for Maths. In Maths, Science and English the distributions are negatively skewed – having almost half the students below the pass mark.

iv. The differences between the means of school marks and pure exams marks on the scale of 0 -10 points are 1.35 points for Bahasa Indonesia, 2.22 points for Science, 2.38 points for Maths and2.47 points for English. These differences are equivalent to more than 1 standard deviation on the scale of pure exam marks.

v. In Maths, and to a lesser degree in Science, the distributions for pure exam marks have a tendency to be bi-modal (i.e. having 2 peaks) in contrast with the highly peaked uni-modal distributions of the school marks.

Subject comparisons

vi. Bahasa Indonesia has the highest mean pure exam mark (6.97) and the highest mean school mark (8.32) and the lowest standard deviations for both.

vii. There was little difference between the mean scores for Maths, Science and English whether on pure exam marks (5.69 to 5.74) or on school marks (8.12 to 8.18).

Issue for investigation

It is unusual and highly undesirable in achievement tests to have a distribution that is bi-modal. In the case of the national exams, it appears that the distribution for Maths is bi-modal. In Provinces where this is most marked, almost all the districts/cities within them have bi-modal distributions. In the lowest performing province, Banten, this effect is quite dramatic in 7 of the 8 districts. By comparison, 13 of the 14 district/cities in Central Kalimantan are clearly unimodal.

Figure 37. Bi-modal distributions of Grade 9 Maths pure exam marks characteristic of Banten Province

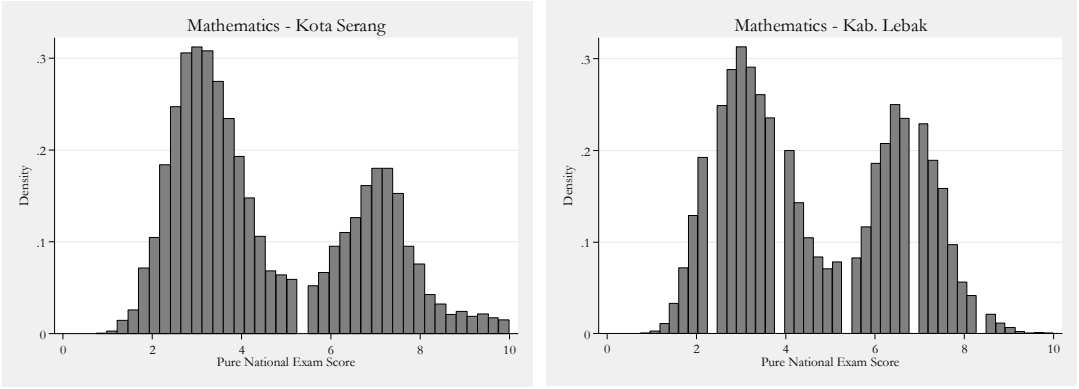
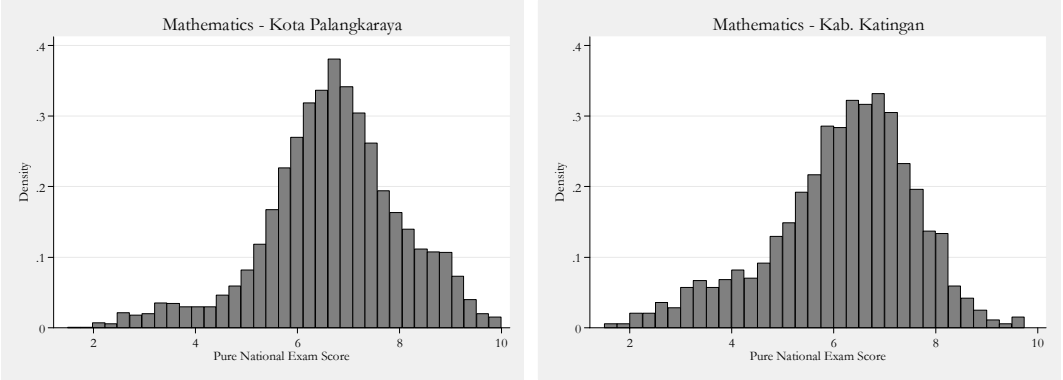


Figure 38. Unit-modal distributions of Grade 9 Maths pure exam marks characteristic of Central Kalimantan Province



Source: Ministry of Education and Culture data 2013

A bi-modal distribution, as seen above for 2 districts in Banten Province, should signify that the population is stratified in some way. For illustration, a bi-modal distribution is produced when measuring height of the population at national level and this is readily explained by the population having 2 sub-strata (male and female) with each stratum having a different mean and standard deviation. In the case of exam scores, there is no simple explanation such as gender differences or *sekolah*/*madrasah* differences because, as can be seen from other analyses, the variations are too small to produce two separate distributions.

These bi-modal distributions from districts might signify a concentration of very poor, under-resourced, understaffed and therefore poor performing schools. Alternatively, it may be found that different test procedures or levels of supervision are in place (e.g. students who are "assisted" by the school to cheat and those who were not assisted). These and other hypotheses would be relatively easy to check through analysis of data at district/city level and then at school level. Statistical tests can determine the extent of the bi-modality and the extent of possible cheating however qualitative investigation is needed to explore a range of hypotheses including impact of student characteristics, school characteristics, systematic variations in testing process, data management and the nature of the tests. It is however important to note that the bi-modal distributions are not seen in school scores, just the pure exam scores. This means it is very probable that the cause of the bi-modal distribution is related to some aspect of the tests or test administration, not to student or school characteristics.

3.3 Impact of the school marks

Both the exam marks and school marks varied across provinces but in opposite ways. Lower pure exam scores *and* higher school marks were associated together. Where there is low performance on the pure exam score, the school mark tends to be higher. This compensatory effect is seen most strongly in Maths which was the subject having the lowest average pure exam scores and the most negatively skewed, or bi-modal distributions. The following example shows that the large difference between Student A and B in the pure exams marks (one failed, one passed) is not reflected in the final exam score. The 3 point score difference between the two students is more than halved, to just over 1 point. This impacts unfairly on the final combined scores of high performing students.

Table 15. Sample calculation of final exam mark for one subject e.g. Maths

Student	*Pure Exam mark*	*Weighted*	*School mark*	*Weighted*	*Final score*
A. Student receiving the average mark in District X	3.855 Fail	60/100 x 3.855 = 2.313	8.85	40/100 x 8.85 = 3.540	5.853 Pass
B. Student receiving the average mark in District Y	6.922 Pass	60/100 x 6.922 = 4.153	7.15	40/100 x 7.15 = 2.860	7.013 Pass

Source: Author's own calculation

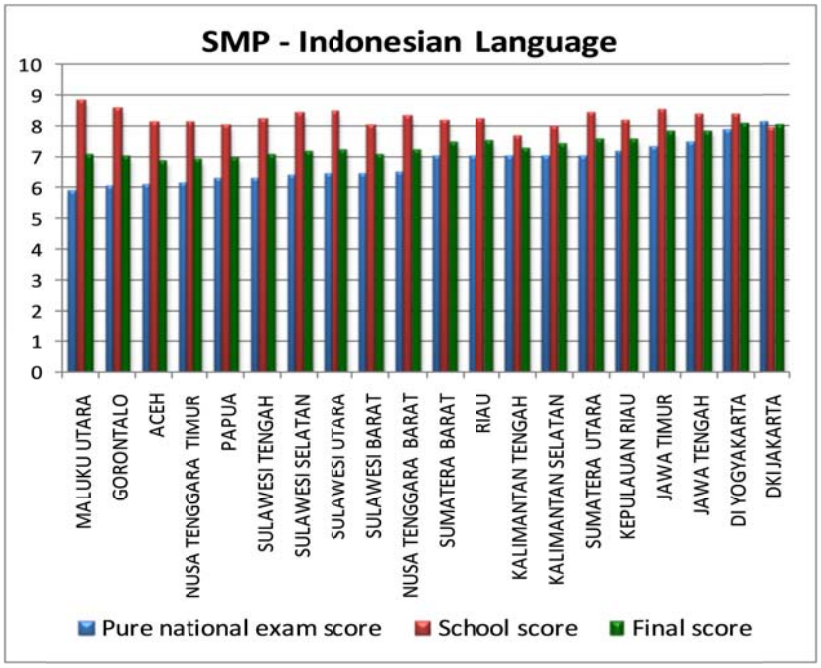
See Figure 39 (overleaf) for a comparison of pure exam scores, school marks and the final combined scores for the 10 provinces with the highest average pure exam score and the 10 provinces with the lowest average pure exam score on Bahasa Indonesia and Maths.

It can be seen that student performance varies considerably across Provinces. Within Provinces there is variation across subjects and higher performance in Bahasa Indonesia may not be associated with higher performance in Maths. Only about 50% of the provinces that were top scoring in Maths were also top scoring in Bahasa Indonesia.

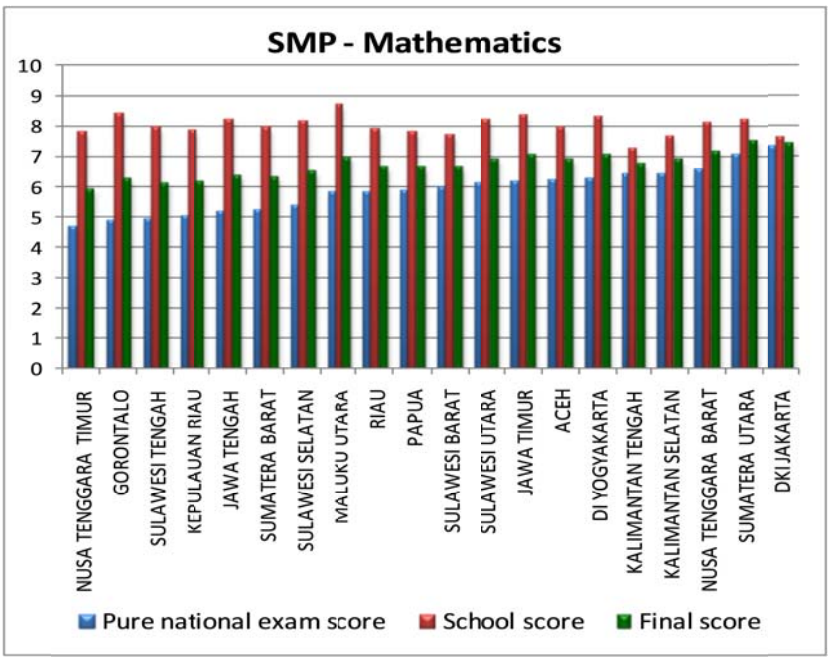
The Maths results show most clearly the impact of the school marks on achieving a pass despite having a pure exam score which was below a pass. Provinces with a failing average exam score of less than 5 in Maths (e.g. Bangka Belitung and Gorontolo) achieved higher average school marks than some provinces with an average pure exam score of 7 or higher (e.g. DKI Jakarta). The relationship of exam marks and school marks is an area which requires investigative research.

Figure 39. Grade 9 national exams comparison of the pure exam score, school marks and the final combined score for the 10 provinces with the highest average pure exam score and the 10 provinces with the lowest average pure exam score on Bahasa Indonesia and Maths

(a) Bahasa Indonesia

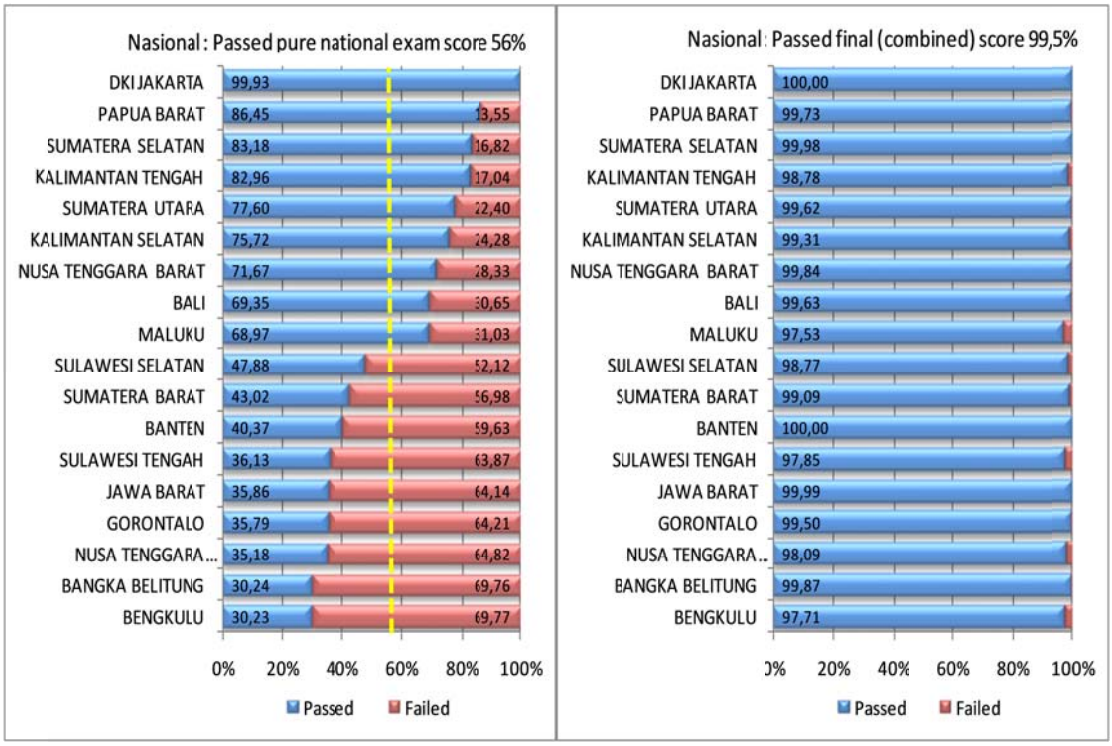


(b) Mathematics



Source: Ministry of Education and Culture data 2013

Figure 40. 2013 Grade 9 national exams - comparisons of % passing (blue) and failing (red) using pure exam mark only vs the combined score for the 9 highest scoring provinces and the 9 lowest scoring provinces



Source: Calculations by Suharti using Ministry of Education and Culture data 2013

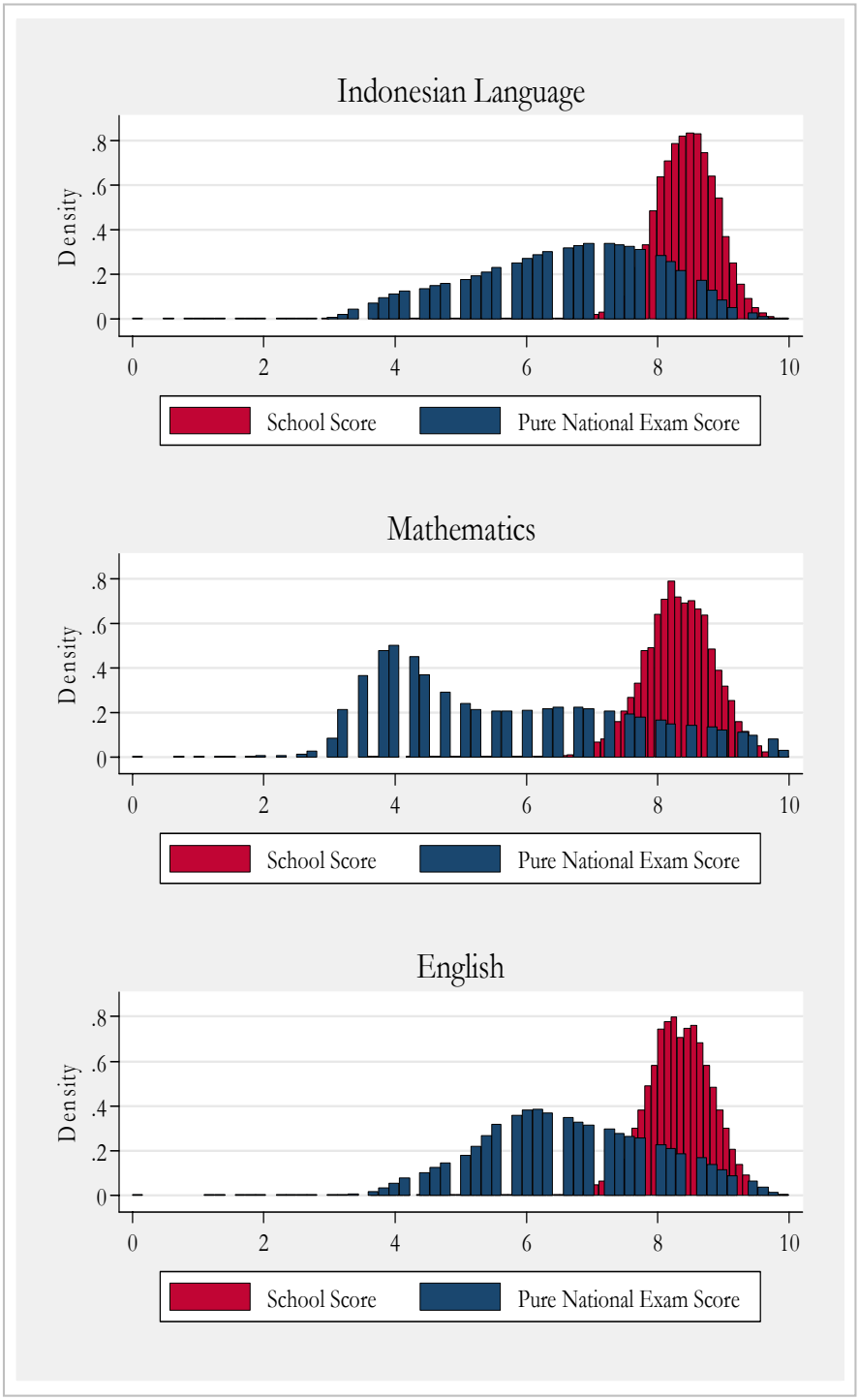
The "benefit" of the school marks is very clearly seen in Figure 40. The graph on the left shows the percentage of students who would have passed the national exam (blue) or failed (red) if only pure exam scores were used, in the nine provinces with the highest average pure exam score and the nine provinces with the lowest average pure exam score. In the highest-scoring provinces, the pass rate varied from 99.93% (DKI Jakarta) to 68.97% (Maluku). The pass rate in the nine lowest-scoring provinces varied from 47.88% in South Sulawesi to 30.23% in Bengkulu, all of which had an average pure exam score below the pass mark. The red bars indicate the percentage of students who would have failed without the combination of the school mark.

The box on the rights shows that combining the pure exam with school marks changed the pass rate for the lowest-scoring province from 30.23% to 97.71%. Overall, with the benefit of the school marks, the nine lowest-scoring provinces ended up with pass rates between 97.71% and 100%, very similar to the nine highest-scoring provinces where the combined mark generated pass rates between 97.53% and 100%.

4. Results for Senior Secondary (SMA and SMK)

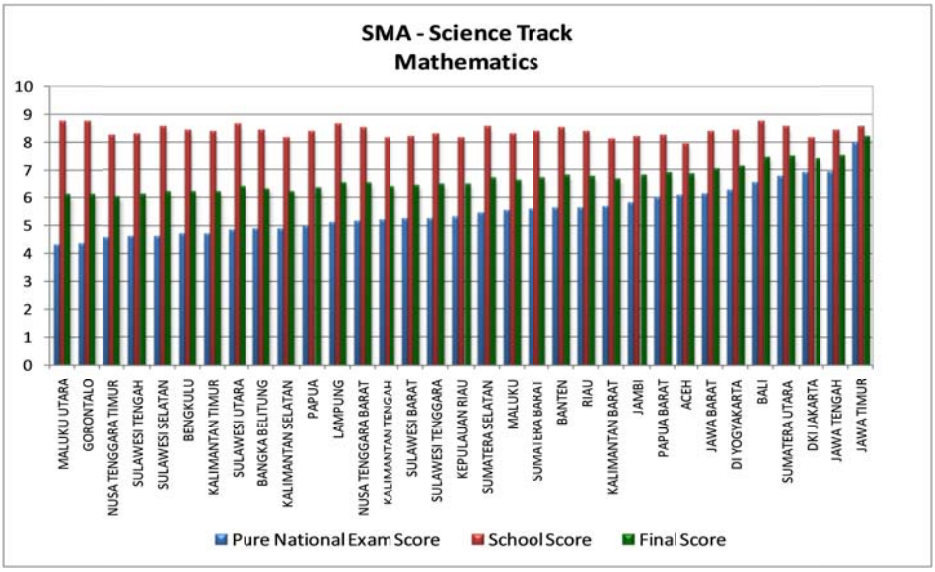
In Senior Secondary the pattern of results, distributions and impact of school marks on total exam marks are similar to those for Junior Secondary. Maths is the weakest subject and shows the most variation and higher impact from the compensatory effect of the school marks. There are some differences between the discipline areas, and between the vocational and general high schools. Using Maths as an illustration, it can be seen that in some provinces where the pure score was borderline pass/fail, the high school marks awarded pushed the average final score above that of provinces where the average pure exam mark was above the passing grade. This effect is difficult to justify and it impacts negatively on public perceptions and confidence in the exams as well as the reliability of the exams for university entrance.

Figure 41. Distribution of pure exam marks and school scores for all senior secondary schools.



Source: Suharti's calculation using Ministry of Education and Culture data 2013

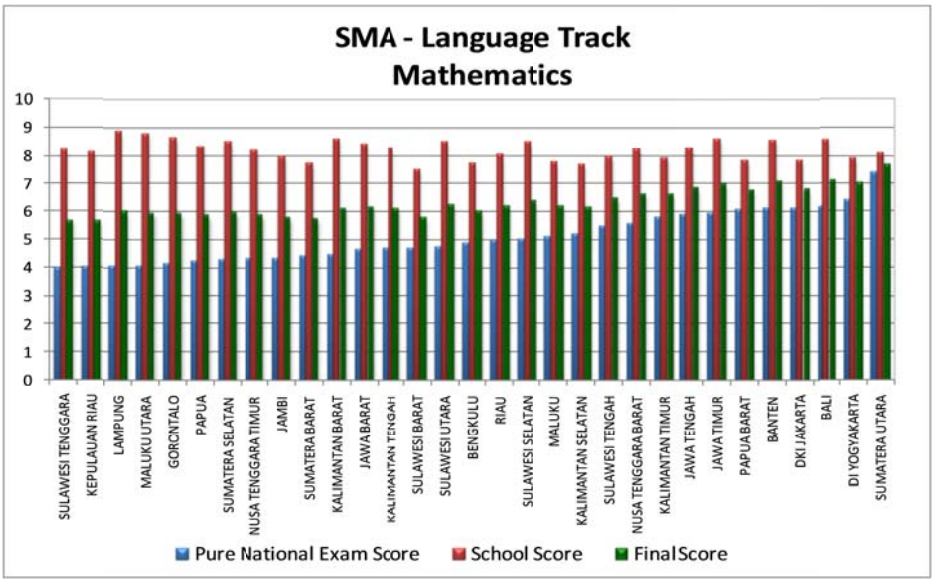
Figure 42. 2013 Grade 12 national exams, academic high schools Science track, showing average pure exam marks, school marks and combined scores for maths all Provinces.



Source: Suharti's calculation using Ministry of Education and Culture data 2013

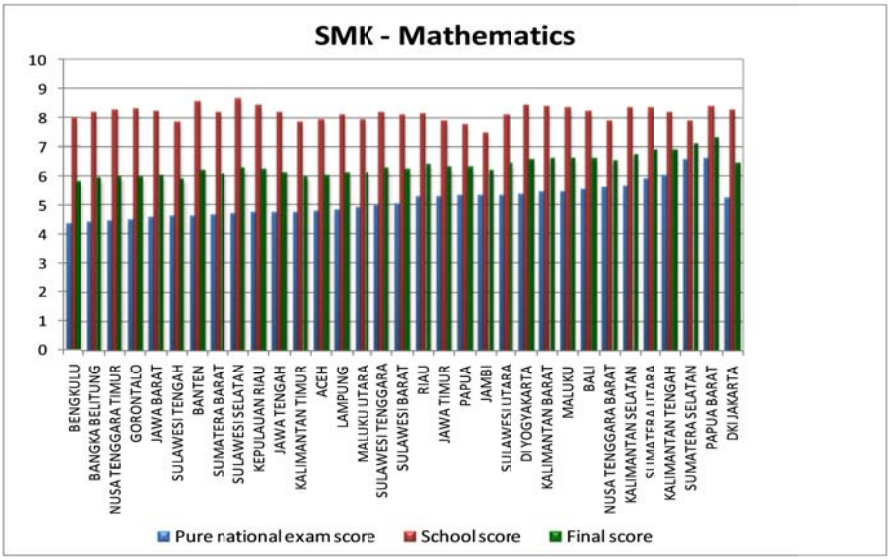
More than half of the Provinces had an average pure exam score for Maths which was below the pass mark, yet all were effectively pushed over the pass mark by their school marks. As with the Junior Secondary, the effect is seen most strongly in the provinces with the lowest average pure exam scores.

Figure 43. 2013 Grade 12 national exams – academic high school (SMA) Languages track average pure exam marks, average school marks and average combined mark for Maths for all provinces



Source: Suharti's calculations using Ministry of Education and Culture data 2013

Figure 44. 2013 Grade 12 national exams – vocational high school average pure exam marks, average school marks and average combined mark for Maths for all provinces



Source: Suharti calculations using Ministry of Education and Culture data 2013

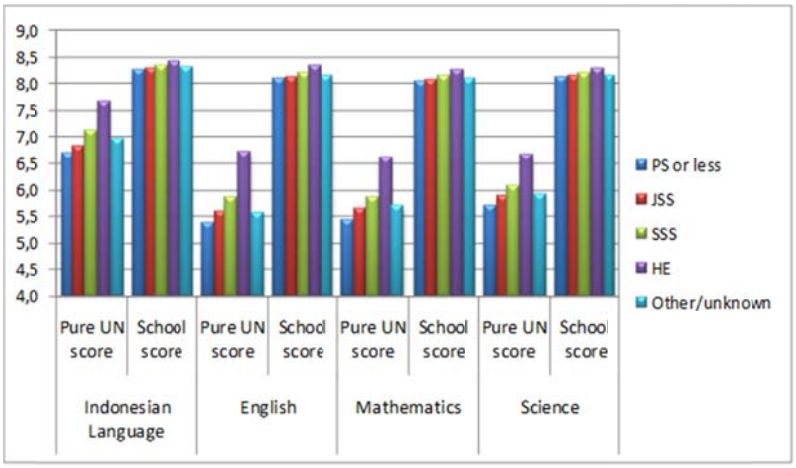
In vocational high schools, the pattern is similar to the academic high schools in both tracks shown. Figures 42, 43 and 44 show how the school marks, even when only contributing 40% to the total score have pushed almost all students above the combined pass mark of 5.5.

5. Factors affecting performance on the exams

5.1 Socio-economic background

Analyses show the expected relationship between exam scores and socio-economic factors. For example, on the 2013 Grade 9 exams, the average exam marks of students whose fathers had a tertiary education were higher by 15% (Indonesian Language), 22% (English), 25 % (Maths) and 17% (Science) than students whose fathers' education attainment is primary school or lower. As in many other countries, a student's home background provides quite a substantial premium for achievement scores.

Figure 45. Average Grade 9 pure Exam Score by fathers' highest education attainment



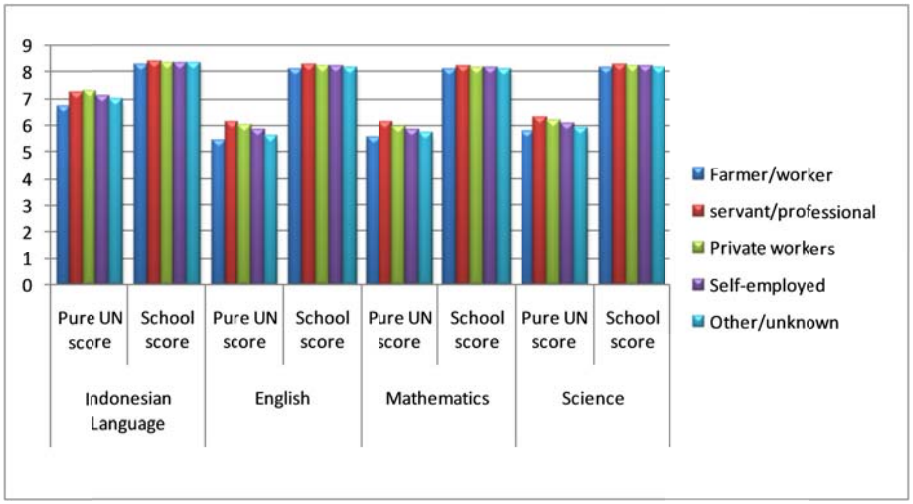
Source: Suharti calculations using Ministry of Education and Culture data 2013 and Susenas

It is widely acknowledged that the mother's education level is strongly correlated with student achievement, however the data for mothers was not available for this comparison to be made.

Students who fathers were unskilled farm workers or blue-collar workers also scored lower in all subjects than children whose fathers were civil servants or professionals. Analyses for Grade 12 found a similar pattern but the differences in both cases are not as great as those for father's level of education.

As can be seen from both data sets here, there was very little impact of either fathers' education or employment category on the school marks.

Figure 46. Average Grade 9 pure exam marks and school score by fathers' occupation status

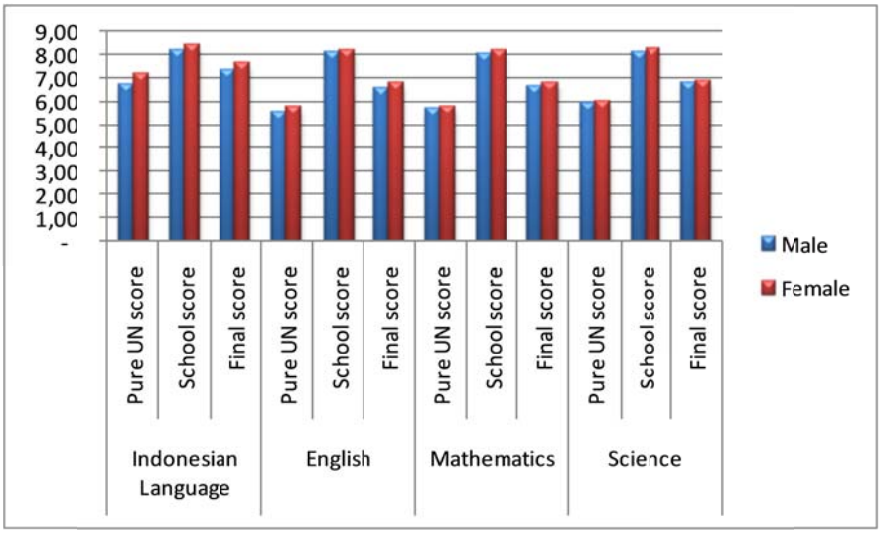


Source: Suharti calculations using Ministry of Education and Culture data 2013 and Susenas.

5.2 Gender differences on the National Exams

On average scores, girls perfomed better than boys in all subjects measured by both pure national exam and school scores, with the most difference seen in Bahasa Indonesia. The gender difference in favour of girls was found in all provinces but the size of the difference varied.

Figure 47. National exam scores at grade 9 by gender, 2013



Source: Suharti calculations using Ministry of Education and Culture data 2013

At junior secondary level, the average score of girls and boys for Indonesian language was 7.16 and 6.69 respectively and the Maths average scores were 5.83 for girls and 5.72 for boys. These differences are not statistically significant and are small compared with the differences observed on international tests.

However, using the 2010 national exams data and analysis of variance, Suharti (2013) found that the effects of gender on student performance varied across schools and across subjects.

- Gender contributed about 7.9 % (Bahasa Indonesia), 5.2 % (Maths), 5.5 % (Science) and 6.0 % (English) of between-school variation in those subjects.
- Gender effects were also found to vary across districts however there is an overall trend for girls higher performance .
- Girls had a greater variance than boys in Math and Science but boys had a larger variance in Indonesian Language and English.

5.3 School effects

Very few school effects were found for the national exams. Using national exam 2010 data that was linked to the school statistics data, Suharti (2013) found that there was no significant association between level of school resourcing and student achievement on the national exams. The findings included –

- Better resourced schools did not perform significantly better than more poorly resourced schools.
- There was no significant association between student teacher ratio and class size with national exams scores.
- Even though on average, students from schools with a higher % of teachers holding the required qualifications of S1 (degree) or D4 (diploma) tended to score higher on the exams, the importance of this variable diminished when student-level variables were considered.
- From analyses of the Grade 9 exam scores there was little overall difference between public and private schools that was not already explained by socioeconomic factors.

Specific rural/urban differences were not able to be investigated at this time as the data sets did not include suitable coding.

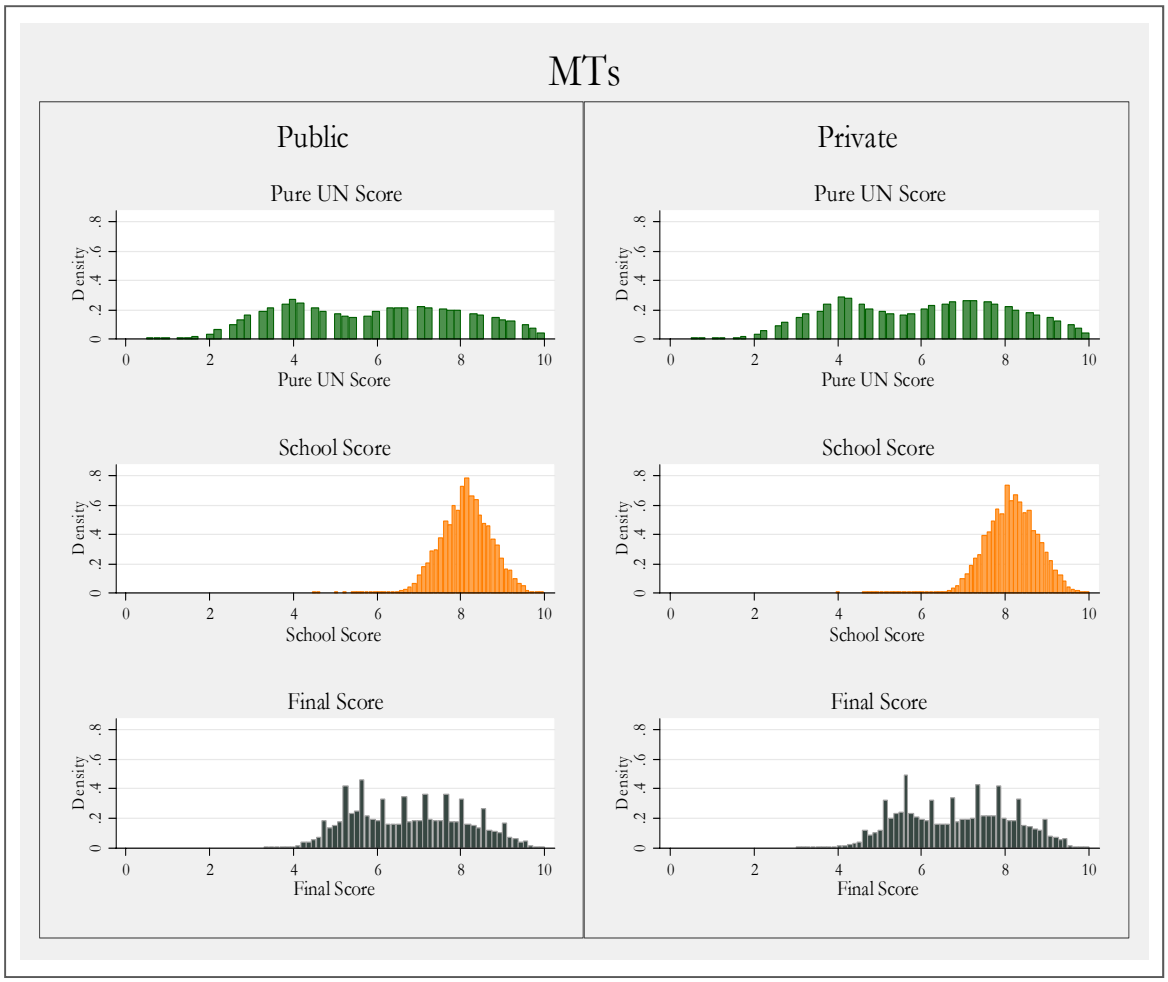
In general, analyses which show small or no significant school effects will mean that students perform at the level that is predicted by individual student background factors. Where schools are making a difference, students would score above what might be expected from their home background. On the PISA tests this is called the student resilience score, which for Indonesia in 2012 was 2.5, similar to Malaysia (2.6) but low compared with Thailand (6.3) and the OECD average (6.5).

Comparing SMP (general *sekolah*) and MT (*Madrasah* public and private), the distribution of scores are very similar, both for school marks and exam marks. The distribution of scores for the private and public *madrasah* (MTs) are also similar to those for the *sekolah* (SMP). The tendency towards a bi-modal distribution is also apparent with the highest peak around an average score of 4. However, without doing individual school analyses it is not possible to determine whether the lack of difference between school types is real, or is masked by the possibility of cheating across all school types.

Figure 48. Pure exam scores, school marks and final scores for public and private junior secondary *sekolah* (SMP)

Source: Suharti calculations using Ministry of Education and Culture data 2013

Figure 49. Pure exam scores, school marks and final scores for public and private junior secondary *madrasah* (MTs)



Source: Suharti calculations using Ministry of Education and Culture data 2013

5.4 Comparing the variance from student, school and district effects

Multi-level hierarchical modelling shows the percentage of total variance attributable to each of the levels for which student information is available – in this case, the student, the school and the district. If the student's class within a school was known, a fourth level of variation could be calculated which would show the impact of the teacher. As it is, the between-school variance is also picking up between-teacher variance.

Table 16. Estimates of variance attributable to district school or individual student on 2013 pure national exams scores

Variance Partition Coefficient VPC	*Grade 9 Bahasa Indonesia*	*Grade 9 English*	*Grade 9 Maths*	*Grade 9 Science*	*Grade 12 Bahasa Indonesia*	*Grade 12 English*	*Grade 12 Maths*
Between districts	*17.3%*	*26.6%*	*30.6%*	*28.3%*	*18.4%*	*22.3%*	*24.2%*
Between schools	*21.1%*	*26.6%*	*28.4%*	*28.6%*	*21.2%*	*32.8%*	*32.3%*
Between students 2013	*61.6%*	*46.8%*	*41.1%*	*43.1%*	*60.4%*	*45.0%*	*43.5%*
Between students 2010	*59%*	*41%*	*42%*	*45%*			

Number of cases Grade 9 = 3,652,327. *Number of cases Grade 12 = 2,697,568*

Source: Calculated from Ministry of Education and Culture data 2013 and 2010

From Table 16 it is observed that the highest levels of variance overall are explained at the individual student level and this is most marked for Bahasa Indonesia, where around 60% of a student's score is attributed to individual student/home background factors. Chief among these individual factors would be parents' level of occupation and relative wealth. Referring to similar analyses of Indonesian performance on the PISA test[1]s, more specific factors within this would include the number of books in the home and the number of resources to support education such as a quiet place to study. In contrast, the district in which the student was located had the smallest impact on Bahasa Indonesia scores and the lowest impact overall.

While disparities in performance are normally associated with regions of Indonesia, the variance here is relatively low because socio-economic factors are already largely expressed in the individual student level variance.

In general, higher levels of between-school variance indicate that schools (and some teachers) are making a difference. In other words, similar ability students do better in some schools than others. A highly effective school would be reducing the between-student variance and increasing the between-school level variance. On the 2013 exams data, the between school variance is slightly higher for English and Maths than for Bahasa Indonesia and is higher at Grade 12 than at Grade 9 for both English and Maths.

Overall the levels of variance attributed to districts, schools and students in 2013 were very similar to 2010. This is disappointing as the reform efforts to improve the quality of schools should have the impact of reducing the high level of between-students variation and increasing the between-school variation.

A puzzling feature is that Maths has the highest level of variance between districts at both Grade 9 and Grade 12 and the lowest level of between-student variance. Maths also has the highest between-school variance at Grade 9.This may be related to variations in the availability of trained or competent Maths teachers. Alternatively it might reflect aspects of test administration.

6. Challenges associated with the national exams

6.1 Validity

The key issue in validity is the extent to which the national exams are measuring the knowledge, skills and attitudes expressed in the National Standards tests at the levels appropriate for Grades 9 and 12. Assuming that the exams are constructed in accord with an appropriate testing framework that reflects the Standards, there are still many issues about the validity of exams which consist only of multiple choice items – they are not well suited to assessing the broad range of competencies expected of schooling, in particular higher-order thinking and creativity.

Higher-order thinking tasks usually require a stimulus and a constructed response but can be measured with a multiple choice format by skilled items writers. Incorporating short written responses or extended written responses can be incorporated into exams as an additional component but this would require additional budget (c.f. the relatively high cost of International Baccalaureate) for the payment and supervision of markers and it adds time to the exam process. Training and supervision of markers and clear guidelines for scoring criteria can give results with high reliability. Written components can also be made part of school assessment but the way that teachers assign marks to school assessments needs to be carefully managed and monitored to be fair, and the same competencies should be assessed by this method nationally. Short constructed responses are increasingly being able to be read by more advanced Optical Mark Recognition (OMR) technology but there are high set-up costs and the OMR process needs to be well supervised to deal with ambiguous responses.

On tests which are entirely multiple choice, students can become "test-wise" and guess responses. Practice tests often promote smart guessing rather than critical thinking. Smart guessing on multiple choice tests with four alternatives could generate a score of 25%. To reduce guessing, more expertise may be needed in the development of items with more varied response formats.

In summary, the analysis of the 2013 final exam results suggests there are 2 serious challenges to the validity of the national exams -

a) The bi-modal tendency in the distribution of 2013 pure exam marks in Maths, and perhaps also in Science, presents a serious challenge to validity as it appears quite likely that test scores are significantly affected by something other than students' ability in the subject being tested. The 2014 results should be analysed to test whether any of the distributions are bi-modal and if so, an investigation should follow into the reasons for the distribution.

b) The difference between the school marks and exam marks and the tendency for them to be negatively correlated suggests they are not measuring the same thing and it should be clarified just what is being measured by both. The very high school marks ensure that almost everyone passes the UN which suggests that the school marks act more as a graduation instrument than a measure of academic achievement. However there is also a degree of unfairness in a system if students who scored poorly on an exam obtain a relatively higher bonus from the system than students who scored higher on the same exam.

6.2 Cheating is sustained by Multiple High Stakes

Cheating is an annual problem, highlighted by the media. Combating cheating in the national exams has become more and more costly with up to 20 parallel forms of the tests now being developed, increasing numbers of supervisors being appointed (including police officers), and more Ministry time and resources committed to managing the process. It is not possible to know whether Indonesian students cheat more than students in other countries. However, from media reports and focus group discussions with principals and district officials in the preparation of this Background Study, cheating does seem to be extremely widespread, takes many forms and often involves teachers and other officials associated with the exams.

In the first instance, however, all steps should be taken to –

- Improve test security at each stage – development, item-writing, trialling and testing by having a more "closed system" with fewer people and institutions involved;
- Introduction of effective financial penalties and criminal proceedings for corporate entities such as printing and distribution companies who have been found to leak information;
- Implementation of severe penalties including fines and criminal proceedings for government officials including teachers, principals, and district officials found to have leaked information, supported cheating or "turned a blind-eye" to cheating or sought to pervert the examination in any way.

Cheating will never be resolved in Indonesia without reducing the current high stakes, both for students and adults. These high stakes are sustained by the multiple purposes of the exams and the weak application of more rigorous and comprehensive tools and processes for measuring school quality. Pressure on schools and districts should shift away from showing high exam marks to showing the quality of inputs and support that is provided to ensure that all students can perform to their best. The performance of teachers and principals should be assessed in the first instance by what they do, not just what students do, as the latter is clearly being manipulated in many places.

While the law specifies the many purposes of assessment, it should not mean that all these purposes are to be met by a single national exam. Purpose-built tools are required for each of the assessment purposes listed above. For example, it is not realistic or fair to rate the quality of a district or a principal on the average student exam score without controlling for the variance that is attributable to student/home factors and school factors such as size, human and physical resources. Indonesia already has many of these tools (e.g. accreditation, education quality assurance system) but they need more systematic implementation. A broader assessment system in which evaluations of quality are not dependent of the exam results alone will help to reduce the impact of incentives which currently support cheating.

The national exams should be seen as one part of a *quality system* in which –

- Student assessment is clearly *differentiated for different purposes* – high quality in-class formative assessment to guide learning and a range of summative assessment tools for end of stage purposes such as graduation, certification or competitive entry to higher education;
- System monitoring is measured by reliable and well managed national survey tests (such as INAP),
- School improvement is measured primarily through the Educational Quality Assurance System (EQAS) ,
- Teacher and principal quality should be measured through performance assessment,
- The education performance of the *Dinas* is measured by the extent to which it has implemented MSS in all schools and supports rigorous ongoing quality assurance processes.

In addition to reducing the multiple high stakes by strengthening the alternative evaluation mechanisms, the introduction of more rewards and sanctions in the system could also be effective in reducing the high stakes. Historically, it appears that the interests of the many stakeholders for whom the results have significant positive or negative consequences have produced an environment which sustains cheating and which becomes increasingly difficult and costly to control. The introduction of more and more multiple forms of the exams has done little to address the real problem and has itself generated other problems which impact on the test design process and the security and reliability of items.

6.3 Reliability, scale and logistics

The major issue in reliability is whether the many parallel versions of the test are equally robust and cover the same aspects of learning. It is already apparent that the burden of producing 20 or more parallel versions in order to make cheating more difficult is having a perverse effect on the quality of the exams and the workload of the Assessment Centre. Even if this were not so, the compensatory effect of the school marks minimise and distort real differences in student performance on the national exams so that the final exams scores may bear little relationship to real differences in student achievement.

On the administrative side, the size of the exam population, the number and circumstances of test locations and the costs of administration and security create enormous logistical, financial, and ultimately political, pressures. As the number of students sitting exams continues to rise so do the risks of logistical failure.

The annual procurement process for printing poses many challenges. If there is a new tender and new contract each year or two, there is little opportunity or incentive for corporations to invest in and develop the expertise, cultural values and experienced manpower needed to maintain test security and smooth operations. Options should be explored for arrangements which would allow expertise and work processes to be developed over time which can meet the unique needs of the national exams. These options could include a shift to government printing, a public/private partnership or provision for a longer term Framework Contract. Each of these options could include deployment of MoEC staff for particular periods of time.

The introduction of computer-based tests for the national exams has potential to systematically address a number of problems – cheating, distribution, printing company failure and the risk of corruption in procurement and in aspects of test administration. While computer-based tests will bring a new set of issues to be solved in connectivity , availability of hardware and student readiness , a phased approach in which both paper-based and computer based tests are used will provide time for such issues to be addressed. Computer-based testing for the national exams should be rigorously evaluated on technical grounds (e.g. can it accurately measure what is intended) as well as feasibility, cost and risk of hacking and fraud. Adoption of a computer-based testing mode must also include efforts to address the underlying issues associated with high stakes as new forms of cheating will evolve including more sophisticated forms of hacking, interference and use of electronic devices which are becoming ever smaller and more difficult to detect.

If a more sustainable and technically appropriate solution is not found, at some point, the continued operation of the exam in its current form will become unworkable or unaffordable. The situation is near to,

or may be already at, the tipping point beyond which it is impossible to guarantee reliability. The Convention on the National Exam (2013) recognised this and made a number of recommendations about the management of exams, including an increase in the role of provinces and increased security of exam papers however the recently conducted exams (2014) demonstrate that this is a continuing challenge. A long-term plan is needed for transition to a model for the national exam which has improved reliability and which is affordable and feasible. The abolition of the national exam at Grade 6 should provide some fiscal space as well as some reduction in the current burden of exam development and management. This should be a stimulus for broad consultation with stakeholders about options for the national exams in the future. It would be a missed opportunity however if the Grade 6 exams to be conducted by provinces simply reproduced the national exams on a smaller scale.

6.4 Monitoring trends– is it possible to know if students are really improving?

Trend analysis of learning achievement based on student exams scores is not possible in an environment of frequent change, e.g. variations in the conditions under which students may re-sit exams, the contribution of school assessments and determination of the pass-mark. Changing the rules, including the pass threshold, breaks the continuity of trend data and comparisons year-to-year are not reliable. It is recognised that many aspects of the national exams change each year for good reasons as the Ministry seeks to improve the exam, reduce cheating and support equity. A more sustainable and rigorous solution for monitoring trends would be to institute national sample testing which would be independent of any changes in the national exams.

6.5 National survey testing (INAP)

Indonesia has not yet fully established a cyclical national sample testing program of basic skills. The current provincially based program does not provide national information by which to monitor and improve teaching and learning. National sample testing at intervals through the Grades (e.g. 3, 5, 7 and 11) would provide independent information about performance, as well as information on which to base improvement efforts beginning from the primary grades. The results could provide a useful comparison with the results on international tests in Grade 4 (PIRLS Reading) and Grade 4 and Grade 8 TIMSS tests of Maths and Science as well as provincial and district profiles.

Ideally the Ministry would review the current implementation arrangement and seek support for a proper national survey testing program to be implemented. The current voluntary implementation at provincial level is neither strategic nor well controlled and does not generate information which is useful nationally. This could be improved by an MoU between national and provincial government which described roles, funding arrangements and use of data.

6.6 Ambiguity in the meaning of exam scores and pass rates

The current combination of pure exam marks and school marks is a ratio of 60–40, however, it can be seen that a strong effect of the school mark is to push the lowest-performing students over the pass mark, generating the high pass rates, over 99%, of the last five years. There is no attempt by the Ministry to hide this effect. The previous Minister was quoted in the *Jakarta Post* on the 2013 results, saying: "the pass rate for the Grade 9 national exam was 99.55%, and if the pure exam score only was used, only 44% of students would have passed"[2].

The meaning of exams scores is confusing for stakeholders, including teachers, parents and students. Did all the students who passed the national exams master the content of the curriculum or not? What does the 99.55% pass rate mean? High pass rates appear to keep stakeholders happy but uninformed about the real level of achievement.

An alternative for consideration would be to transform the current reporting of pass/fail and introduce reporting in competence bands with descriptors of achievement. This would take some time to socialise but would be more valid and useful.

Because the current situation is ambiguous (and misleading) it impacts on public confidence. There are many questions to be answered. For example, if the school assessments and exams are testing the same competencies, why are the distributions so different? Why have both? If the school mark pushes most students over the pass line, and the pure exam mark serves only as a component of higher education entry, that would not seem sufficient justification for the high costs, human and financial, as well as political costs when things go wrong. What are the best options for addressing issues of equity and fairness to students in disadvantaged circumstances and disadvantaged schools? Improving performance must begin with a very frank, scientific assessment of performance even if the news is not good at the start. Such an approach might be more easily taken by an authority which is independent and does not bear responsibility for the delivery of education.

6.7 Equity and fairness?

A valid exam must be fair, but being valid primarily means measuring what it is supposed to measure as described in curriculum standards. The exam itself is not the place to make equity adjustments other than to ensure all students are able to take the exam as intended - for example the special provisions made for students with disabilities. Any compensatory strategies for poor and disadvantaged students should be made upstream (i.e. in the provision of excellent teachers and resources) not at the end point (the exams).

The problem is that providing real equity in the opportunity for learning is hard to achieve across the scale and diversity of Indonesia. In these circumstances, it is understandable that some stakeholders view the school mark as an opportunity to reduce the impact of socio-economic disadvantage, and this may explain the high school marks and the fact that there is little correlation with any of the socio-economic indicators which are measured. The socio-economic differences which would normally be expected to influence performance are “washed-out” by the school marks.

Some stakeholders believe the situation could be improved by re-introducing provincial exams, or for marks to be weighted differently, or for the exams to be abolished altogether. Exams tend to polarise opinion in many countries, including Indonesia. However, inclusive education means not only that all students can participate in education but that through education, all students acquire the knowledge skills and attitudes they need to contribute to and benefit from a more productive society. This means that exams should not be adjusted downwards (‘dumbed-down’) for some students, nor student marks be adjusted upwards to compensate for disadvantage. It is the quality of teaching and the environment for learning which must be adjusted upwards from the very first years of schooling.

Students from lower income quartiles will begin to achieve similar exam results to their peers in higher income quartiles when there is real equity in the inputs to the learning process along the entire continuum of schooling, including access to pre-primary and early childhood development and education programs, and when they are not locked out of the best schools and the chance to be taught by the best teachers.

Indonesia may already have reached the stage in the universalising of basic education where consideration needs to be given to more differentiation in curriculum for students of different abilities which would lead to students being able to take different courses and different levels of exams. For example, Maths and Advanced Maths. Many countries do this to provide opportunities for all students to achieve success at an appropriate level. It recognises a core set of competencies and advanced competencies. Such a change would need to be underpinned by extensive consultation with stakeholder groups.

6.8 Making better use of exams data for improvement

The first stage of an improvement program is to analyse and make sense of available data. Data identifies the point of best leverage for action, whether it be at the school, district, province or national level. However, for data to be used in the classroom it must be in language suitable for teachers and district policy makers and managers who may not have expertise in these areas. Provision of data must also be linked to improvement strategies and development programs at the school and district level. The number of staff and expertise of the Ministry's Assessment Centre may need to be enhanced to support this process more comprehensively. School supervisors and principals will need to be trained in the application of data to improved classroom practices.

The Ministry has provided schools and local government with exam results in tabular form, hard and soft copy for some years. In the past two years, it has also been generating radial graphs of subject performance and within-subject comparisons for schools and local government. It also calculates a school competence score based on the exams and more recently an integrity score. This is intended to help schools and districts to identify relative strengths and weaknesses and to identify where cheating is a problem.

The Ministry also uses the exam data to identify the 40 lowest-performing schools for intervention which is primarily in the form of a grant. From the Minister's reports, monitoring the recipient schools showed improvement in their average exam scores between 2011 and 2012. However, the use of data for school accountability and improvement is not yet widespread and there are significant technical and policy issues associated with the exams which must be addressed.

6.9 Exam preparation – a possible distraction from real teaching?

The widespread and very intensive focus on practice tests and coaching students in test-taking behaviour before exams may give some students an advantage but, considering the results of international tests, these practices have little impact on students' actual learning. The main beneficiaries of the coaching industry appear to be the providers and publishers, not the students.

In contrast, an experimental program involving diagnostic testing followed by targeted teaching produced significant and sustained improvements on exam scores over a three-year period in Luwu Timur district of South Sulawesi. The program[3] which was a collaborative project with Universitas Negeri Makassar and a private organisation, YPS PT INCO, was subsequently mainstreamed into the district budget and annual planning. The lesson from this program is that good teaching, informed by data, is effective in helping students to learn effectively *and* to perform well on their exams. This is the kind of model that should be adopted more widely.

6.10 Closing the gap

The aim of good teaching is to enable every student to achieve their full potential. This means decreasing the influence of factors outside the school and increasing the value-adding of schools and teachers. This can only be achieved by targeting schools for intervention more comprehensively than occurs at present and ensuring that the most disadvantaged schools have better teachers, better resources and more intensive support for teachers. Considerable research and stakeholder consultation will need to underpin these efforts.

Monitoring the impact of schooling and improving teaching and learning requires robust achievement data, collected at intervals through schooling. There are many approaches to this including using common items on tests through time or developing common scales which allow performance to be measured on a continuum throughout schooling. Whatever approach is selected will required ongoing expertise, reliable data management systems and long term horizons. Information from exams and national assessment programs must inform decision making and resource allocation in order to close the gap. The key

components of Indonesia' equity strategy, School Operating Grants (BOS) and Scholarships for the Poor (BSM) may need to be adjusted or expanded in order to accelerate the closing of the gap.

7. Proposed future directions for the national exam

As suggested above, a strategic long-term plan is needed to solve the technical and logistical problems associated with the national exam. This should be the first task of an independent National Curriculum and Assessment Authority. Its independence is necessary to separate it from direct or indirect distraction and interference from the operations and performance assessment of the national Ministry whose role is to deliver education. The Authority would have a clear responsibility to all schools, including *Madrasah*. The Assessment Centre would be an entity within the Authority. Both the Authority and the Assessment Centre should be adequately resourced for their roles and their budget protected.

The long-term plan should not be rushed, neither in its development nor its implementation. It is more important to secure the agreement and confidence of stakeholders and have a clear road map than to have a short timeframe. It is also critical that the plan addresses key technical issues as well as the logistical and administrative aspects of the exams.

7.1 Recommendations for consideration by government

The *key direction of policy* should be to improve and enhance the existing exams at Grade 9 and Grade 12 as part of an overall enhanced **Assessment System** which utilises an expanded range of specific-purpose tools for the various assessment and evaluation functions required to monitor and improve learning. Specific policy directions proposed for consideration by government include :

(i) **Establish an independent Authority** to plan for and manage a world-class assessment system. This could be a new Curriculum and Assessment Authority or a revitalised and well-resourced Standards Board (BSNP) with a protected budget.

(ii) **Review the role, structure and resources of the Assessment Centre** and implement a development plan to ensure that it has the expertise and resources to carry out its tasks, including: to continue to improve the reliability and validity of the Grade 9 and Grade 12 national exams; to expand the scope to measure higher-order thinking through more complex formats and/or written components of the tests; to review the role and method of generating school marks; annual analysis of the distribution of scores including analysis of variance and hierarchical multi-level modelling to monitor school level impacts on student performance.

(iii) **Strengthen system monitoring and quality assurance processes** so that each purpose has the appropriate tools and the national exams can (eventually) become separated from the multiple high stakes which at present sustain cheating. Cheating must also be addressed by reducing the number of individuals and institutions involved in the development and administration of exams and by introduction of more significant penalties for individuals or institutions leaking information or aiding cheating in any way.

(iv) **Through a comprehensive consultation process**, **revise criteria for school graduation** to ensure that school graduation is equitable for students in all circumstances but, at the same time, ensure that this does not compromise the integrity and rigour of the national exams.

(v) **Implement national survey testing in Primary and Junior Secondary** (e.g. at Grades 3, 5 and 7) to monitor system progress and provide diagnostic information to support learning in the Primary and Junior Secondary grades as a foundation for success throughout schooling; this should build on work already undertaken in the development and provincial trialling of the Indonesian National Assessment Program (INAP).

(vi) **Strengthen the advice and support for classroom teachers** to incorporate enhanced ongoing formative assessment as an integral part of improved teaching and learning.

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Chapter 6. Quality of Student Learning as Measured by International Tests

Introduction

Indonesia participates in three international tests :

1. **PIRLS** - Progress in International Reading Literacy Study
2. **TIMSS** - Trends in International Mathematics and Science Study
3. **PISA** - Program for International Student Assessment.

These three tests are widely used in both developed and developing countries to provide reliable and valid measures of the basic cognitive skills which are the foundation of life-long learning and productivity. The tests provide participating countries with a global yardstick for monitoring their performance and trends, making comparisons and identifying how reforms or further investments may best be targeted to enhance student learning and ultimately individual and national productivity.

This chapter of the Background Study discusses why the test results matter for Indonesia, along with caveats and limitations on the use of international test results. It looks at Indonesia's performance on each of the three tests, with summaries of the benchmark level of achievement of Indonesian students, including reference to comparisons with some neighboring countries. The chapter then examines the key issues and challenges in improving performance, and recommends policy directions for consideration by government. More attention is given to the results from PISA Maths because PISA is the most recent testing (2012) and Maths is the major focus of the last testing round. As PISA is taken by 15 years olds (mainly Grade 9), it provides a reasonable proxy outcome measure for nine years of basic education and can be compared with the results on the Indonesian Grade 9 National Exams.

The performance data used in this section is extracted from the online official reports and statistical appendices provided by the agencies responsible for the international testing programs, the Organisation for Economic Cooperation and Development (OECD) for PISA and the International Association for the Evaluation of Educational Achievement (IEA) for PIRLS and TIMSS. The analyses have been generated by the author from the official reports and data sets available online.

1. Why the tests matter

These international tests are relevant and important for a number of reasons. Having robust performance information on education can drive improvement efforts that generate benefits to individuals and overall national productivity.

The tests provide international benchmarks for the basic skills in Literacy, Numeracy and Science, which all young people need for employability in a competitive world and for full participation in increasingly complex societies. In addition to being skills and attributes which parents and communities desire for their youth, they represent the basic competencies that enable young people to lead productive lives. Governments and education stakeholders can use these benchmarks to monitor their relative progress and comparability with other similar and more developed countries. As a result of improving education outcomes, individual and macro-economic benefits can be expected to follow.

1.1 System benefits

The tests and associated questionnaires provide detailed system-level information about strengths and weaknesses. In particular, these include detailed information about level of performance on specific skills, the influence of factors which are correlated with either high or low performance (such as school size and context, profile of teachers, level of investment), trends including gender performance and the important issues associated with equity – whether students from poorer backgrounds are benefiting from educational opportunities as much as their more advantaged peers. The system-level information generated by the testing programs can help policymakers target interventions to particular groups or target particular objectives and then monitor progress.

Diagnostic information from the testing programs can feed back into curriculum design, teaching practices, school and national testing programs and teacher pre-service and in-service development. For example, analysis at the item level can identify the wrong responses most frequently selected by students, highlighting common errors in teaching.

At a national policy level, the tests generate awareness and discussion of the knowledge and skills considered essential to be mastered by school leavers and the skills needed in the early grades to ensure a sound foundation for learning. Analysis of trends emerging in the early grades (e.g. boys' weakness in Literacy) can lead to specific strategies to successfully address those weaknesses.

Indonesia has been making use of the information from its participation in the international tests over the past five years. This includes in the development of *Kurikulum 2013*, the structure of exam questions and the use of PISA items to benchmark the difficulty level of national exams. Improving performance on the international tests, especially PISA taken by 15 year olds, has become an important objective for the government.

1.2 Improved economic outlook and productivity for individuals

Globally, the test results are being taken seriously because of the strong and growing body of evidence (e.g. from modelling undertaken by education economists and from longitudinal studies undertaken by education researchers) of the strong positive association of higher tests scores with higher individual earning capacity and, consequently, higher national economic and productivity indicators such as per capita Gross Domestic Product.

Although there is causality in both directions (i.e. students from more wealthy and advantaged backgrounds score more highly on achievement tests), it is also true that students who score highly on tests achieve more highly later in life (as measured by incomes, socio-economic job status and type of housing) than would be predicted by just the socio-economic status of their family at birth. This finding is made neatly in a study by Ritchie and Bates[1] in the UK through 18,588 participants in the renowned 50-year longitudinal *National Child Development Study* (1958–2008). The participants were assessed on reading and literacy and a range of other factors at ages 7, 11 and 16. At age 42, measures were taken of their attained socio-economic status based on occupation ranking, housing classification and gross salary. The analysis identified a substantially significant positive influence of early Maths and reading scores on adult socio-economic status, beyond what would have been predicted from their birth status.

1.3 Positive contribution to developing human capital and national development

Throughout the 20th century, economists have described human capital as a driver of economic growth, with human capital being measured by years of education. However, the growth of robust internationally benchmarked achievement tests has changed this paradigm somewhat. Recent research by education economists such as Hanushek[2] underscores the greater importance for economic growth of achievement of

cognitive skills, rather than completion of years of schooling. Over the past decade, Hanushek and others have tested this relationship and found it to be both robust and causal. His conclusion from the combined evidence is that differences in cognitive skills achieved at school *lead to* economically significant differences in economic growth.[3]

Building on this strong association of basic skills performance and economic growth, Hanushek has calculated that an increase of one standard deviation in test scores is associated with a two percentage point higher average annual growth rate in GDP per capita across 40 years. This finding has been repeated using various modelling approaches.

Furthermore, since the PISA tests illuminate the *impact of schools*, Hanushek suggests that *school policy – if it is effective in raising cognitive skills – can be an important force in economic development. It is not only wrong but unnecessarily self-limiting, to interpret test differences as a simple reflection of individual ability or family differences – factors which are beyond the school's sphere of influence*[4].

1.4 Test scores can guide improvement efforts

While one standard deviation (100 points) is a large skill difference, Hanushek points out that a significant number of developing countries (including Indonesia) in the PISA 2009 tests, were *more than one standard deviation behind the OECD average*. To some, the task of increasing their average test score by 100 points may not seem plausible, but it is very plausible to envisage schooling interventions that could lift a country's average score by a quarter standard deviation (25 points on a PISA scale) within a decade.

This level of improvement (25 points in a decade) has been achieved by a number of countries. Turkey improved its average Maths score by 25 points and average Science score by 40 points between 2003 and 2012 as a result of systemic reforms. Some of the key strategies implemented by Turkey included a new Maths curriculum which had an increased emphasis on students *doing* mathematics, exploring mathematical ideas, solving problems, making connections among mathematical ideas, and applying them in real-life situations. The new Science curriculum emphasized active, student-centered learning to replace memorization. (These are all intended features of *Kurikulum 2013* in Indonesia). The curriculum changes in Turkey were also underpinned by a change in teaching philosophy, increased professionalism and responsibility of teachers and school inspections which became more transparent and performance oriented.

With a low to moderate increase (25–50 points) in average PISA scores over the next three testing cycles, Indonesia could be expected to emerge from a lower to an upper middle income country and achieve a higher GDP at a faster rate than would be projected from the current situation. The goal of improving by a quarter standard deviation (i.e. 25 points) seems easily achievable in Literacy but will be more challenging for Maths and Science where there has been either no improvement or a decline in the average score over the past three testing cycles (Maths). Although this logic is appealing, it must always be remembered that the objective is not simply to improve test scores. The objective is to improve learning and the acquisition of skills. Efforts to simply improve test-taking or to improve mastery of some specific skills known to be tested, and not others, will be counter-productive.

2. Caveats and limitations on the use of international test results

2.1 The nature of standardized tests

Some of the criticisms of international tests are about the nature of all standardized tests. These include, for example, that tests can only measure a sample of the skills and knowledge that matter; tests are inherently unfair because they cannot be sufficiently responsive to the diversity of cultural effects across a country; and tests generate simplistic comparisons and league tables which have negative effects on students and

schools. These criticisms are valid of all tests to some extent and the results of PISA, TIMSS and PIRLS should be interpreted with caution, especially where differences are small. Any test can only sample a small proportion of the important learning that takes place at school, therefore the framework for each test should make explicit just what is being tested. As with many tests, the simplest measures (e.g. average scores and league tables) convey the least information. There is little value or validity in making judgements about a country's education system simply on the basis of its average score or rank order. The most useful information for educators, policymakers and stakeholders is to be found in the benchmark analyses and understanding the correlates of high and low performance, including student, school and country background factors.

2.2 Multiple sources of information are needed

International tests should never be the only source of information about student performance. They should form part of a comprehensive assessment system that draws information from a number of tools for various purposes. Most countries have some form of sample testing to monitor learning and some countries use items from international tests within their own national sample tests to link the scales so that they can compare results and trends from both.

2.3 Interpreting trends with caution

Trend analysis is a particular issue that needs to be kept in perspective, remembering that two consecutive measures do not constitute a trend. It is quite commonly observed that one year a country's performance may go up and three years later it may go down without any apparent reasons for the change in either polices, resources or economic conditions. However, if the difference is really large, or the direction of a trend is consistent over three or more testing cycles, it should prompt serious questions about the underlying causes.

3. Summary of the international tests in which Indonesia participates

Table 17. Participation in international tests

TEST	Subjects	Target population	Reporting	Years participated
PIRLS (Progress in International Reading Literacy Study)	Reading	Grade 4	4 Benchmarks (Advanced, High, Intermediate, Low) and Below Low	2006, 2011
TIMSS (Trends in International Mathematics and Science Study)	Maths Science	Grade 8 and aged at least 13.5 years. (There are also Grade 4 tests not taken by Indonesia.)	4 Benchmarks (Advanced, High, Intermediate, Low) and Below Low	Science 1995;Maths & Science 1999,2003, 2007, 2011
PISA (Program for International Student Assessment)	Reading Maths Science	15 year olds (mainly Grade 9)	6 Proficiency levels (Levels 1- 6) Level 1 further divided into two levels for Reading. In this Study 1a and 1b have been combined	2000,2003,2006, 2009, 2012

The tests have a number of common psychometric properties, including a mean of around 500 points which leads to some comparisons between performance in similar subject domains e.g. comparing PIRLS Reading and PISA Reading scores can show broad changes through time. However, the tests are not designed as a single continuum of learning and are not measuring the exact same competencies. This means that, while

observations can be made about similar trends, it is not possible to draw any statistical conclusions about the degree of similarity. The only place that this can be done is between TIMSS Grade 4 and TIMSS Grade 8.

The results are expressed in many ways: means and standard deviations, trend data and country comparisons, benchmark data and item data. Supplementary reports include analysis of gender, equity, home and school factors associated with performance. Each participating country has an expert team which advises on the cultural aspects of the tests, the sample design and interpretation of results. Detailed individual country reports are provided.

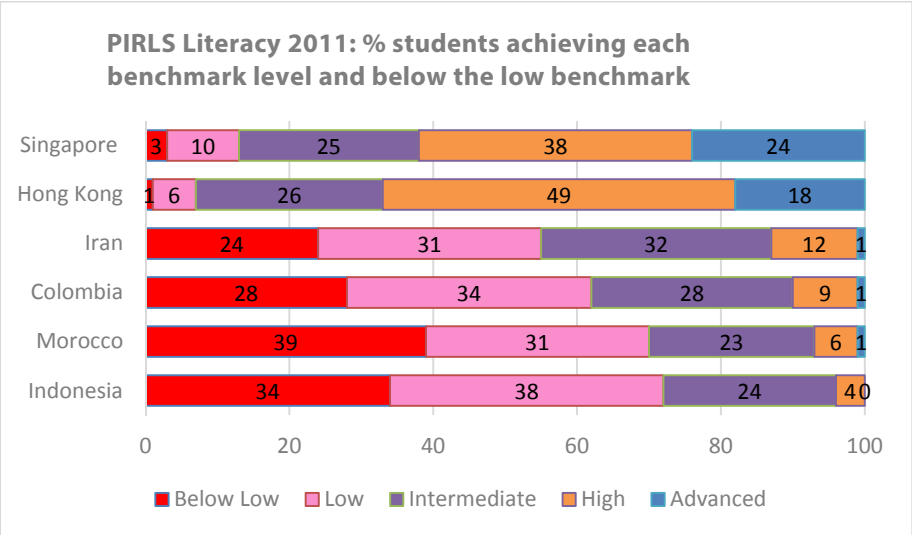
4. PIRLS – Progress in Reading International Literacy[5]

PIRLS was first conducted in 2001 and Indonesia joined in 2006. It is a test of Literacy, defined as "the ability to understand and use those written language forms required by society and/or valued by the individual". These reading skills provide both the foundation for learning and the foundation for success in later life. The test assesses reading comprehension on two types of text – informational and literary. The two parts are reported in detail and provide extensive diagnostic information. However, a combined single score is most frequently used for trend analyses and country comparisons. PIRLS benchmarks are similar to TIMSS – low, intermediate, high and advanced. Although Indonesian performance is still low by comparison with other countries, there has been a significant gain over the last two testing cycles.

4.1 Level of achievement on the PIRLS 2011

Of the 41 countries participating in PIRLS, Indonesia was ranked close to the bottom with an average score of 428. Fewer countries in the region participated in PIRLS than PISA and comparisons are not available with neighboring countries such as Malaysia or Vietnam. The countries closest to Indonesia in performance were Columbia and Morocco where each has more than 20% below the low benchmark. Indonesia and Morocco have two in three students whose highest achievement was to achieve the Low Benchmark.

Figure 50. % students achieving at each of the PIRLS benchmark levels in Indonesia and some comparison countries



Source: Data from TIMSS and PIRLS International Study Center, IEA 2011

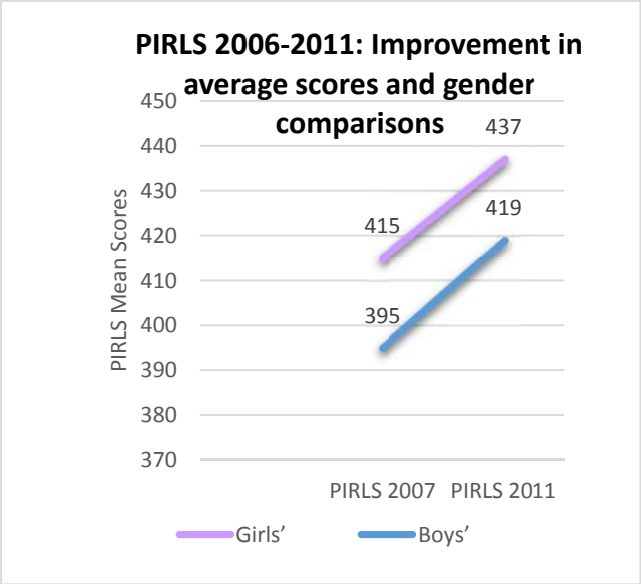
About one-third of Indonesian students were below the low benchmark and another 40% had the low benchmark as their highest score. This is a major concern as primary school is the time when foundational skills are established for later learning, and for life. Without the foundational skills there is little chance of

students successfully mastering the competencies at Grade 9, as can be readily seen in the PISA Reading scores of Indonesian 15 year olds. Indonesia's overall performance is similar to that of Morocco and Columbia where there is an objective to reduce the number in the lowest bands and increase the number achieving in the intermediate and high bands. Indonesia had only 4% at the high benchmark and no student achieved the top level – the advanced benchmark.

Notwithstanding this low performance, a hopeful and notable feature of Indonesia's performance has been the significant improvement in scores between 2006 and 2011. Indonesia had one of the most improved PIRLS scores of participating countries. A worthy objective for policymakers is to continue to improve, as well as accelerate the rate of that improvement.

The following graph shows the extent to which both girls and boys improved. The gender gap between girls and boys continued, with girls scoring higher literacy results. The difference in scores between 2006 and 2011 was significant, and the difference between the scores of girls and boys was significant. The gender difference in favor of girls was similar (20 points and 18 points) and statistically significant in both years. While two testing events cannot yet be regarded as a trend, the pattern is also seen in PISA Literacy over a longer time period. For that reason, the PIRLS pattern of improvement and the gender gap between girls and boys is shown here.

Figure 51. PIRLS 2006-11 Changes in average reading scores of Indonesian boys and girls



Source: Data from TIMSS and PIRLS International Study Center, IEA 2011

5. TIMSS – Trends in International Mathematics & Science Study[6]

TIMSS tests were first conducted in 1995 to provide policymakers, administrators, teachers and researchers with insights into how educational systems were functioning, as well as critical information about the possibilities for educational reform and improvement. The tests are for Grade 4 and Grade 8. Indonesia has participated since 1999 but only in the Grade 8 tests.

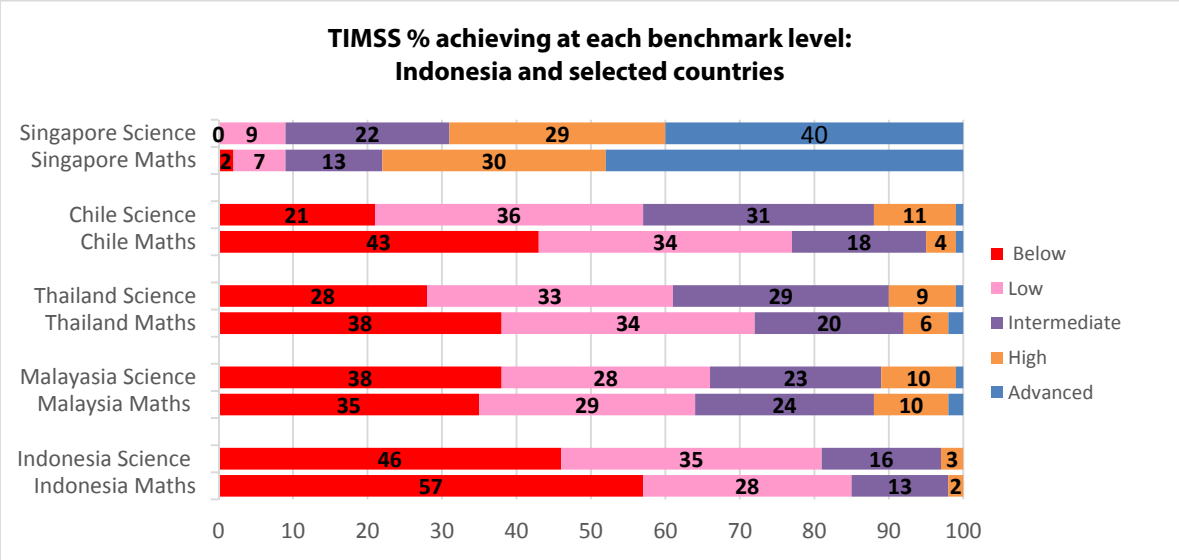
The framework for TIMSS is designed to reflect the main elements of core curriculum in Maths and Science for Grade 8 or equivalent. TIMSS Maths Grade 8 includes the traditional content areas of number, algebra, geometry, data and chance with an emphasis on the competencies of knowing, applying and reasoning. Science Grade 8 includes the content areas of biology, chemistry, physics and earth science also with an emphasis on the competencies of knowing, applying and reasoning.At Grade 8 there is more emphasis on reasoning and problem solving than on simply knowing. This is a challenge now recognised by Indonesian

policymakers – namely that Indonesian students have not been developing adequate problem solving and reasoning skills.

Similar to PIRLS, the TIMSS tests have four benchmark levels – *low, intermediate, high and advanced* and a category called *below the low benchmark*. Maths achievement is also reported in sub-domains and there is rich information which describes the educational contexts for Maths, including home background, student attitudes toward Maths, the curriculum, teacher education and training, classroom characteristics and instructional methods. The pressing objective for many developing countries, including Indonesia, is to reduce the number of students in the *below the low benchmark* category and move the others upward towards the *advanced level*.

5.1 Level of achievement on TIMSS 2011

Figure 52. TIMSS 2011 Maths and Science Indonesia and country comparisons

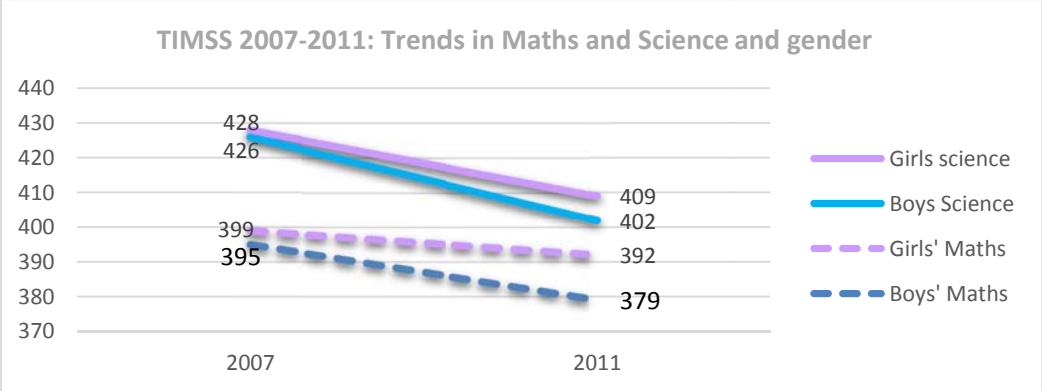


Source: Data from TIMSS and PIRLS International Study Center, IEA 2011

The performance of Indonesian students was very low in Science (average score 406) and even lower in Maths (average score 386). Both Maths and Science were at least one standard deviation below the mean TIMSS score. The most critical element is that the majority of students (57%) are in the *below the low benchmark* category and only 15% achieved above the low benchmark. Like the PISA results below, the TIMSS tests make a case for a targeted strategy to improve Maths and Science teaching, especially Maths teaching.

A comparison of performance between 2007 and 2011 shows a gender gap appearing in 2011 for both Maths and Science. Even though the score point difference between girls and boys in Science was only 7 points in 2011, this was significant. The difference in Maths, which appears much larger than the difference in Science, was not calculated by TIMSS researchers as the scores of between 15% and 25% of students in the *below the low benchmark* category were too low to assess with accuracy. In isolation, the gender gap noted here (2011) does not constitute a trend, but in combination with other evidence suggests that this is worth investigating further.

Figure 53. TIMSS 2007–2011 Trend in Maths and Science and gender differences



Source: Data from TIMSS and PIRLS International Study Center, IEA 2011

The TIMSS program also includes Grade 4 tests of Maths and Science. Given the results above, it could be very helpful for Indonesia to participate in the Grade 4 tests to monitor achievement trends in mid-primary, especially in response to a new curriculum and the integrated approach to Science teaching.

6. PISA – Program for International Student Assessment conducted by the Organisation for Economic Cooperation and Development (OECD)[7]

Developed by the OECD for assessing 15 year olds, near to the end of junior secondary schooling, the tests focus on the knowledge and skills essential for full participation in society. This broader focus differentiates the PISA from TIMMS, although there is clearly a relationship in the results obtained by countries. The framework for the content and skills to be assessed by PISA are developed in consultation with experts from participating countries and take account of cultural and linguistic context. The relevance of the tests is periodically confirmed by tracking young people the year after they have been assessed on PISA. To date, longitudinal studies show a strong relationship between PISA Reading scores in 2000 and later educational attainment and success in the labor market.

PISA commenced in 2000 and cycles through Maths, Science and Reading every three years. The latest results are from 2012 in which the major focus was Maths, with Reading, Science and Financial Literacy being minor focal areas. PISA has six benchmark levels (1 to 6) and the lowest is further divided into 1a and 1b for the Literacy scale. The *minimum level of proficiency* is regarded as Level 2.

For Maths proficiency, students are required to formulate, employ and interpret mathematics in a variety of real-life contexts. This means they can reason mathematically and use mathematical concepts, procedures, facts and tools to describe, explain and predict phenomena. Mathematics Literacy is not an attribute that an individual either has, or does not have, it is a (cognitive) skill that can be developed over a life-time.

Each testing cycle produces three kinds of reports – basic indicators that provide a baseline profile of student knowledge and skills; indicators that show how skills relate to important demographic, social, economic and educational variables; indicators on trends that show changes in student performance and in the relationships between student-level and school-level variables and outcomes. From a total Indonesian sample frame of 3,599,844 school students aged 15, a sample was drawn of 5,622 students yielding a weighted sample equivalent to 2,645,155 students. The following analysis focuses mainly on Maths.

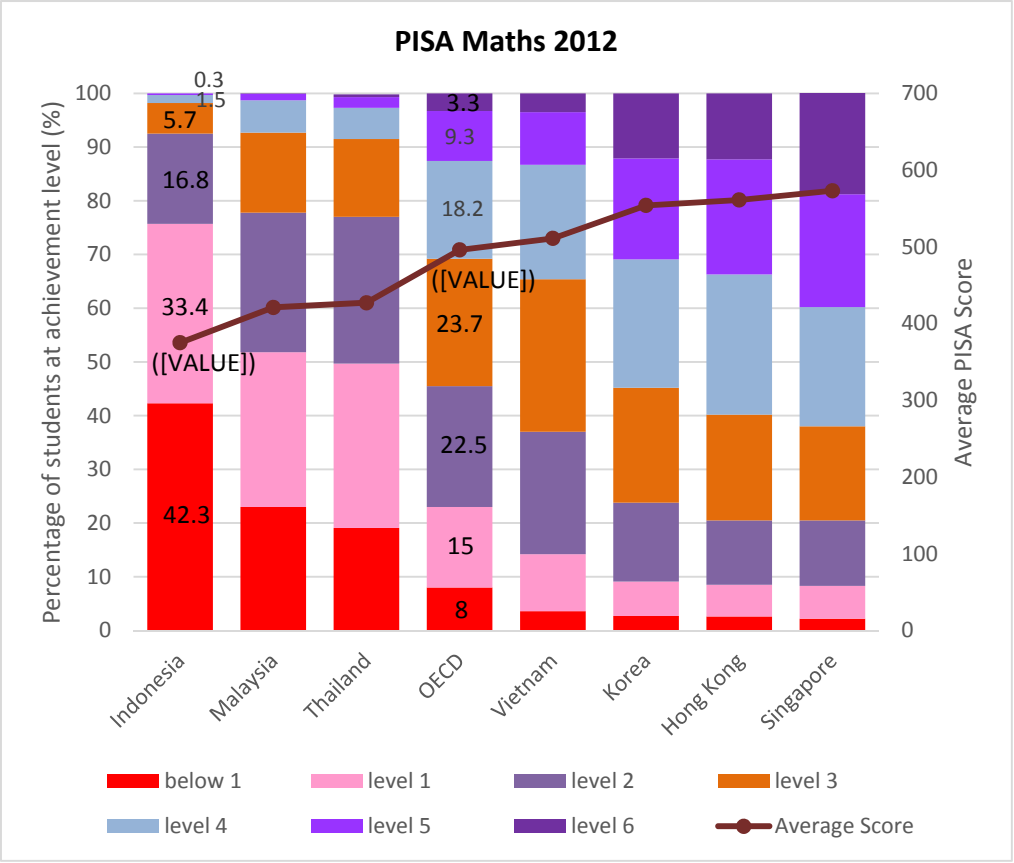
6.1 Level of achievement on PISA 2012

Indonesia's average scores for each test (Maths, Literacy and Science) are close to the bottom of the rank order. In Maths, Indonesia's average score of 375 is more than 1 standard deviation (100 points +) away from the OECD mean score of 496. This average score is equivalent to a lag of almost three years of schooling (41 PISA points equates to 1 year of schooling). It underscores the point that improvement in the foundational skills in primary school is needed in order to improve performance in the following years of schooling.

For improvement purposes, it is useful to look beyond comparison of average scores and consider the profile of students achieving at each skill/proficiency level. This helps to identify where efforts are needed – i.e., in Indonesia it will be important to work at both ends, providing remedial teaching and nurturing talent.

Figure 54 below shows the extent to which Indonesian performance is concentrated in the two lowest bands. While Indonesia's average score is less than a half standard deviation below Malaysia (421) and Thailand (427), the skills proficiency profile is very different: 75% of the Indonesia sample did not achieve the *minimum benchmark* (Level 2).

Figure 54. PISA Maths 2012 - Performance for Indonesia and comparison countries



Source: Data from OECD 2013

One perspective is that the results are consistent with what might be predicted from Indonesia's development status (e.g. its GDP per capita). However, another perspective is the prospect (raised by Hanushek and by the Ritchie and Bates study) that improved Literacy and Numeracy will generate improved GDP and that this is possible *because schools can make a difference*. Consistent with this view is the continuing high performance of regions and countries such as Shanghai-China and South Korea, both with a current GDP per capita below the OECD average, demonstrating that low national income is not incompatible with strong educational performance. According to the PISA analyses, 9.6% of the variance in PISA scores in Indonesia can be attributed directly to socio-economic status which leaves about 90%

amenable to educational and equity-related interventions at school level. This must be the basis for a constructive and positive outlook for improvement in Indonesia. Furthermore, the overall data for PISA clearly show that countries with very different GDP can achieve the same scores. For example, Poland and Canada both achieved a high average score (518) but the GDP of Poland is half that of Canada. Clearly high performance is not just the preserve of rich western countries. Many of the highest performing countries are *in Asia.*

6.2 Differences in subject performance

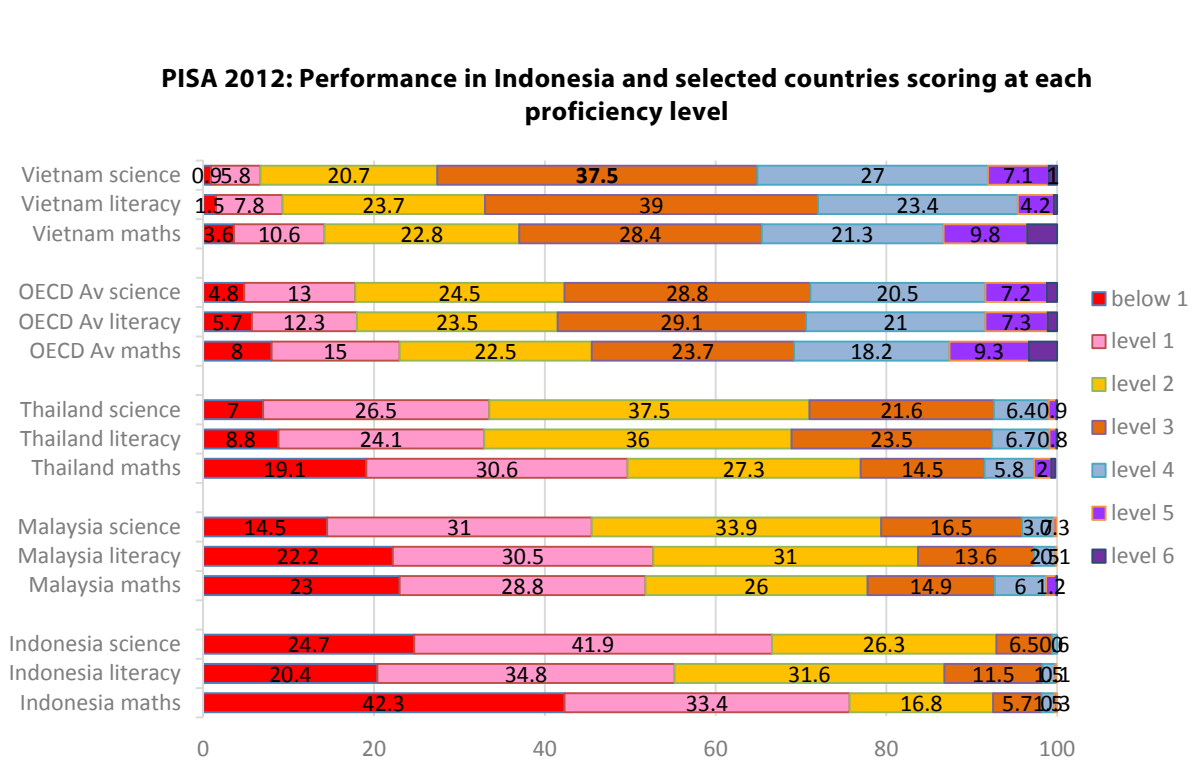
Table 18. PISA 2012 Indonesia Maths, Literacy and Science % at each proficiency level

Indonesia	Below Level 1	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6
Maths	**42.3**	33.4	16.8	5.7	1.5	0.3	0
Literacy	20.4	34.8	31.6	11.5	1.5	0.1	0
Science	24.7	41.91	26.3	6.5	0.6	0	0

Source: Data from OECD 2013

The high percentage of students below level 2 is the reason for the low average scores and low inter-country ranking. Maths in particular stands out with 75% below level 2 which is described as the minimum competence level. Literacy achievement is clearly showing progress, with more students achieving levels 2 and 3.As well as comparing the subject profiles for Indonesia, it is useful to compare the profile with some regional neighbors. For example, the Indonesian level of achievement is most like Malaysia except for the large percentage below level 1. Indonesia has almost no students performing at levels 5 and 6, while Malaysia and Thailand have around 5 to 10%.

Figure 55. PISA Percentage in *3*proficiency levels for Indonesia and comparison countries



Source: Data from OECD 2013

6.3 Gender differences

As with the PIRLS results, there is a significant gender difference favoring girls in literacy on PISA. Twice as many boys as girls are in the lowest level (below level 1) and more girls than boys are in levels 2 and 3. Both boys and girls improved in literacy between 2000 and 2012, and the difference between them has persisted. This gender gap favoring girls is seen in many countries. There was no significant gender gap for Indonesia in Maths or Science.

Figure 56. PISA 2012 Literacy - Indonesia gender difference in performance

Source: Data from OECD 2013

The PISA research included with the reports shows that low-performing boys face a particularly large disadvantage as they are heavily over-represented among those who fail to show basic levels of reading literacy. This often stems from low levels of engagement with school and low levels of engagement with reading and such students are more likely to opt out of learning or drop out ofschool altogther.

6.4 Trends over time

As noted, there has been steady and significant positive trend in Literacy from 2000 to 2009 equivalent to an annualized improvement of 2.3 PISA points p.a. The 6-point drop from 2009 to 2012 was not significant. By comparison, there has been no significant improvement in achievement scores for Maths or Science, and there has been a decline in Science scores.

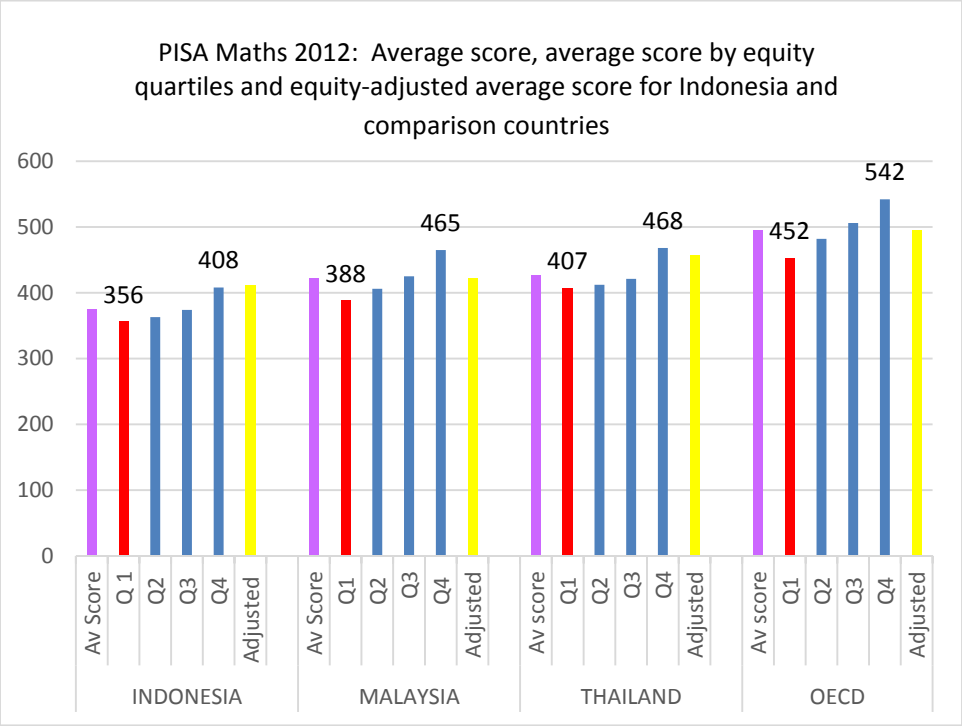
Figure 57. PISA 2000–2012 Reading: Trend in average scores

Source: Data from OECD 2013

6.5 Socio-economic disadvantage and PISA achievement[8]

The PISA tests (as well as TIMSS and PIRLS) include school and student questionnaires which collect data on background factors. For students, these questions include items such as the number of books and other resources in the home, parents' occupation level, either parent's highest level of education and family income. The school level information includes items such as the profile of teachers, resources in the school and the demographic context. From these questionnaires, PISA researchers have constructed an index of economic, social and cultural status (ESCS) disadvantage from which students can be grouped in quartiles for analysis of the impact of disadvantage on achievement scores.

Figure 58. PISA Maths 2012: Performance by socio-economic status showing comparison of mean and "adjusted mean" scores



Source: Data from OECD 2013

The differences may not look much but it is useful to compare the average score of the bottom and top quartiles and to refer to the mean on the left and the adjusted mean score on the right. The difference between Q1 and Q4 is more than half a standard deviation. The adjusted score takes account of a country's socio-economic profile. For Indonesia the adjusted mean increases from 375 to 41, slightly higher than the average score of the top quartile which pushes the country rank up from 62/63 to 58/63.

The overall variance in scores attributed to socio-economic factors in Indonesia was 9.6% which is about midway in the range of all countries' variance, ranging from 2.6 % (Macau) to 24.6 % (Slovak Republic). The relative association of equity-related factors with performance in Indonesia appears smaller than in many other countries because the scores of Indonesian students are heavily clustered together in the bottom bands. For example, while several factors such as parents' level of education, occupational status and number of books in the home were correlated with achievement scores, only two of the six variables remained significant for Indonesia after all variables were accounted for. These two factors were wealth and the index of educational resources in the home – e.g. a quiet place to study, access to a computer, reference books and a dictionary.

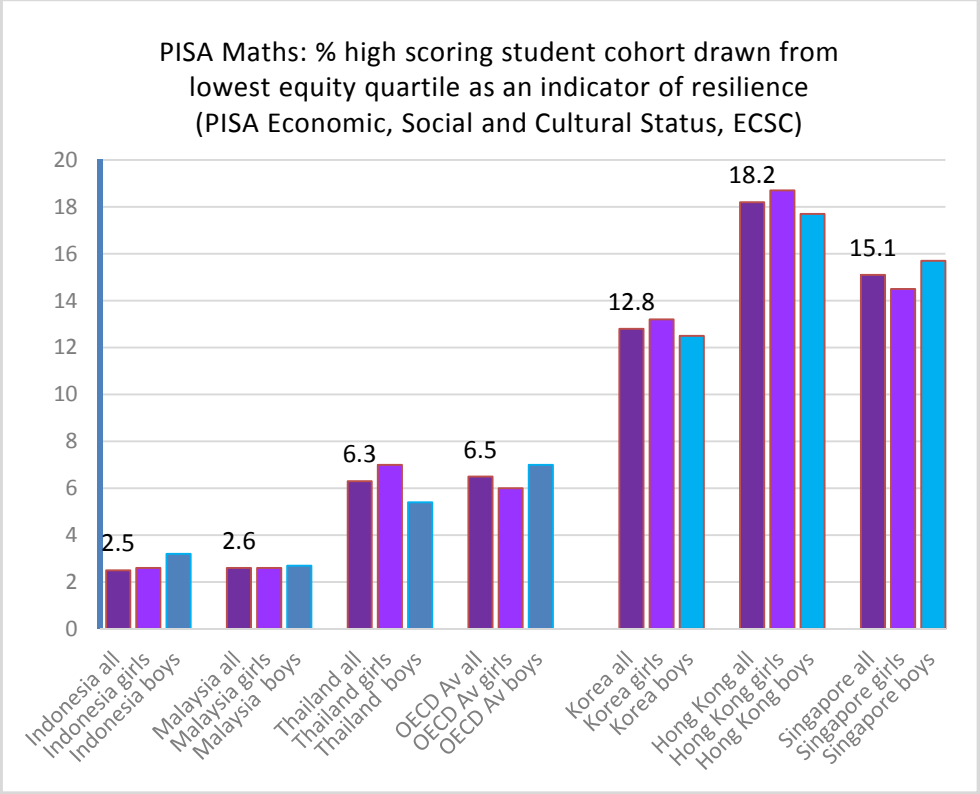
6.6 Pre-Primary attendance

Attending Pre-Primary education for at least one year was identified as a benefit across all countries. In Indonesia the benefit to a student was equivalent to an increase in PISA score of 41 points (equivalent to one year of schooling), adjusted down to 29 points after taking account of socio-economic factors, i.e. the children who tend to go to Pre-Primary are from the upper quartiles of socio-economic status. However, even discounting for that, 29 points is still a considerable advantage and suggests that expansion of Pre-Primary education should targeted to low socio-economic areas.

6.7 Resilience of students

Resilience is a term used in the PISA research to refer to the percentage of the high-scoring student cohort who come from the lowest ESCS quartile: in other words, disadvantaged students defying the odds.

Figure 59. PISA calculations of student resilience based on percentage of top-scoring students coming from quartile 1



Source: Data from OECD 2013

In a perfectly equal world, the percentage of high-scoring students would be fairly similar in all quartiles, however, there is considerable variation between countries. Some of the variation relates to the distribution of scores, e.g. high-scoring countries such as Hong Kong in which the majority of the cohort has scored at or above level 3 would be expected to have a greater percentage of lower quartile students in the top levels. Indonesia had a very small percentage of students in the top three proficiency bands so the number of students defying the odds would be small and the effects are minimal. However, the graph illustrates that working towards equity across all quartiles will be an important but challenging task ahead.

6.8 Some school level factors associated with higher performance

PISA principal and student questionnaires collect a lot of information about school management practices, aspects of school climate and teacher–student relationships. The impact of these characteristics is expressed in the difference in schools' average PISA scores between principals who answered YES or NO and is then adjusted for students' and schools' equity rating on the PISA equity scale (ESCS). The following practices were considered especially relevant to this study. Some practices were more strongly associated with higher scores than others.

Table 19. PISA Maths Indonesia – Impact of some school education management practices on school's average PISA score, adjusted by student ECSC and by student + school EDSC

School practices	Principal reported YES	Principal reported NO	Significant difference	Adjusted for student ECSC	Adjusted for student & school ECSC
School has quality assurance procedures and school improvement program	**Average score 378**	**Average score 345**	**Significant 33 points**	**Significant 8 points**	**Significant 22 points**
School uses achievement data for accountability purposes	Average score 388	Average score 372	Non signif 17 points	Non signif 10 points	Non signif 2 points
School has a standard policy for Maths, with shared resources & Professional Development for teachers	Average score 377	Average score362	Significant 15 points	Non-signif 9 points	Non-signif 2 points
School has written specifications of students' performance standards	**Average score 378**	**Average score 345**	**Significant 33 points**	**Significant 28 points**	**Significant 22 points**

Source: Data from OECD 2013

Some other aspects of school organization and school climate that were positively associated with Maths achievement in Indonesia included:

- more autonomy in school resource allocation (e.g. effective use of BOS)
- the number of extracurricular creative activities at the school (e.g. music, arts)
- the percentage of students who did *not* generally arrive late to school
- more hours being designated by the school for homework or home-study.

Surprisingly, two aspects of Indonesian schools that were negatively associated with Maths achievement included: lower student–teacher ratio (perhaps these are mainly rural schools); and the school conducting Maths lessons after school hours (perhaps reflecting that low performing schools would be more likely to offer Maths lessons after school than high-performing schools).

6.9 School type and location

Three categories of school were used for the analysis: (1) fully government funded, (2) government-subsidized private schools, and (3) fully private schools. After accounting for the variance associated with socio-economic factors (ECSC), no significant differences were found in Maths performance between the three school types. School location, however, was found to have a significant association with average school score, even after taking account of socio-economic factors. Three categories were defined for school location: city, town and rural.

Table 20. Relationship of school location, ECSC rating and average performance in Maths

	City schools Population ≥ 100,000	
	Score difference of city schools over other schools	*Score adjusted for ECSC*
Town schools **Population 3000 to 100,000**	City schools higher by 36 points Significant	Significant
Rural schools **Population ≤ 3,000**	City schools higher by 48 points Significant	Not Significant

There were no significant score differences between town and rural schools but quite large score differences between city schools and both rural and town schools. When adjusted for ECSC, the difference remained for city schools over town schools but not for rural schools, indicating the substantial overlap of socio-economic disadvantage and "rurality" on student performance in Maths. This is an important pointer for targeting interventions.

7. Key issues and challenges for improving performance

Despite a decade of investment and reforms in education, the performance of Indonesian students on PISA and TIMSS, has remained unacceptably low. Across all the tests, the majority of Indonesian students are below minimum competence on the basic skills. This means they are entering the workforce or senior secondary education with an average lag of two to three years behind their peers internationally.

Table 21. Summary of performance on international tests

	Subjects assessed	Av. score & country rank	Trend	Gender gap	Benchmark analysis
PIRLS Grade 4	Reading	428 (42/45)	**Increase**	Girls' scores signif. higher	34% below low benchmark 38% at the low benchmark
TIMSS Grade 8	Maths	386 (38/45)	No change	Girls' scores signif. higher	57% below low benchmark 28% at the low benchmark
	Science	406 (40/42)	Decrease	Girls' scores signif. higher	46% below low benchmark 35% at the low benchmark
PISA 15 years old	Maths	375 (63/65)	No change	None – data unreliable	75.7% below minmum proficiency
	Science	382 (64/65)	No change	Girls' scores signif. higher	66.6% below minimum proficiency
	Reading	396 (60/65)	**Increase**	Girls' scores signif. higher	65.2% below minimum proficiency

While the results in Science and Maths are low and not improving, Literacy while still low, is improving. The positive trend in Literacy is evidence that improvement is possible and can be sustained over time.

Summary interpretation of performance on international tests

Average performance – The mean score of Indonesian students is very low on all tests. Indonesia is near the bottom of the rank order of participating countries and is closest in overall performance to Malaysia, Colombia, Morocco and some Gulf countries. The mean scores are around one standard deviation below the OECD mean, equivalent to a lag of about 2.5 years.

Subject trends – In Literacy there is a significant upward trend on PISA which is also emerging on PIRLS (Grade 4). In Maths there has been no change in a decade of PISA or TIMSS. In Science there has been no change in a decade of PISA and a decline in over a decade of TIMSS tests.

Gender – There appears to be a significant gender gap in favor of girls across all subjects and all tests, except the PISA Maths gap 2011 which was not regarded as reliable because of the number of students who scored too low to be included in calculations of significance.

Benchmark analysis – Focusing on PISA and TIMSS which assess students just prior to the end of basic education, it appears that the majority of students are not achieving minimum competency and there are no students at the advanced level or level 6.

Critical areas to be addressed – As well as overall development, the two areas for critical attention are Maths and boys' achievement.

7.1 Targeting low performance

The immediate challenge for Indonesia is to reduce the number of students below the minimum level of competence as this has important implications for the individual students and for Indonesia's growth and national competiveness.

Improving the bottom end of the distribution does not mean neglecting to nurture high performance. Different strategies (e.g. talent development programs) can be implemented in different schools and even in the same schools and the *same classrooms*. Effectively targeting low performance requires rich assessment data from school and national tests with sufficient diagnostic information to identify the particular competencies and problems that need to be worked on, along with regular monitoring.

Effective targeting is needed at two levels: by local government to identify schools for intervention and by classroom teachers to identify students for within-class attention. Both of these need robust and meaningful data about performance beyond the information from international tests. Teachers and education officials need improved capacity and support to design, implement and use assessment information effectively.

7.2 Assessing performance in the early grades

Information about performance in the early grades is imperative to establish a successful improvement program that will ensure the foundational skills for later grades. Steps towards this could include -

- strengthening basic skills training in teachers' preservice education for the elementary school,
- support for more effective classroom assessment,
- developing specific early grades assessment instruments and learning readiness checklists for Indonesia,
- promoting parent education programs to support literacy in the home and engaging with parents on expected levels of achievement,
- establishing an effective national sampling test to monitor performance in key skills and participating in international tests (e.g. TIMSS Grade 4) to provide system level information.

With the support of development partners many districts have been implementing the Early Grades Reading Assessment (EGRA) which has been customized for Indonesia and provides broad information for teachers on the level of student reading achievement. Training to administer the tests is also a form of professional development for teachers, providing them with practical ideas for teaching reading more effectively.

The best teachers should have responsibility for teaching in the early grades. While this may seem counter-intuitive to some, i.e. more skill is required for the academic competencies in higher grades, many education systems around the world now recognize the key role of early grades teachers in establishing the foundation for basic skills and the foundation of positive attitudes towards learning that influence the entire school experience.

7.3 Improved classroom assessment within a more comprehensive assessment system

Improving and enriching classroom assessment is a goal of *Kurikulum 2013*. To improve the learning of all students, teachers need to become highly skilled in formal and informal assessment techniques so they can provide constructive feedback to students and they can capture data about progress that will inform their teaching program and approach. This is the main type of assessment that will lead to improved learning outcomes. However, teachers, principals and policymakers also need reliable system level information to benchmark what is being achieved in schools, and parents and employers need some comparative information to understand a student's level of achievement. These purposes need different tools.

A comprehensive assessment system is needed which has purpose-built tools for each different assessment level (e.g. student evaluation, school mapping, performance management). Each tool must be the best it can be in providing reliable and valid information for its purpose and be fully implemented. Filling the current gap in reliable national sampling of basic skills achievement in the primary years must be a priority to provide the data that will drive improved performance all the way through Primary and Junior Secondary. In a comprehensive assessment system, exams would be improved in scope and made more rigorous, and existing quality assurance strengthened.

7.4 Compensating for socio-economic disadvantage

The international test data show the extent to which socio-economic circumstances influence performance, as well as the practices associated with higher-performing schools. In general terms, there are three main types of interventions that can be implemented simultaneously. Indonesia already has appropriate program responses but they can be implemented more effectively to target students better.

1. Direct welfare assistance to individual students to ameliorate home background factors (e.g. access to pre-primary, scholarships, meals, uniforms, equipment, cash payments to increase the educational resources at home).
2. Targeted programs and funding to disadvantaged schools to address school level factors (e.g. educational resources; specialist teachers; better qualified and experienced teachers and principals; time for teachers to work together to develop the features of high performing schools).
3. Implementing policies system-wide which are known to be associated with improved performance for *all* students (e.g. quality assurance, using data for improvement, improving school-based management and collaborative planning, giving schools more autonomy and increasing teachers' professionalism).

7.5 Targeting boys' education

Over the past two decades, an international trend has emerged for boys to perform lower at school and university than girls, especially in literacy, and within literacy, specifically in writing. In Indonesia the gender trend on international tests appears to be generalized to Maths and Science as well.

Experts point to a range of factors in boys' socialization which appears to underlie these trends[9]. These include a low motivation stemming from perceived irrelevance of schooling, a preference for active rather than passive learning, peer culture which may be mildly or strongly anti-authority, low self-esteem and confidence, uncertainty about jobs and the relevance of school to work, exposure to anti-establishment themes and values in popular media, and weak discipline at home. Boys' lower achievement may also be related to their higher absenteeism, higher rates of suspension, earlier drop-out and disengagement from schooling even if still enrolled – so they have less exposure to teaching and less opportunity to learn.

The immediate need is for research in Indonesia to identify how widespread is the trend, how significant and what action may be needed to address the gap. The gender gap in other countries is associated with disadvantage. Indonesian research should therefore seek to answer questions such as which boys, why and what works?

7.6 Strengthening the instructional leadership of principals

Improving learning for all students requires leadership and support, and principals are the ones who must be the instructional leaders of their schools. The task can be shared of course, through a model of distributed leadership, but principals are ultimately responsible for the quality of the learning program in their schools. Their focus on learning must be *relentless*. Nothing can be more important to them on a daily basis than student learning and development.

The current reforms in the selection, appointment, preparation, continuing professional development and performance management of principals need to be implemented comprehensively, in all local governments. Similarly, supervisors need to be equally well qualified and prepared for their role in supporting principals to be effective pedagogical leaders. Paper and pencil tests of knowledge and attitudes are insufficient to judge the effectiveness of leadership.

7.7 Changing teaching practice

Given that the biggest influence on student performance after home background is at the teacher level, the low performance on international tests must be addressed through changing teachers' classroom practices. It is highly likely that in Maths for example, *teachers* themselves are unfamiliar with and unskilled in a teaching/learning approach which requires *thinking skills* – reasoning, inferring, problem solving and applying knowledge to contexts, rather than memorization and recitation as the main form of teaching and assessment. Teachers must become competent themselves in higher order thinking skills, problem solving and applying knowledge and skills to contextual situations before they can develop these skills in their students.

Changing teachers' conceptual framework and classroom practices should capitalize on systematic implementation of the reforms which have been introduced, at all stages from recruitment and pre-service to induction and continuing professional development. However, it may also require a shift in the mindset of policy-makers from programs which develop teachers as individuals, one by one (e.g. through access to qualifications or in-service), to programs which develop *the learning community within the school*. School improvement literature of the last two decades highlights building the *social capital of the school* as an effective means of transforming and sustaining good teaching practice.[10]

7.8 Having a clear goal

Indonesia faces three major challenges. One is to systemically reduce the percentage of students below the low benchmarks. The second is to nurture, extend and develop students who have acquired basic skills to think more critically, reason and solve problems to become high performers. Thirdly, these tasks must be approached in such a way as to ensure equity. This should become the objective of all levels of government.

The first step in facing these challenges is for all levels of government to have valid and reliable data which accurately reflects what students know and can do. The most critical data must be gathered from the primary and lower secondary grades. International benchmarks provide reference points but locally-derived diagnostic testing is needed for use at the classroom level. The proposed Indonesian National Assessment Program (INAP) would be an appropriate tool for this purpose. There are also other options which could be

explored. However, whatever decision is made, the improvement strategy needs reliable tools for assessment and monitoring of achievement.

Schools should set their own realistic targets for improvement, recognizing current levels of performance (e.g. to reduce the percentage in the lowest performance band by a stated % and to increase the percentage in the higher bands by a stated %) and they must be supported in designing and implementing their individual improvement program. It is highly relevant to note that one of the factors associated with higher performance of Indonesian schools on PISA was schools having an improvement plan.

7.9 Urgency for a national focus on Maths

Maths is the area with the highest percentage of students not achieving minimum competence by the end of basic education, and this low performance appears to be entrenched. This makes it a significant target for improvement. Acknowledging the problem at the highest level may be needed to provide the motivation and political will to spark and sustain a comprehensive program to improve Maths teaching and Maths performance nationally.

It is acknowledged that Literacy is at least equal in importance to Maths as a foundational skill as it is language that mediates learning. However, on the international tests, Literacy is improving, while Maths is not. Good teaching practices in Maths at the Primary level will readily spill over to other areas of the curriculum. At Junior Secondary level, Indonesia already has a strong Maths Teachers Association that could be empowered to take a leading role with teacher education institutions, quality assurance institutes (LPMP) and others in developing provincial and local programs. The Maths strategy should have an action research approach so that information about what works in classrooms can be quickly tested in a range of contexts and generalized.

7.10 Monitoring the impact of *Kurikulum 2013*

Kurikulum 2013 has been developed in part to address gaps in curriculum and students' lack of experience in applying Mathematical knowledge and processes to contextualized problems.

PISA researchers point out, however, that it is not just the content of the curriculum which is important, but the *process* of teaching it, which makes a difference in student performance. Monitoring of *Kurikulum 2013* must focus most clearly on how teachers are teaching and assessing, not just whether teachers are adapting their lesson plans to new content or whether teachers can pass a knowledge test about the new curriculum. The issues of pedagogy and assessment are addressed more comprehensively in the chapter on curriculum.

7.11 Improving efficiency of expenditure

From an analysis of the performance and education expenditures of the 63 countries participating in PISA, OECD researchers conclude that beyond a minimum level of expenditure, there is no statistically significant relationship between country spending on education and average performance on the tests. *How* countries expend their funds matters as much, if not more, than the amount they spend. This is one of the key issues for Indonesia and is a recurring theme in the Background Study. Spending more, to do more of the same, will not deliver the desired improvements. The lack of improvement in Maths and Science over more than a decade is strong evidence for this conclusion.

8. Recommended policy directions for consideration by government

Education economist Hanushek who has been tracking PISA trends in both developing and developed countries suggests an improvement strategy to improve PISA scores, and improve national productivity should: "aim more at the top end and the bottom end, or both. It is important to look at the distribution of skills within countries and how this interacts with a nation's technologies. Improving both ends of thedistribution is beneficial and complementary. The importance of the highly skilled is even more important in developing countries that have scope for imitation [e.g. Indonesia in the short term] than in developing countries that are already innovating".[11]

Because the results in Maths and Science have not improved in a decade of reform and investment, the **key policy direction must be to acknowledge the fact of low performance, commit to improvement in student acquisition of the basic skills tests at both end of the continuum, and monitor performance against the international benchmarks.** The following actions are proposed for consideration by government.

(i) Establish a **high level commitment to improving the basic skills**, including a plan of special interventions for disadvantaged and rural schools matched to needs. This could include a special focus on Maths through a National Maths Strategy, inviting provinces, districts and schools to also prepare a Maths Strategy.

(ii) **Enhance the current assessment of basic skills in primary and junior secondary by implementing a national sample testing program (INAP)**; and maintain and expand the current international testing program to include the TIMSS Grade 4 tests in Maths and Science. (Also see the chapter on national exams).

(iii) **Maintain a sharp focus on learning by prioritising improving teaching practice**, in all pre-service and in-service development programs, establishing learning communities and developing principals' instructional leadership capacity locally.

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[11] Hanushek E. and Woessmann L (2012): ibid.

Chapter 7. Early Childhood Education and Development

This chapter focuses primarily on the Education and Early stimulation (ECE) aspects of Early Childhood Development for the 3-6 year old age group which fall under the responsibility of the Ministry of Education and Culture. In relation to the concept of Holistic Integrated ECD, this chapter focuses on the role and contribution of Education and Early Stimulation within this broader context.

The chapter documents the main achievements in Early Childhood Education and Development in Indonesia and identifies the remaining challenges to providing good quality Early Childhood Education and Stimulation (ECE) services to all. These challenges are discussed in four related aspects: How to improve access and make it more equitable? How to improve quality of services? How to make coordination more effective? Finally, how to improve funding for this sub-sector. It concludes with a set of policy directions to be considered for the National Medium Term Development Plan: 2014-2019 (RPJM-N: 2014-2019). These recommendations include: i) Prioritizing most disadvantaged groups by working closely with other community development programs to increase and equalize access, ii) Promoting the meeting of National Standards, especially by improving capacity of teacher and supervisor to raise quality; iii) Clarifying role and responsibilities of MoEC in implementing HI-ECED regulation and iv) exploring cost-sharing opportunities for the ECED sub-sector financing.

1. Why Indonesia should prioritise its investment in ECED

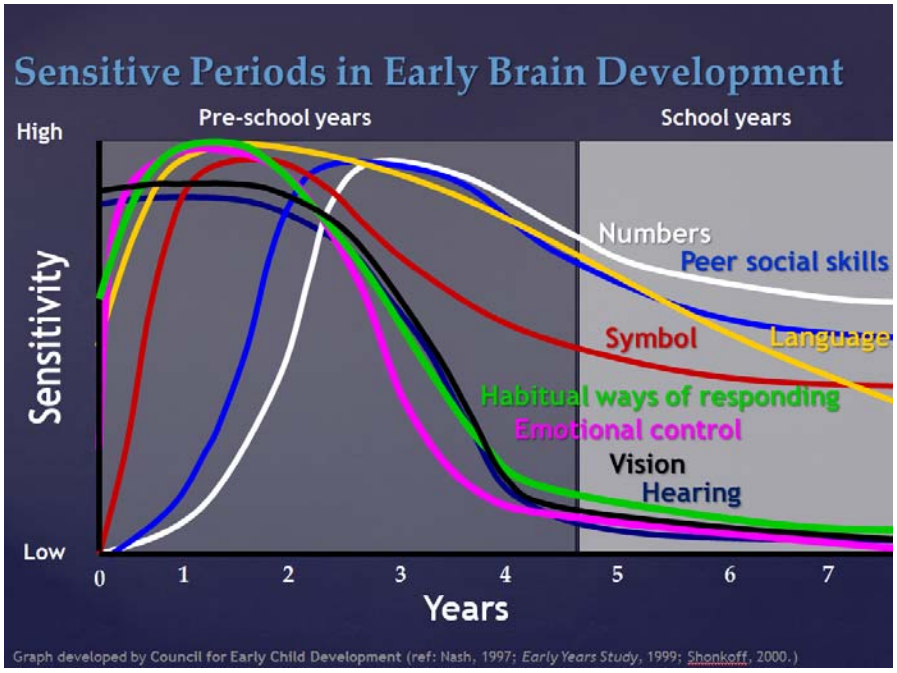
1.1. International evidence on the importance of investing in Early Childhood Development

International evidence demonstrates the importance of the early years for a child's development. The central nervous system, brain cells and neural pathways are established during the period before a child is born until their eighth birthday (Figure 60). This critical period of brain development lays the foundation for a child's future trajectory or pathway through life (Irwin, Siddiqi, and Hertzman 2007). Although children's later experiences can still change that pathway, development in early childhood may affect health, behaviour, and learning outcomes for years to come (Walker et. al, 2011, Grantham-McGregor et al. 2007; Irwin, Siddiqi, and Hertzman 2007; Mustard 2007).[1] Compelling evidence from the health sector indicates that chronic life-threatening conditions such as diabetes and heart disease are influenced by adverse environmental beginning in the prenatal period (Barker 1990; Halfon and Hochstein 2002). If children's early learning, growth and development are promoted through holistic approaches (Shonkoff et. al 2012), then in their later years they are more likely to lead healthier, more engaged, productive, and successful lives.[2]

[1] Walker SP, Wachs TD, Grantham-McGregor S, et al. Inequality in early childhood: risk and protective factors for early child development. Lancet 2011; 378(9799): 1325-38.

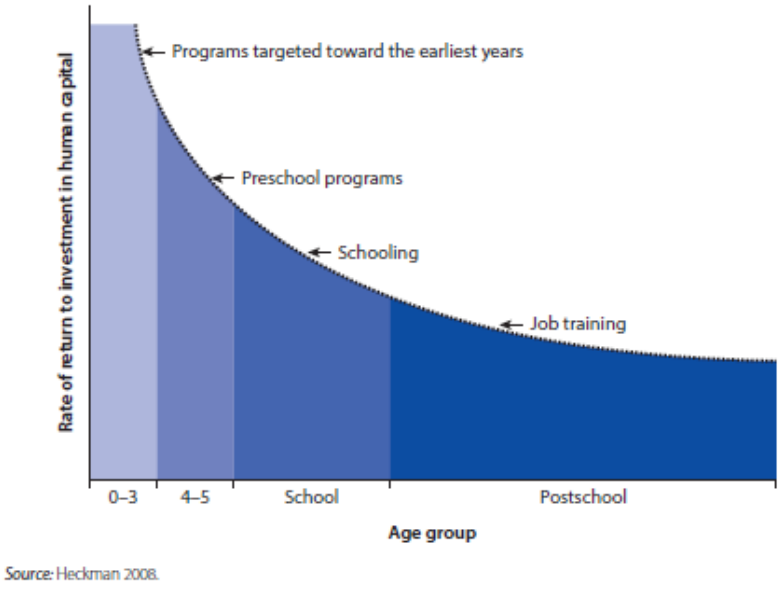
[2] Shonkoff, J., Richter, L., van der Gaag, J., Bhutta, Z. 2012. An integrated scientific framework for child survival and early childhood development. Pediatrics 129(2): 460-72.

Figure 60. Brain Development



Investments that support early childhood development have the potential to deliver large benefits. The returns to investments in early childhood development and education are likely to be significantly larger than investments in education and training made later in life (Figure 61). This is partly because of the ability of these early investments to positively influence patterns of brain development but also because early learning makes it easier for children in later life to pick up further skills. Findings from studies that 'skills beget skills' and 'motivation begets motivation' provide a strong incentive for countries to invest in early childhood education and development (Heckman 2008, p. 290).[3]

Figure 61. Rates of Return of Human Capital Investment



Source: Heckman 2008.

[3] Also see Naudeau, S, N. Kataoka, A. Valerio, M. J. Neuman, L. K. Elder. 2011. Investing in Young Children: An Early Childhood Development Guide for Policy Dialogue and Project Preparation. World Bank, Washington, DC.

Research consistently shows that returns on these investments are likely to be greatest for the poorest and most disadvantaged children. Children who have the least family support for their early development are likely to benefit the most from ECED services. Where services are provided to these groups it is likely to reduce inequalities in childhood development and education outcomes more broadly. In this way early childhood development programs are among the most compelling policy tools for fighting poverty and reducing inequality.

1.2. ECED can support higher achievement in later education

The low quality of education remains as a significant challenge in Indonesia. In the PISA[4] learning assessment, Indonesia continue to perform poorly and compares unfavorably with other middle income economies and East Asian neighbors. Especially worrying is the finding that over half of all students in Indonesia were assessed to have reached only the lowest international benchmarks in mathematics and reading. For example, in 2012 three-quarters of Indonesian students score at level 1 or below in mathematics. Students scoring at this level are only able to do 'very direct and straightforward mathematical tasks, such as reading a single value from a well-labeled chart or table.'

ECED has the potential in bolstering later achievement. Evidence from a recent study in Indonesia highlights the important role that ECED can play in tackling these remaining challenges in the education sector. Figure 62 shows the test scores of a sample of primary school students, in a selection of poor villages in Indonesia, broken down by age and whether they had previously attended ECED services.[5]

The results show that:

- Children who do not attend any ECED services (playgroups or kindergartens) score lower at all ages. The gap in test scores ranges from 14 percentage points when children are age 6 to 10 percentage points when children are age 9
- The gap in test scores does not diminish even after 4 years of primary school which is the average amount of time children have been in Primary School by age 9. – This is suggesting that the impacts of ECED continue to be evident several years later

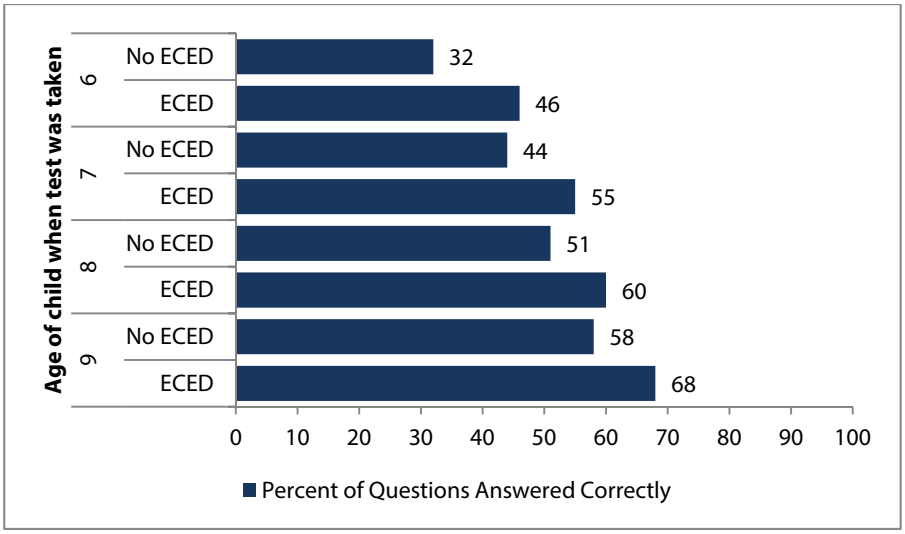
The association between ECED and improved learning has been found in a number of other countries. The recent OECD PISA assessment showed that students reporting pre-primary school attendance scored approximately 0.5 standard deviations higher in mathematics at age 15, a difference equivalent to more than one year of schooling.[6]

[4] PISA: Programme for International Student Assessment

[5] The test consisted of three components: Bahasa Indonesia, mathematics and a test of cognitive development modelled along the lines of the Ravens Test.

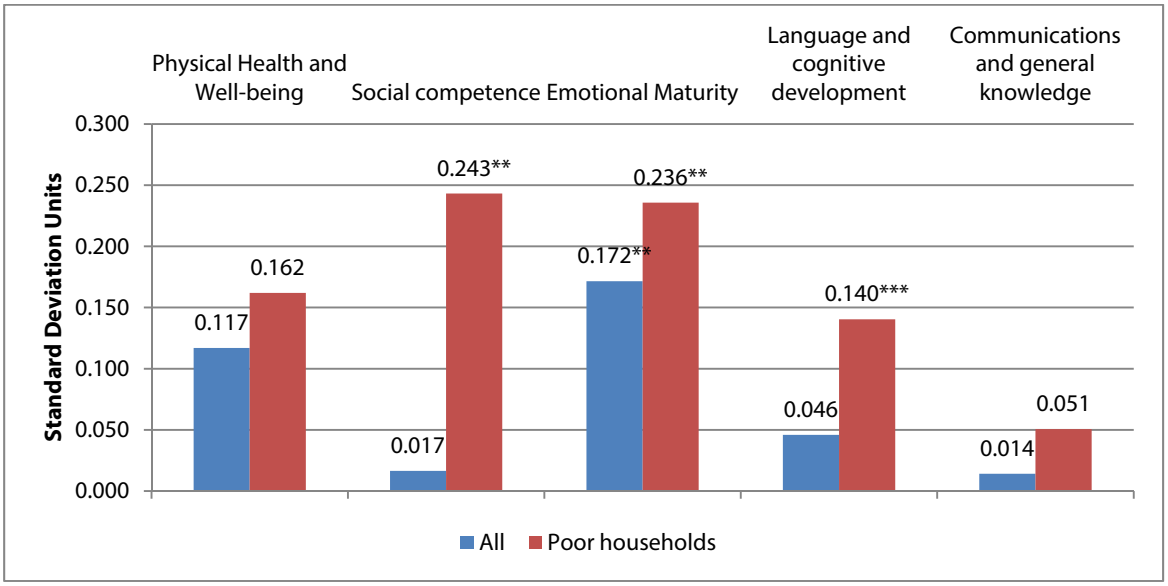
6 OECD, PISA 2012 Results in Focus, 2013

Figure 62. Test scores in Primary school based on ECED attendance



The provision of ECED services has also been shown in Indonesia to have narrowed inequalities in early childhood development between poorer and wealthier children. An impact evaluation that was undertaken as part of the Early Childhood Education Project explored whether the project had a differential impact on the poor (Figure 63). On a number of important domains of child development the evaluation found that having ECED services established in their village had a larger impact on children from poorer households including impacts on their language and cognitive development, social competence and emotional maturity.

Figure 63. Differential Impact on the poor in important child development outcomes



Source: World Bank Impact Evaluation of Early Childhood Education and Development Project 2013.

Notes: Figure shows results from difference-in-difference analysis which compares trends in development outcomes in project villages to those in non-project villages. Height of the bar reflects progress by those in project villages compared to those in non-project villages. Height is measured in standard deviation units.

2. Overall Achievements

Early Childhood Education and Development (ECED) programs provide basic social services in Education and early stimulation, primary health, nutrition, parenting program and child protection. In Indonesia, the program has so far been implemented through services provided at locations such as *Posyandu* (*Integrated Service Post*), TPA (*Day Care Center*), KB (*Play Group*), ECED Post, TK (*Kindergarten*), Raidatul Atfhal (*Islamic Kindergarten*), and BKB (*Under-five Child Family Development*) with target groups and activity focus as contained in the Table 22. The programs are developed by a number of ministries/agencies including the Ministry of Health, the Ministry of Education and Culture, the Ministry of Religious Affairs, the National Family Planning Coordination Board, and the Ministry of Social Affairs.

While the focus of this chapter is on services provided to the 3-6 year age category, it is important to recognize progress in other aspects of early childhood development. Maternal mortality has fallen from 340 to 220 deaths per 100,000 live births (between 2000 and 2010) but remains far above the 2010 average rate of 83 per 100,000 for all developing countries in the East Asia and Pacific (EAP) region. Likewise, between 2000 and 2010 the mortality rates for children under 5 years of age have fallen from 54 to 35, and the infant mortality from 38 to 27, per 1,000 births, but the rates remain far above the average for all developing countries in the EAP region in 2010, which stood at 24 and 20, respectively. Births attended by skilled health staff, rates of immunization, and rates of access to improved sanitation facilities also remain behind the region's developing country average. Furthermore, an estimated 42 percent of rural households have children, whose growth is stunted, putting these children at risk for long-term cognitive deficits, emotional and behavioral problems, and low school achievement.

Table 22. Type of Services

Type of Services	Definition[6)]
Primary Health Care	*PUSKESMAS*: Community based health service available in sub district
Satellite Primary Health Care	*PUSTU:* Community based health service
Maternity Village Post	*POLINDES:* Village based service for expecting mothers
Hospitals	Facility based for community health
Kindergarten/ *Taman Kanak Kanak* (TK)	Covers children age 5-6, classified as formal school and children are required to attend 5 times a week for minimum 2 hour/day
Playgroup/ *Kelompok Bermain* (KB)	Covers children age 3-4, classified as non-formal school and children are required to attend minimum 3 times a week for 2 hour/day
Day Care/ *Tempat Penitipan Anak (TPA)*	Covers children age 0-6 with minimum 8 hours service per day, 5 days a week, classified as non-formal ECD service
Other ECE Service/ *Satuan Paud Sejenis (SPS)*	Covers children age 0-6 classified as non-formal ECE service, opens minimum 2-3 times a week with minimum 2 hour per day
Day Care Center	Covers children age 0-6 with minimum 8 hours service per day, classified as non-formal ECD service
Faith-based kindergarten: *Bustanul Athfal* (*BA, Raudhatul Athfal (RA)* and *Tarbiyatul Athfal (TA)*	Covers children age 5-6, classified as formal school and children are required to attend 5 times a week for minimum 2 hour/day. RA, BA and TA similar to TK with additional religious content.
BKB (Parental Education Program)	Home/cluster based visit for parents who have children U5, two hour per visit once a week
Integrated Service Post (*POSYANDU*)	Open once a month for children U5 for weighing, supplementary feeding and immunization

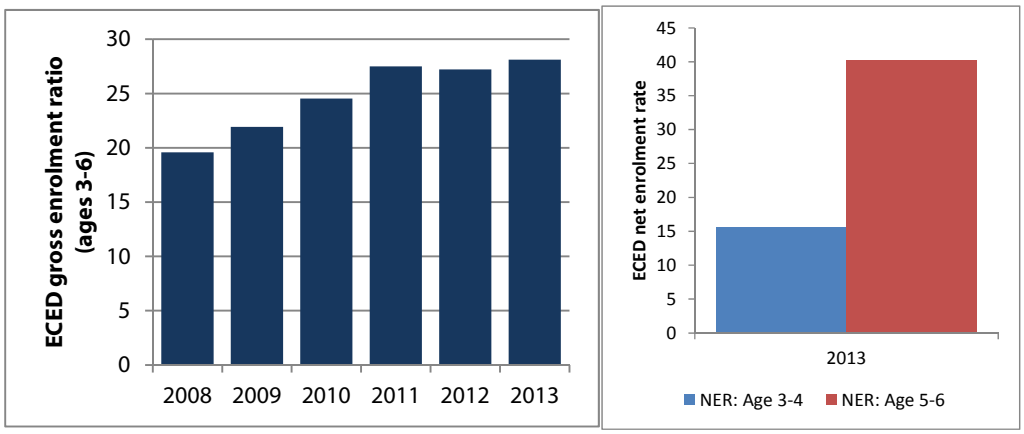
3. Remaining challenges and opportunities

3.1. Disparities in Access to services

ECED enrolment rates have risen steadily over the last five years (Figure 64) but disparities in access amongst socio-economic groups have persisted (Figure 65). In 2013, 28% of all 3-6 year olds were attending some kind

of ECED compared to only around 20% in 2008. This translates into an additional 1.82 million children attending ECED services in 2013 compared with 2008. Enrolment rates in ECED area differ significantly by age. While approximately 40% of 5-6 year olds were enrolled in some form of ECED in 2013 only 16% of 3-4 year olds were. In light of international research on the benefits of intervening early in development, the low numbers for children below age 5 is of concern.

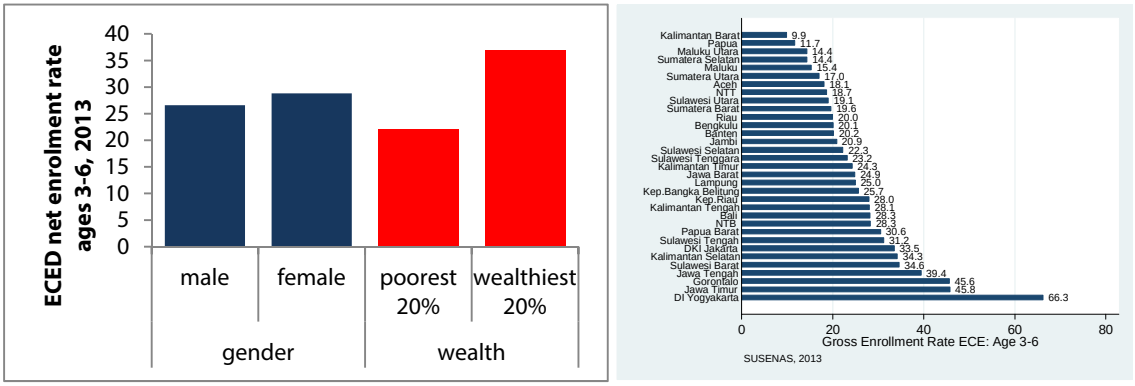
Figure 64. ECED gross enrolment rates (3-6 age group), 2008-2013



Source: Susenas 2008-2013

Households with higher incomes tend to send more of their children to ECED than poor households. Enrolment rates amongst the wealthiest 20% of households are approximately twice as high as rates for the poorest households (Figure 65). These differences are far higher than those seen in primary and junior secondary school but similar to those seen in senior secondary. Moreover, the gap in ECED enrolment rates between poor and non-poor households has persisted since 2008.

Figure 65. Disparities in access to ECED, 2013



Source: Susenas 2013

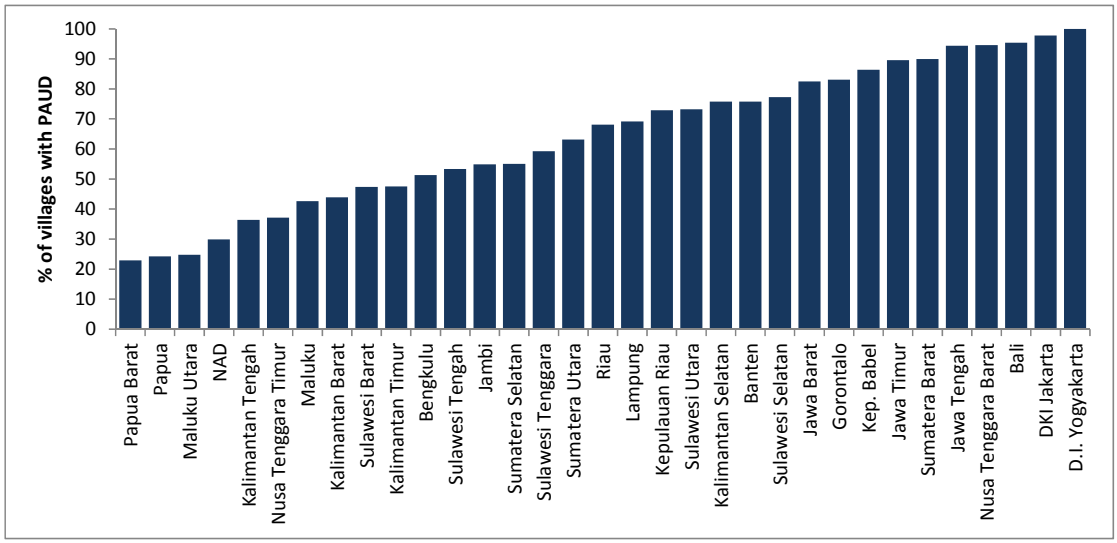
Disparities in access to ECED services are also linked to location, gender and socio-economic status (Figure 65). For example, 66% of children in the 3-6 year age group are enrolled in ECED services in Yogyakarta compared to only 10% in Kalimantan Barat. Figure 65 also shows that slightly more girls than boys attend ECED and children from wealthier households are more likely to be enrolled. As a result of these accumulated disadvantages, by the time many of these children begin primary school, they are already far behind in essential areas of development and school readiness.

These disparities in ECED attendance and particularly the low participation of children from poorer households are driven partly by demand-side constraints. These include: the temporary migration of families, including their young children, to the field or plantation sites during harvesting time, the opportunity cost for

parents to take their children to ECED services or simply parents' low awareness on the importance and benefit of ECED for their children's development.

However supply side-constraints also play a part in explaining the disparities in ECED attendance. Figure 66 below shows the wide disparities across Indonesia in the percentage of villages that have an ECED center. For example, only about one in five villages in Papua have an ECED center; in contrast every villages in Yogyakarta has a center.

Figure 66. Proportion of villages with an ECED facility, 2012



Source: MoEC

The type of service that children attend before primary school is also linked to family wealth. For example, the demand for kindergarten (TK) among the poor is not as high as among the non-poor. This may be due to the higher cost of TK, and the ability of households to enroll their children in primary school at no cost. According to Susenas 2012 data, 40% of children age 6 are already in primary school, as well as a small percentage of 5 years old—although primary school in Indonesia is intended to begin when children are age 7. The fact that public primary schools do not charge fees, combined with the per-student funding allocation for the BOS (School Operation Fund) grants for primary schools, provides an incentive for both parents and schools to enroll young children in primary school even when they are still pre-primary-aged. Because in many areas there is also significant late enrolment in schools, the six-year-olds (and even some 5-year-olds) may be in a class with much older children, attempting to cope with participating in a curriculum and pedagogy designed for seven year olds. Because primary school teachers currently lack competencies in child-centered, active-learning pedagogy, 5- and 6-year-olds who are enrolled in primary school because of lack of local, affordable ECED programs are at risk of having a educationally and emotionally negative first experience in school. Such an experience at the very beginning of primary school is likely to have long term negative impact.

Supporting the establishment of ECED services in poor and remote villages has the potential to address disparities in ECED attendance and improve education outcomes significantly. The government has identified 27,000 villages without any ECED services, representing 35% of total village in Indonesia. These villages are usually located in 3 T areas: *Tertinggal, Terdepan/ perbatasan dan terluar* (disadvantaged, border and remote). Focusing access expansion in these areas can be an option to target limited government funding, especially when one considers the evidence that poor children gain the most benefit in terms of child outcomes from attending ECED services. In reaching out to these disadvantaged groups, a synergy with other poverty reduction programs will provide many benefits since these programs tend to have comprehensive targeting mechanisms and rely on community facilitators. These community facilitators could be used to socialize communities on the importance of ECED and to link them to other funding opportunities.

3.2. Concerns about the inadequacy of the quality of ECED services

The Quality Assurance System – Is it working?

An effective quality assurance system is vital to ensure that the ECED services provided to children are of good quality and support better child development outcomes and school readiness. Over the last five years the building blocks of an effective quality assurance system have been put in place. These include:

- The ECED national standards (Permen 58/ 2009)
- Pusat Penjaminan Mutu Pendidikan (Education Quality Assurance Body) especially the ECED, Non-formal and Informal Education Unit[7]
- The establishment of ECED supervisor positions at district level
- On-line data monitoring system coordinated by the Directorate General PAUDNI
- Accreditation system of ECED services, including Badan Akreditasi PAUD(NI) and their assessors
- Institutions at the regional, provincial and district levels that could play a stronger quality assurance role[8].

While the building blocks are in place, they are not yet working fully as a system and the coordination is still unclear. There is still a significant gap between the issuance of the national standard – meant to guide the level of quality – and its implementation. Supervisors, as the main agent for quality assurance, (through monitoring, evaluation and reporting to the district government) are seriously constrained by their capacity and competency. In short, there is no system where actual condition of the services can be monitored and data evaluated and reported to the respective authority to conduct improvement actions.

The Gap between National ECED Standard and its Implementation

A good reference to use when discussing about quality of ECED service is the existing Standard for Early Childhood Education (2009), where target it set for key quality components: i) Standards for Developmental Achievement in Early Childhood for various developmental domain and for each age groups; ii) Standards for Teachers and Education Personnel (qualification and competency); iii) Standards for content, process and assessment (program structure, length of service, planning and implementation of activities, children assessment); and iv) Standards for Facility, Management and Funding.

The national ECED standards provide a strong basis for both government and community to recognize the criteria of 'good ECED services'. However, even though the standards were issued in late 2009, the socialization of these standards to the district level has been limited. Wider socialization and support for their implementation are the next logical steps to ensure that they are used to improve the quality of all ECED services. Providing incentive for districts or services who are enforcing the standard can be introduced to boost the meeting of the standards.

Mapping Quality of ECED Services using ECERS-R

As part of the Impact Evaluation of ECED project, an international assessment known as the Early Childhood Environment Rating Scale (ECERS-R) was administered in 2013 in 9 sample districts of the project to gain a better understanding of the quality of ECED services[9] The instruments were administered to all types of ECED services in the sampled villages, including TK and non-project Play Groups.. The instrument consists of 7 sub-scales that are – interestingly - closely linked to the ECED National Standards: i) Space and Furnishings, ii)

[7] Education Quality Assurance Body is part of Agency for Human Resource Development and Education Quality Assurance (Badan SDMPPMP)

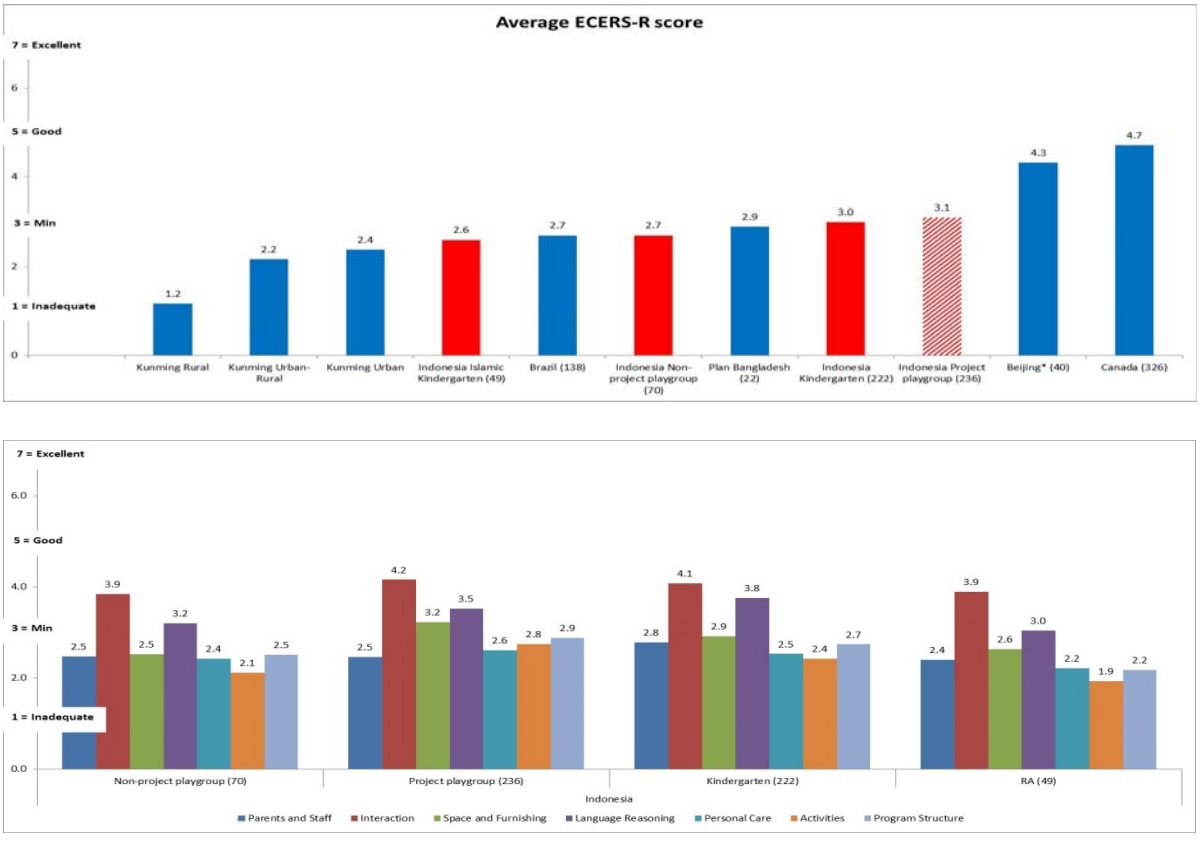
[8] Pusat Pengembangan Pendidikan Anak Usia Dini, Nonformal dan Informal (P2-PAUDNI), and Balai Pengembangan Pendidikan Anak Usia Dini, Nonformal dan Informal (BP-PAUDNI) and Balai Pengembangan Kegiatan Belajar (BPKB), Sanggar Kegiatan Belajar (SKB).

Personal Care Routines, iii) Language – Reasoning, iv) Activities, v) Interaction, vi) Program Structure and vii) Parents and Staff.

While the results are not representative of Indonesia as a whole they show that the quality of Indonesian ECED services is low (Figure 67). Indonesian services score in the 'minimally acceptable' range of the ECERs score (a score of 3 out of 7) which indicates the need for further improvement. Indonesia is not alone in minimally acceptable levels of ECED quality – services in Bangladesh, Brazil and parts of China score equally poorly or worse. In part these low ratings reflect the strict nature of the ECERS rating scale: notice that even services based in Canada do not score highly enough to reach the 'good' range of the ECERS score (a score of 5 out of 7).

The average ECERS score masks a great deal of variation across individual sub-scales of the ECERS score. These sub-scales cover a variety of aspects of the services. Indonesian services – particularly those supported through the ECED project – score better on the aspects of 'interaction' and 'language and reasoning' than on other subs-scales measured by the assessment. This demonstrates that in some areas Indonesia has already established a good basis while in others further efforts are needed to improve the quality of ECED services.

Figure 67. Quality of ECED services in selected districts, 2013



The quality of ECED educators and personnel the gap in meeting the Standards of Qualification and Competency

According to official 2012 data[10], the number of registered ECED teachers/ educator is 353.266 (267,576 TK and 85,690 Play Group)

[10] Buku Data PAUDNI 2012. In the meantime, the DAPODIK data recorded 692,546 of ECED teacher/educator registered.

The Qualification (academic degree) a teacher or teaching personnel should have is regulated through the Ministerial Decree of 16/ 2007 and in Ministerial Decree of 58/ 2009

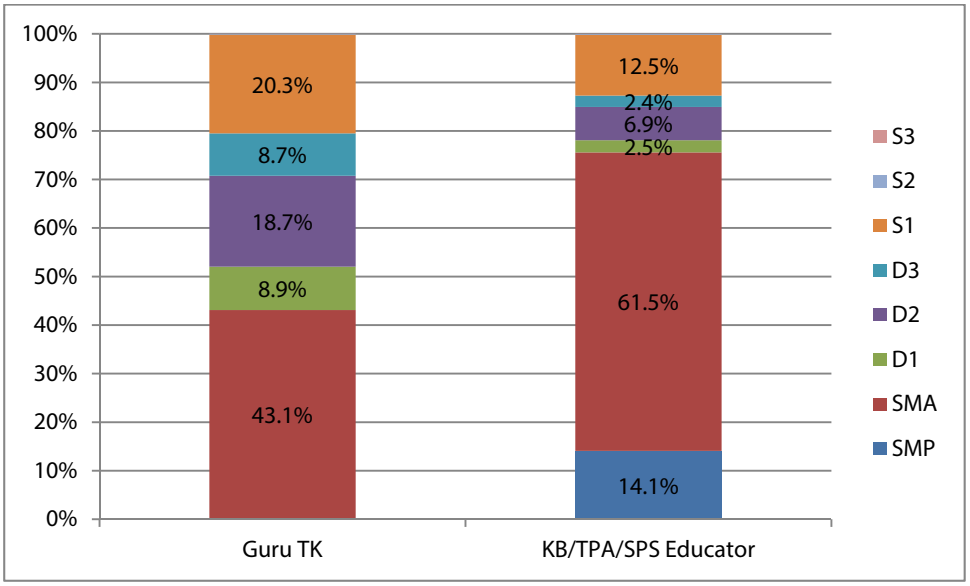
Box 17. Qualification for personnel in ECED services

Position	Qualification
Teacher in 'Formal' ECED Service: TK/ PAUD/ RA	Bachelor Degree (S1) or 4 year Diploma (D4) in Early Childhood Education or Psychology
Assistant Teacher (*Guru Pendamping*)	2 year Diploma (D2) or Senior High School with training certificates on ECED
Caregiver (*Pengasuh*)	Senior High School

While the standards have defined the qualifications required of ECED educators, a large proportion of educators in the system fall below them (Figure 68). Comparing the 'ideal' qualification standard and the existing education background shows that there is a significant backlog of under-qualified teachers. For example, 80% of TK teachers do not have the S1/D4 qualification required under the regulations. Moreover, the majority of non-formal ECED educators have no formal qualifications beyond senior secondary school despite educators requiring an S1/D4 qualification.

Figure 68 shows the percentage of currently registered TK and Play Group teachers/ educator with various qualifications. The requirement to have S1 (Undergraduate University Degree)/ D4 (HI Diploma degree) is met by 20.3% of the current TK teachers and only 12.5% of Play Group Teaching Personnel. A high percentage remains of teachers still having SMA (Senior High School) education: 43.1% of TK teachers and 75% of Play Group Teachers.

Figure 68. Qualifications profile of ECED Educators



Source: Direktorat P2TK PAUDNI Ditjen PAUDNI (summarized based on qualification requirement for teacher in the Decree of Minister of Education No.12 of 2007, No.16 of 2007, No.58 of 2009 and Minister of National Apparatus No.14 of 2010)

SMP and SMA refer to Junior and Senior Secondary School respectively. D 1 – 4 is Diploma degree from Tertiary Education, ranging from 1 – 4 years. S1, S2, S3 refers to Undergraduate, Master and Doctoral University Degree respectively.

To meet the standard, most ECED teaching personnel are pursuing their degree in various higher education institutions using their private funds. The Open University is the most popular option. In addition, Directorate P2TK PAUDNI (Development for Teacher and Teaching Personnel for ECED, Non-formal and Informal Education) facilitates the 'acceleration program' which allows current ECED teachers to complete their study

more quickly than regular students because these universities have agreed to recognize their prior learning (and experience). This program is currently implemented in a few universities. Support from Directorate P2TK is very limited.

In their 2013 budget, for example, they provided scholarships for 6,176 TK teachers to pursue degree programs in various institutions and supported 500 Play Group Teachers to attend acceleration programs.

These S1, D4 or even acceleration programs are not only limited in number but are also logistically challenging for many ECED teachers/ teaching personnel who live in rural and poor areas. The other concern about these programs also is the inadequacy in providing practical experience for its students. This is an emphasis in most countries—and from US research, there is little difference in ECED child outcomes based on whether teachers' have degrees or not. The emphasis now is ensuring the quality of the degree program

ECED Teachers and Teacher Personnel are also required to meet the standard of various aspects of **Competency,** including Pedagogy, Personality, Social, and Professional.

For improving the competency, Directorate P2TK's main program is the 3 level short training (*Diklat Berjenjang*), Basic, Intermediate and Advance. Selected local organizations, such as HIMPAUDI and IGTKI (ECED teacher association), are provided a block grant to organize short courses for certain number of participants using curriculum and other guidelines provided by P2TK.

The coverage of this program, however, is very limited. Between 2011 and 2013, some 42,000 teachers/ educators completed the basic training (where 7 only 14,391 teachers/ educators completed the Basic Training and 668 for the Intermediate trainings using P2TK funding. In the meantime, to meet the high demand (and need) some local government cover the cost of basic training for 1,117 teachers and using their private funds (USD 80), another 26,210 teachers completed the Basic Training. If the training capacity remains at this rate, it will take almost a decade for even all the currently registered teachers to complete only the Basic training. Furthermore, the local capacity to implement training (through Training Provider) is not evenly distributed: 8 (out of 33) provinces have training providers that can train 32,000 participants, whereas the capacity of similar organization in the remaining 25 provinces was only able to train 10,000 participants.

With the government target of establishing one ECED service in every village, other programs to improve teacher competency are urgently needed.

Training on the competencies required by ECED educators is also offered in a number of other institutions. Some educators participate in *magang* (semi apprenticeship) schemes where they spend a period of time observing and learning from good quality ECED. Teacher cluster meetings, or *kegiatan gugus*, at the sub-district level also provide a forum for teachers to share knowledge on a regular basis. In addition to these activities ECED educators can enroll in 50 higher education institutions currently offering ECED study programs that aim to raise educator competency. It is important to ensure that all the study programs observe the competency standards outlined in the National Standard and incorporate them in their curriculum.

The quality and impact of the various training programs aimed at improving the qualifications, competencies, and overall quality of ECED educators has not been evaluated. This makes it difficult to assess the extent to which these activities contribute to better teacher competency and ultimately improved child development outcomes. However, there is a recognized need to improve the practical skills, rather than just the theoretical knowledge, skills of ECED educators. This will require professional development forums such as *magang* and cluster meeting (*gugus*) to reassess current learning materials and shift their focus away from the current emphasis on theory. The focus on the practical skills of the teacher is also relevant to child-centered focus of the 2013 curriculum.

The under-utilized role of ECED Supervisor in Quality Assurance

Supervisors (*Penilik)* play a key role in monitoring the quality of ECED services at the district level. Regulations on their role stipulate that they hold the responsibility and authority to conduct quality assurance and

evaluate the effectiveness of non-formal and informal ECED services.[11] Despite their central role in quality assurance and supporting quality improvement there are a number of limitations:

- **Insufficient capacity to conduct monitoring and evaluation effectively.** The very limited number of *penilik* and the lack of logistical support have severely restricted the ability of *penilik* to visit ECED centers within their work coverage. This is exacerbated by the lack of knowledge, skill or even instrument for effectively conducting monitoring. Furthermore, there is no system to make use of the information collected by supervisor to inform district policy on ECED.
- **Low level of knowledge on ECED. Supervisors often lack the skills required to cover ECED services**. Very few supervisors, if any, have a background in early childhood education and the importance of play-based learning to support age-appropriate stimulation. It is therefore unrealistic to expect them to provide meaningful coaching and other support to the teachers without further training.
- **Unattractive employment conditions.** The salary is not competitive when compared with primary education supervisors (*pengawas)* and prior to the issuance of Perpres 63 in year 2010 they are subject to an earlier pension age (56) compared to primary education supervisors (60).
- **Unclear reporting lines**. While supervisors are considered as district office staff, they are stationed at the sub-district level (kecamatan) but have no clear reporting line to the kecamatan education office which is responsible for monitoring their performance.

A more Aligned Curriculum of ECED and the Early Grades of Primary School

The age-specific development milestones in the ECED standards, especially in the Cognitive and Language domains, provide a strong basis for the new ECED curriculum particularly because they eliminate the dichotomy between formal and non-formal services. In addition, it is important for the ECED curriculum to be aligned with the new curriculum for primary curriculum (Curriculum 2013). In this way ECED can contribute directly to school readiness and allow children to transition smoothly into primary school. This will also address the concern about the increasing number of children below age 7 entering primary school where child-centered approach is kept consistent for the teaching of these young children.

3.3. Coordination: Early Childhood Education within the Framework of Holistic and Integrated ECD

Multiple providers of Essential Needs of Children

This chapter focuses primarily on the Education and Early stimulation (ECE) aspects of Early Childhood Development for the 3-6 year old age group which fall under the responsibility of the Ministry of Education and Culture. However, children have other essential needs in order to achieve their full potential, which includes health, nutrition and protection. The integrated provision of all these services for children means that children, and families, can receive these essential needs at one point of service, or several but well-coordinated service points, within their village. From the point of view of the service providers, efficiency can be made through coordination, since they are serving similar target group.

Currently, the responsibility for delivering these different aspects fall within various Ministries and agencies: including the Coordinating Ministry for People's Welfare, State Ministry for Women's Empowerment, Ministry of Health, Ministry of Education and Culture, Ministry of Religious Affairs, Ministry of Social Affairs, BKKBN (National Family Planning Coordination Board) and Ministry of Home Affairs. Within each of these ministries there are often several departments involved in managing ECED services. Coordination is challenging because often there is no clear division of duties and authorities among them.

[11] Permenpan/RB/No. 14/2010

Coordination is also difficult because ECED services are also provided through private providers and communities. Government agencies tend to focus only on their own implementing activities and ignore innovative community activities in ECED. Up to now there has been no effort to create clear cooperation mechanisms between the related parties.

The recently issued Presidential regulation on Holistic-Integrated ECED (No 60 of 2013) aims to provide a strong foundation for improved implementation and coordination. It establishes a multi-agency Task Force to facilitate coordination in implementing HI-ECED and addressing the challenges outlined above. At the national level, the Task Force is chaired by the Coordinating Ministry for People's Welfare (*Kemenkokesra*) and jointly co-chaired by the Minister of National Development Planning/ Head of National Planning Agency (Bappenas) and Ministry of Home Affairs. The membership consists of eight ministries and agencies related to various aspects of Holistic ECD. The sub-national Task Force (Provincial and district) reports to the Governor and Mayor respectively. Table 23 summarizes the roles and composition of National and sub-national Task Force.

Table 23. Coordination of Holistic-Integrated ECED services based on Perpres no. 60/ 2013

Coordination across levels of government	**NATIONAL TASK FORCE Establish norms, standard, procedures and criteria, providing technical guidance, supervision, advocacy and training**	**PROVINCIAL TASK FORCE Provide technical guidance, implementation supervision, advocacy and training**	**DISTRICT TASK FORCE Provide: ECED services, technical guidance to service providers, implementation supervision, advocacy, training and evaluation/ reporting**
Chair	Coordinating Ministry for People's Welfare (*Kemenkokesra*)	Vice Governor	Vice Mayor *Wakil Walikota/ Wakil Bupati*
Vice Chair 1	Minister of National Development Planning/ Head of National Planning Agency (*Bappenas*)	Head of Provincial Planning Agency (*Ketua Bappeda Prov*.)	Head of District Planning Agency (*Ketua Bappeda Kab/Kota*)
Vice Chair II	Minister of Home Affairs (*Mendagri*)	Head of Education and Religion of Province (*Karo Pendidikan dan Agama Pemda Prov*.)	Head of Education and Religion of District (*Karo Pendidikan dan Agama Pemda Kab/Kota*)
Members	The Ministers of: Education and Culture (*Mendikbud*), Health (*Menkes*), Social Affairs (*Mensos*), Religious Affairs (*Menag*), Women's Empowerment and Child Protection (*Meneg PP &PA*), The Secretariat of the Cabinet, The Head of the National Population Affairs and Family Planning Agency (*Ka BKKBN*) and The Head of Statistic Central Bureau (*Ka BPS*)	Head of Province Education Office (*Kadis Pendidikan*), Head of Province Social Office (*Kadis Sosial*), Head of Province Religion Office (*Ka Kanwil Agama*), Head of Family Planning (*Ka BKKBN*), Head of Statistic Central Bureau Province (*Ka BPS Prov*)	Head of District Education Office (*Kadis Pendidikan*), Head of District Social Office (*Kadis Sosial*), Head of District Religion Office (*Ka Kanwil Agama*), Head of District Office for Family Planning (*Ka BKKBN*), Head of District Statistic Bureau (*Ka BPS Kab/Kota*)

Note: The basis for the need of coordinator at each government level is Presidential Regulation No. 60, 2013

If deemed necessary, at each government level, a sub Task Force should be established with membership as outlined in Presidential Regulation No. 60, 2013.

Despite the new Presidential regulation on ECED a number of issues remain to improve the coordination of ECED services. As shown in Table 24, Perpres only regulates the establishment of a central level Task Force and Sub-Task Forces at the province and district level and does not specifically assign the role of ensuring that sectoral standards are used in the delivery of Holistic and Integrated ECED (HI-ECED) services.[12]

It is important to note that while related ministries are encouraged to coordinate in the implementation of HI ECED they have to follow their own individual budget processes and be held accountable individually to the auditor. In order for sectoral ministries to work together effectively in contributing to the achievement of HI ECD it is important that their functions should be made clear in the Perpres.

In order for successful implementation of the Presidential regulation on ECED it will be important to identify the responsible agencies for key elements of the ECED services that are currently provided. The identification of the ministries or agencies needs to consider that:

- Each ministry/agency has a specific function and is responsible for their respective terms of reference or mandate.
- Each ministry/agency is accountable for the budget allocated for their specific function.
- Each Ministry/agency is responsible for developing norms, standards, procedures and criteria specific to their programs.

Table 24 attempts to articulate specific roles for the various entities charged with ensuring that early childhood services are holistic and integrated. It outlines a possible allocation of responsibilities across the different levels of government and for the specific elements of ECED service provision: education/early stimulation, care and protection and health/nutrition.

Table 24. A proposed allocation of responsibilities across levels of government and elements of ECED service provision

Level of Gov't/ and ECED Component	Center (A)	Province (B)	District (C)
Education/ Stimulation (1)	1.A. Coordinator: MoEC. Member: Min of Religion, Min of Health, Min of Social Affairs, Family Planning, Min of Women Empowerment and Child Protection, Child Protection Commission.	1.B. Coordinator: Provincial Education Office Members: Provincial Health Office, Prov Social Office, Prov Religion Office, Prov. Family Planning	1.C. Coordinator: District Education Office Members: District Health Office, District Social Office, District Religion Office, District Family Planning Office
Care and Protection (2)	2.A. Coordinator: Min of Social Affairs Members: Min of National Education, Min of Health, Min of Religion, Family Planning, Min for Women Empowerement and Child Protection, Child Protection Commission	2.B. Coordinator: Provincial Social Office, Members: Education Office, Health Office, Religious Office, Family Planning Office	2.C. Coordinator: District Social Office Members: Education Office, Health Office, Social Office, Religious Office, Family Planning
Health and Nutrition (3)	3.A. Coordinator: Min of Health Member: Min of Education, Min of Social Affairs, Religious Affairs Office, Family Planning, Min for WE and CP, Child Protection Commission	3.B. Coordinator: Provincial Health *Dinas* Members: Education Office, Social Affairs Office, Religious Affairs Office, Family Planning	3.C. Coordinator: District Health *Dinas* Members: Education Office, Social Affairs Office, Religious Affairs, Family Planning

[12] These sectoral standards include: Law No. 20 of 2013 on National Education System (especially Article 28 on Early Childhood Education), Regulation of Ministry of National Education No. 58 of 2009 on Standard for Early Childhood Education, Law No. 4 of 1979 on Child Welfare, Law No. 23 of 1992 on Health, Law No. 39 of 1999 on Human Rights and Law No. 23 of 2002 on Child Protection.

While this reorganization has eliminated the distinction between formal and non-formal ECED services in practice the difference remains. The ECED Directorate has assumed responsibility for all ECED services (i.e. TK, KB, TPA and SPS). Kindergartens (TK) were previously the responsibility of the Directorate for Basic Education and considered as formal ECED whereas KB, TPA and SPS were under the original ECED Directorate and considered as non-formal. PAUD – or Pendidikan Anak Usia Dini – was to be used as the generic name that encompasses 'formal' and 'non formal' types of ECED. However this concept has not been communicated effectively and it is still a common perception that PAUD refers only to non-formal services.

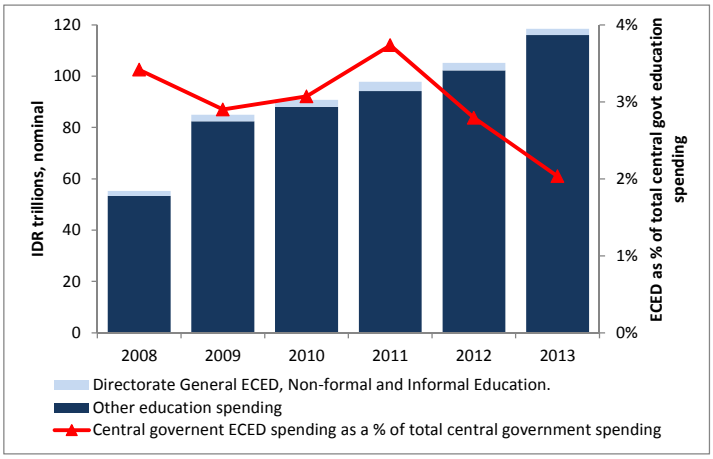
Many institutions at the local level have not integrated in line with the reorganization at the central level. When ECED was managed by two separate directorates, kindergartens and non-formal ECED services had their own district level supervisors and teacher associations. The merging of the two streams at the local level has not been automatic and some districts still maintain separate institutions instead of having a PAUDNI unit to mirror the national structure. In addition, the transfer of responsibility has not always followed the transfer of resources (i.e. budget and staffing). For example, almost all TK supervisors have preferred to become primary school supervisors and remain within the basic education unit rather than joining the new PAUDNI unit. This has partly been due to the differences in the remuneration package between primary school and ECED supervisors.

3.4. Financing of ECED

Current government spending

Central government spending on ECED services is low in comparison with other sub-sectors and unlike these sectors has not grown significantly. In recent years, spending by the central government on ECED has been in the region of IDR 2-3 trillion per year compared to an overall central government budget for education of over IDR 100 trillion (Figure 69). Perhaps more worryingly is the share of total central government spending on ECED has been declining. In 2011, approximately 4% of central government funds were devoted to ECED but by 2013 this share had dropped to around 2%.

Figure 69. Central government spending on ECED, 2008-2013



Source: Data on spending from Directorate General ECED taken from Ditjen PAUDNI. Data for total central government spending from audited accounts (2013 is revised budget – see Chapter 10)

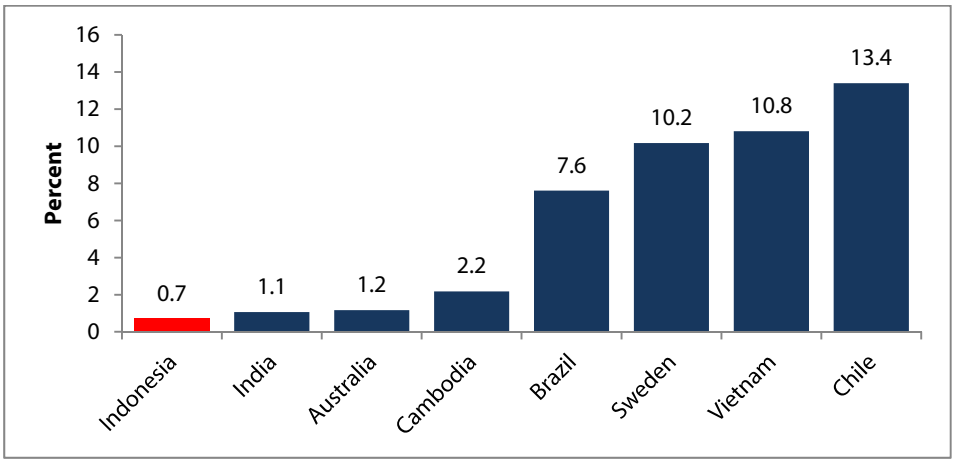
Note: ECED spending from MoRA is not included

While local governments contribute substantially to the financing of ECED the share of total government spending devoted to the sub-sector remains low due to the focus on financing Compulsory Basic Education

and Teacher. The last education public expenditure review found that approximately three-quarters of all public spending on ECED came from local governments. However, ECED was still estimated to absorb only around 2% of total government (i.e. central, provincial and district governments) education spending.

Government spending on ECED remains low in Indonesia compared with other countries – both within the region and around the world (Figure 70). Indonesia spends less than 1 percent of its total education expenditure on pre-primary education. In contrast, Vietnam spends 10.8 percent. Low levels of government support to ECED and the size of private sector involvement suggests that the bulk of funding for ECED services in Indonesia come from non-government sources.

Figure 70. Government spending on pre-primary as a percentage of total education spending



Source: Education Statistics: Education Expenditure. Most recent year available (2010)

Opportunities to Improve Access to ECED Services through Village Law

In January 2014, the Indonesian Parliament ratified the Law on Village Government (*Undang-Undang Desa*—UU Desa). The UU Desa, or Law 6/2014, envisages a transfer of national and district government resources in an amount estimated at up to US$140,000 per village per year. The law also stipulates that these funds (*dana desa*) should be utilized according to the principles of transparency, accountability, and inclusion—principles operationalized through over 15 years of implementation of the government's community Development Programs such as: Kecamatan Development Program (KDP) and National Program for Community Empowerment (PNPM Mandiri). The UU Desa represents an enormous opportunity for villages to access resources for local development and poverty reduction efforts. *Dana desa*, if invested effectively, can complement district government investments in basic services, thereby improving access and quality of basic health, education, and infrastructure for rural Indonesians. With the strong evidence attending ECED has great benefit for the poor children in preparing them for further education, ECED is a strong candidate for funding by *Dana Desa*.

How much would it cost to expand access and raise the quality of ECED services for 3-6 year olds?

This section provides a summary of some simple estimates of the costs of ECED services to understand the challenge in expanding access. In order to reap the benefits associated with good quality ECED it is important to expand access to quality services, particularly for the poorest and most marginalized children. How feasible such an expansion will be will depend on the overall costs as well as on an understanding of how these costs might be shared among the different stakeholders within the sector (e.g. central and local governments, communities, NGOs and parents).

A simple costing model has been developed for the background study to look at the overall magnitude of the challenge (see Box 18). Similar to the structure of other education costing simulation models the model used in this chapter consists of three main modules:

Box 18. Basic assumptions for the cost projections

1.Enrolment projections.

The 3 to 6 year old age group is used as the basis of enrolment projections. The basis of enrolment projections are overall single age population projections provided by the UN population division and based on the 2010 Indonesian population census. Single-age enrolment rates in ECED are taken from the MoEC data. Projections are made by changing the share of children in each age group enrolling in ECED services.

The model has been developed for a variety of scenarios for enrolment. The scenario presented in this chapter looks at a general expansion of ECED services and assumes that 81% of 3-6 year olds are enrolled in ECED services by 2019. Other scenarios considered included the cost of expanding provision for children in the poorest 40% of the population as well as to children in 3T districts but are not presented here.

2.Cost projections.

Teacher costs – annual teacher costs are based on an average salary for TK (IDR 36 million annually) and KB (IDR 12 million annually) based on NUPTK data and information from the government's ECED project. Overall teacher costs for each level are projected using student educator ratios described in the minimum service standards. An annual cost of IDR 3 million per educator is also included for professional development activities.

Non-teacher costs – a grant (BOP) is included for each center and ranges from IDR 7 million per KB to IDR 11 million per TK.

In addition to BOP grants an amount for the operating costs of centers, resources for purchasing toys and learning materials as well as the building and upkeep of a playground in each center are included in the cost estimates. The projections also include the costs of providing 10 ECED supervisors in each district.Center construction costs are included as capital expenditure and are based on estimated costs of around IDR 22 million per KB and 45 million per TK. Center construction and operation costs are based on a center size of 40 children.

3.Total education cost projections.

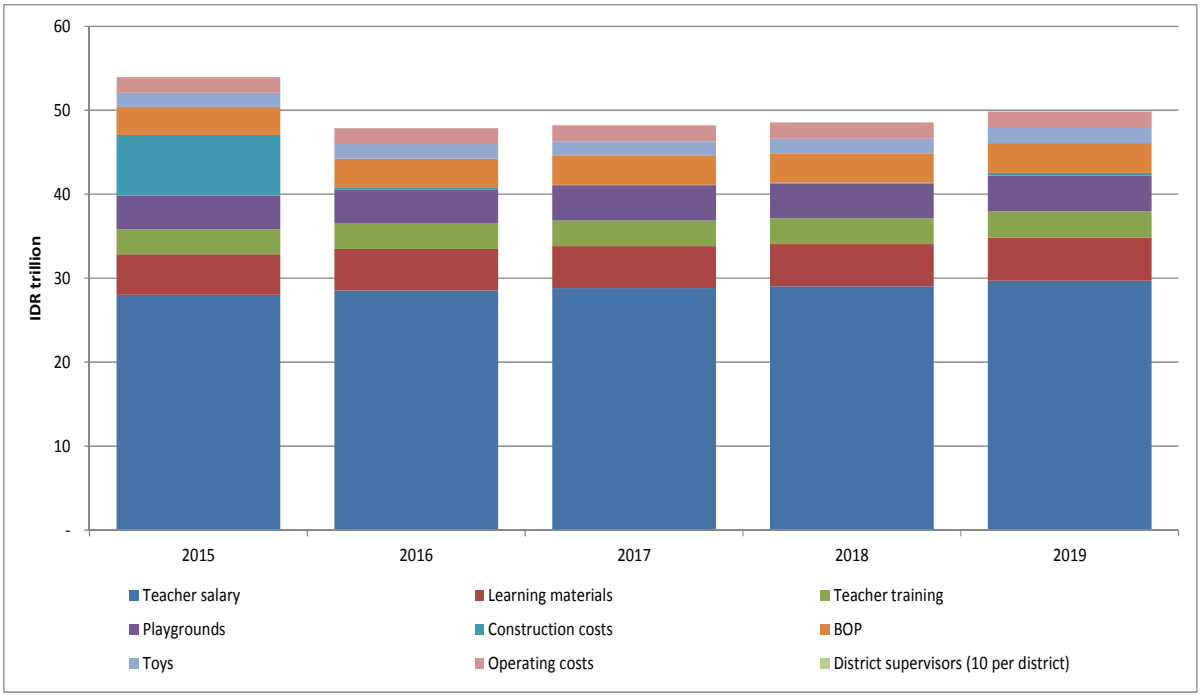
The final component of the model combines cost and enrolment projections to calculate the overall costs of ECED provision over the next medium term development plan (2015 -2019). It is assumed that 25% of all enrollment occurs in KB and 75% occurs in TK.

Note:

It should be noted that the costing model is not designed to give detailed cost estimates over the plan period but to give a broad indication of the financial feasibility of plans to increase access to ECED services.

Expanding access to ECED services to 80% of all 3-6 year olds would cost on average IDR 50 trillion (Figure 71). It should be noted that this overall annual cost estimate for ECED provision includes all costs and takes no account of who finances these costs. While it would be expected that communities and parents are likely to support these overall costs they represent approximately 15% of overall government spending on education. While this is significantly higher than the current support that central and local governments devote to ECED it does demonstrate that the resources required to improve access to better quality ECED services are within reach. For example, while it is not expected that the government would cover all these costs they are well within the efficiency savings that could be realized from current government education spending (see Chapter 10).

Figure 71. Estimated costs of expanding access to 80% of 3-6 year olds with ECED services that satisfy the minimum service standards



How can the costs of expanding quality ECED provision be financed?

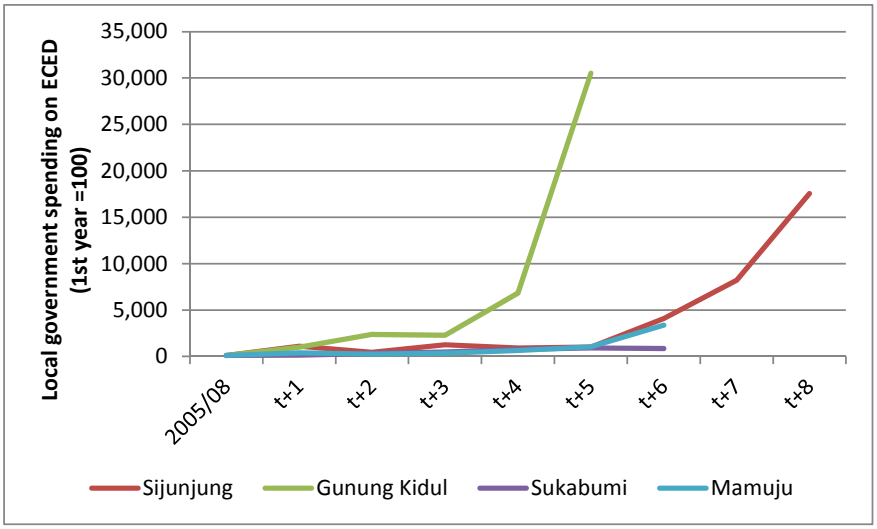
There is a strong justification for increasing government spending on ECED given the large expected benefits of investments in the sub-sector. Expansion of ECED provision should also take into account the quality aspect of the service and the required support system. This section explores the opportunities for increasing ECED investments amongst the different stakeholders.

Opportunity 1: Increasing district spending on ECED

Evidence shows that with proper advocacy, districts are willing to include and increase their investments in ECED, establish a dedicated ECED unit and supervisor in their local structure as well as to allocate their local budget for ECED-specific purposes.

The recent Early Childhood Education and Development Project that MoEC managed demonstrates the ability of districts to significantly raise the resources they devote to ECED services. Figure 72 shows the substantial increases in resources that selected districts have managed to achieve during their participation in the ECED project. For example, Sukabumi has managed to increase its allocations to ECED from approximately IDR 1.1 billion in 2008 to IDR 10 billion in 2014.

Figure 72. Local government increases in ECED spending, selected districts



Opportunity 2: Maximizing the use of other community development funds

There are also opportunities to support the expansion through the use of community development funds. Table 25 shows the contributions from PNPM projects in Kabupaten Gunung Kidul and Sijunjung where communities, supported with good facilitation, decided to spend their community grants for ECED. This type of collaboration can be significantly expanded in the light of recent decisions to establish a Village Fund after the issuance of the Village Law.

With better coordination between these programs and the Education authority at central and district level, the collaboration can be expanded to cover better facilitation, socialization of ECED standards and increasing the availability of quality teacher professional development programs that communities can access using the village grants.

The role of Ministry of Home Affairs as one of the co-chair in the HI-ECED National Task Force can easily facilitate the coordination.

Table 25. Contribution of PNPM Rural to ECED in Gunung Kidul District

No.	Contribution	Unit	Amount
1	TK Building	Unit	225
2	Play Group Building	Unit	271
3	Community Learning Centre Building	Unit	1
4	Rennovation of TK/ Playgroup building	Unit	15
5	TK Furniture	Unit	157
6	Play Group Furniture	Unit	986
7	Scholarships and Children uniform	Child	106
8	Education Toys	Unit	685
9	Honorarium for Teacher	Person	220

Table 26. Contribution of PNPM Rural in Sijunjung District

Kecamatan	Building			Amount (Rupiah)
	TK	KB	*Posyandu*	
Kupitan	0	0	1	153,877,500
IV Nagari	1	4	2	1,308,749,000
Sijunjung	1	5	1	1,585,332,000
Koto VII	3	3	1	1,281,469,600
Sumpur Kudus	4	1	0	871,116,200
Lubuk Tarok	4	6	1	1,962,387,200
Tanjung Gadang	3	4	0	1,402,767,500
Kamang Baru	2	0	1	578,627,000
Total	18	23	7	9,144,326,000

Opportunity 3: Community and private funds

As the previous section has shown there is significant demand on the part of ECED teachers to improve their competency and earn recognition by completing the short course contracted out by Directorate P2TK to training providers.

The Directorate for P2TK has contracted out the 'basic level' training package to select 'training providers' who are given a block grant to train a set number of participants at province/ district level. Demand is high and teachers (public) are willing to pay (USD 80/ person) to attend the training. This model needs to be seriously evaluated in terms of quality and accountability – but is a potential model for cost-sharing, especially by offering this package for funding by CSR.

Opportunity 4: Mobilizing other resources

There are also opportunities to mobilize additional financial and non-financial resources from the broader community. Contributions can be sought from existing social networks including the network of Bunda PAUD (from national to village levels), the PKK (Family Welfare Movement – under Ministry of Home Affairs) as well as the professional association such as HIMPAUDI, IGTKI (association of non-formal ECED and TK teachers). In addition, the memorandum of understanding between MoEC and the Indonesian Mosque Federation which allows Mosque Facilities to serve as ECED centers could be built on and replicated with other religious organizations.

4. Policy Options

Aligned with the structure of the discussion above, the policy recommendations for each of the 4 areas are summarized below:

4.1 Access

- **Prioritize the most disadvantaged groups in expanding ECED services.** The evidence is clear that the poorest, most marginalized children and families gain the greatest benefits. **Work closely with existing community development programs**. To reach the poor and disadvantaged it is important to work with community development programs to make use of current mechanisms for targeting and facilitation. The introduction of the village fund also has the potential to provide additional support to expanding access to ECED.

- **Coordinate to ensure coverage for all children 0-6**. Access needs to cover all children between the ages of zero and six with MoEC providing services for 3-6 year olds. There should be flexibility in areas where TK service is not available or affordable by providing KB to expand their services to cover children 5 and 6. Similarly, in areas where there is no KB service, then TK should be encouraged to open KB or SPS services to children 3 – 4. In such an event, teacher training activities need to help teachers tackle the challenges of teaching classrooms that include children of very different ages.

4.2 Quality

- Ensure that **National ECED standards (Permendiknas 58/2009)** are used as the basis for establishing the ECED curriculum and as a basis for all professional development.
- **Evaluate, improve and scale up various professional development forums for teachers/ educators**, including *Diklat Berjenjang*, the use of ECED model/ resource centers for '*magang*', internship, the use of KKG (cluster meeting) to improve teacher competency
- **Develop career development system**: a clear path of how teacher can be accredited and move from one level to the next one as well as converting their short course into credit points to continue to degree program.
- **Clarify and strengthen the role of *Pengawas* TK and *Penilik* PAUD** and provide support for improving their competency and their operations
- **Develop and implement an effective quality assurance system**
- **Track the impact of training on classroom practices and outcomes for children**.

4.3 Coordination

Clarify the role of the main agencies responsible for each component of HI-ECED. In particular, assign MoEC the leading role on the 'Education/ early stimulation' element through the application of the ECED national standards. This is also likely to ensure that MoEC can secure the budget justified by its function.

4.4 Financing

- **Increase government budget on ECED services for 3-6 year olds.** The cost projections outlined in this chapter show that the budget needed to expand the coverage of quality ECED services is affordable.
- **Explore cost sharing opportunities with districts, community development programs, communities and private sector organizations.** These arrangements need to be locally adaptable and reflect the fact that no one segment of society or government can be reasonably expected to shoulder the whole burden.

References

The seriousness of the Government of Indonesia toward early childhood development is reflected in the establishment of the following laws starting from sectoral regulations then moving forward to the integrated one:

- Government Regulation No. 33 of 2012 on Exclusive Breast Feeding
- Law No. 20 of 2003 on National Education System
- Law No. 17 of 2007 on Food
- Law No. 36 of 2009 on Health
- National Strategy for HI ECD (2008) - established policy directions of early childhood development which covers: i) Improving access, distribution and completeness of the types of early childhood development services, ii) improving the quality of early childhood development services (capacity, quality of human resources, completeness of materials, facilities and infrastructure), iii) improving cross-sectoral coordination and cooperation and partnership among government agencies, implementing agencies and related local, national and international organizations.
- Presidential Regulations No. 60 of 2013 - The strategy of implementing early childhood development has been evolving into holistic-integrative directions.
- A variety of movements:
    a. Program Gerakan Nasional PAUD – National ECD Movement for Indonesia's 100 year Independence – launched by Minister of Education and Culture in 2011
    b. Program Bunda PAUD – National (2011), Province/ District, sub-district and village
    c. "Program Satu Desa Satu PAUD" – One village, one ECED service (Directorate General PAUDNI)
    d. First Lady's statement (2005) on integration of ECED, *Posyandu* and BKB (parenting)

Annex Table 1. Standards for Personnel in ECED

Type of ECED	ECED service	Employment Status	Qualifications
Formal ECED			
a. Educators	1. TK teacher (*Guru TK*)	Civil Servant/ Non CS	S1/D4 & Certificate of Intermediate and Advanced Training
	2. TK Assistant Teacher (*Guru Pendamping TK*)	Non CS	D2/SMA and Certificate of Basic/ Intermediate Training
b. Education Personnel	1. TK Principal	Civil Servant/ Non CS	S1/D4 & *Sertifikat Diklat Berjenjang*
	2. *Pengawas TK*	Civil Servant/ Non CS	S1/D4 & *Sertifikat Diklat Berjenjang*
	3. *Tenaga Administrasi*	Non CS	SMA/equivalent
PTK PAUD Non-formal			
a. Educators	1. Educator for KB (*Pendidik KB*)	Non CS	S1/D4 & Certificate Intermediate/ Advanced Course
	2. Assistant Educator for KB/ SPS	Non CS	D2/SMA & Certificate Basic/ Intermediate Course
	3. Caregiver in Day Care (*Pengasuh TPA*)	Non CS	SMA & Certificate Intermediate/ Advanced Course
	4. *Pamong Belajar*	CS	S1/D4 & Certificate Intermediate/ Advance Course
	5. Instructor	Non CS	S1/D4 & Certificate Intermediate/ Advanced Course
	6. Tutor	Non CS	D2/SMA & Certificate Basic/ Intermediate Course
b. Education Personnel	1. Manager of ECED service (*Pengelola Satuan PAUD*)	Non PNS	S1/D4 & *Sertifikat Diklat Berjenjang*
	Inspector	PNS	S1/D4 & *Sertifikat Diklat Berjenjang*
	Administrative personnel	PNS/Non PNS	S1/D4 & *Sertifikat Diklat Berjenjang*
	Security	PNS/Non PNS	SMA & Sertifikat Diklat Dasar

Chapter 8. Teacher Quality and Management

Developing a highly qualified, well-managed and efficiently distributed teaching workforce is essential for a successful education system. Effective management is critical to producing a competent, motivated, high quality teaching service. The morale and commitment of teachers depends to a large extent on the ways in which their recruitment, initial training, posting, in-service training, transfer, promotion, appraisal, professional and administrative supervision are managed. These factors, in turn, can contribute to improved student outcomes.

With over 3 million teachers in Indonesia, the task of teacher management is a significant challenge. It is also a task that has complexities in terms of roles and responsibilities, particularly with decentralization in 2001, which placed many of the teacher management responsibilities at the district level.

The Indonesian government has placed a high priority on teacher reform in recent years, with initiatives that have had varying degrees of success. The reforms have focused on improving the quality of teachers and enhancing the teaching profession, with the foundation being the establishment of a legal framework underpinned by the passage of what became known as the Teacher Law (UU/14) in 2005. There have been positive signs and successes from the recent reforms, but the process has also highlighted the complexities and challenge of true, effective system-wide reform.

There are a number of key drivers that will impact and shape the teaching workforce in upcoming years. These include the following: (a) senior secondary and early childhood education are becoming the new defining frontiers for teachers, as access will increase significantly in the upcoming years, (b) the curriculum reform 2013, which defines not only content but also new teaching approaches to be used, (c) an explosion in the number of teacher candidates being produced for a limited number of slots in a system with too many teachers already, (d) civil service reform and (e) a shift in focus from certification toward a system of performance, accountability and management.

From a teacher quality perspective, the key proposed policy direction in this chapter is to strengthen teacher accountability and management systems. The cornerstone strategy for this policy is the operationalization of MOEC's integrated Teacher Professional Management System (TPMS) consisting of Competency Testing, Performance Appraisal and Continuous Professional Development. Successful implementation will require a shared understanding of the importance of such a system, along with a monitoring and evaluation mechanism and strengthened collaboration across levels (Central and District) to support implementation.

A second key proposed policy direction related to quality is to invest in future teachers, from pre-service to induction and early support. This involves a multi-pronged approach of: (a) comprehensive reform of teacher training colleges (LPTKs) where they are positioned to be both training providers and partners in meeting need for future/forecasted workforce; (b) ensuring quality entrants (with the correct quantity) into LPTKs; (c) ensuring quality of LPTKs through strengthened operational licensing and accreditation; (d) collaboration between LPTKs and government (Central, Provincial and District) for both quality and balanced distribution, and; (e) support and enforcement of induction program for new teachers.

On teacher management, the Joint Decree is a groundbreaking step involving five separate ministries that provides a foundation for improved efficiency in deployment and distribution of teachers. Strategies that can be developed around this decree include: (a) engaging district governments in comprehensive 5 year plans to address teacher needs and management issues (employment, deployment, distribution); and (b) support for innovative efficiency opportunities such as cross-staffing of Junior and Senior Secondary schools (including one-roof schools), cross-staffing of primary and ECED schools, and support for multigrade and dual-subject teaching.

The following chapter elaborates on the proposed policy directions, identifying potential steps, barriers and keys to moving forward. The chapter is structured around three overarching policy directions: (1) Strengthening teacher quality, accountability and management systems, (2) Investing in future teachers, from pre-service to induction and early support, and (3) Improving the Management and Deployment of the Teacher Workforce.

1. Context

With over three million teachers—from kindergarten through academic and vocational secondary education; in public, private, and Islamic schools; and with both civil service and temporary, school-based contract status—Indonesia has one of the largest and most diverse cadres of teachers in the world. The critical role played by teachers in enhancing the quality of education is especially salient in this context. The evolving nature of its education system and the increasing, and increasingly complex, challenges facing individual teachers and the teaching profession as a whole are of immense importance. How the country is attempting to reform its teacher management and development system and strengthen the teacher education institutions and processes that produce its teachers are therefore of great importance to the future development of the nation.

1.1 The Teacher Law and Recent Reforms

Indonesia's policy direction on teachers for the upcoming medium-term plan must be approached in light of the country's recent massive reform effort, including the building-blocks developed, the achievements realized and the challenges and shortcomings encountered. Much of the reform undertaken to improve teacher quality in Indonesia over the past decade has been shaped by the Teacher and Lecturer Law (14/2005). This law aimed to address a wide range of teacher quality issues simultaneously. However, a key component of the law was the requirement that all teachers become certified by: (a) gaining a minimum academic qualification of at least 4 years of post-secondary education; (b) acquiring satisfactory skills in classroom teaching performance through comprehensive and appropriate professional training and practice; and, (c) demonstrating proficiency in four mandated competency domains (professional, pedagogical, personal and social). Certification was intended to ensure that teachers would have the necessary standards required to engage in high quality teaching and thereby improve the results of students.

For this they would also become entitled to the personal benefit of a professional allowance to double their remuneration, hence improving their welfare and status. This increase in salary has had considerable budgetary implications, and, thus, it is important to review the impact of this investment on the quality outcomes of teachers and students so far.

1.1.1 What can be learned from the reform and the certification process?

Certification has been the cornerstone of the teacher reform effort and understanding its historical roots, implementation and resulting impact provide important lessons regarding the challenges and political realities of attempting to improve teacher quality. In the early 2000s, there was considerable consensus among the major education stakeholders[13] of the country that what has since become known as the Teacher Law was necessary to clarify the roles, responsibilities, and desired competencies of teachers and to identify the strategies needed to improve their quality and welfare.

[13] These included the government (the Ministry of National Education, the Ministry of Finance, and the National Planning Board), political parties, to the Parliament, and teacher associations.

Once the general framework of the Teacher Law was set, however, the consensus on its implementation began to fall apart among the stakeholders. A major issue in this regard was the means proposed to prove "competency" (after the gaining of a minimum four-year degree) for the purposes of certification and receipt of the professional allowance. The ministry, supported by a newly established National Education Standards Board, wished to assess the four core competencies (professional, pedagogical, personal, and social) through both written tests and classroom observation. The teacher associations, however, contended that the proposed competency tests were unnecessary since most candidates for certification had already earned a four-year degree and, in many cases, also had many years of experience accompanied by a range of in-service training activities. A majority in Parliament agreed with this opinion.

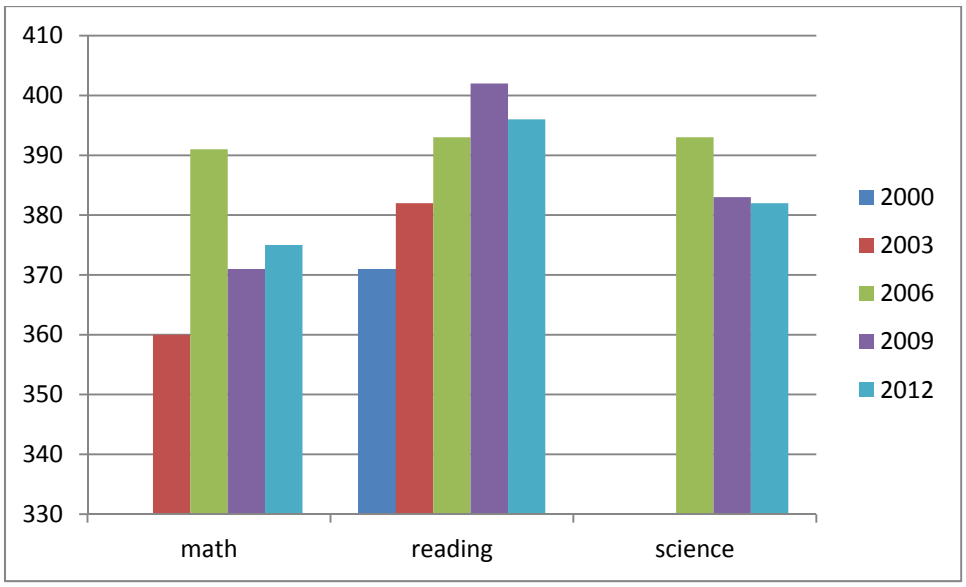
Instead, they agreed that proof of competency would be based only on the submission of "portfolios" of achievement (such as personal references, publications, certificates of attendance at in-service courses, and model lesson plans). Insistence by the ministry that some kind of competency assessment was essential in this process led to a compromise whereby those teachers whose portfolios were evaluated and approved by local teacher education institutions (selected and oriented by the ministry) would pass immediately to certification, while those who did not gain such approval would be required to undertake a 90-hour training program and then be tested on its content—a test that was ultimately passed by virtually all who took it. In other words, the process of certifying teachers (and thus of providing them a professional allowance equal to their base salary) was not strongly linked to demonstrated competencies in either subject content or pedagogical skill.

Ultimately, however, doubts began to accumulate both about the integrity of the content and the fairness of the portfolio assessment procedure across teacher education institutions and about the efficacy of the 90-hour training program. A comprehensive randomized control treatment evaluation of teacher certification found that the certification program in Indonesia was having no effect on student learning. (World Bank, 2013) This and other mounting evidence were compelling and convinced the ministry, despite opposition from some teacher associations, that a test of actual competency before certification was required. The ministry therefore eliminated the portfolio as a means to gain certification and developed both a Pre-Test of Teacher Competency (which determines whether a teacher remains in the certification queue) and a post-training Teacher Competency Test (to determine whether the teacher has achieved the desired competencies and thus is eligible for certification and the professional allowance). Even in this process, however, political pressures (from teacher associations to find most teachers competent) and financial exigencies (from the Ministry of Finance for the Ministry of Education and Culture to spend its budget for professional allowances) caused the ministry to set the passing score at 30 percent for the competency pretest given in early 2012 - a score too low to meaningfully differentiate high quality teachers from low quality ones.

The recent release of the 2012 PISA results is a sobering reminder that student learning is not improving in Indonesia. Student scores showed no improvement and Indonesia fell to a ranking of 64th out of 65 countries. (Further analysis on Indonesia's student learning outcomes is presented in Chapters 1 and 9.) The teacher reform effort has improved teacher welfare, but the opportunity to effectively leverage the process for quality improvement was lost. While student learning is influenced by many different factors[14], teacher quality improvement is a key piece in the puzzle for improving student learning outcomes.

[14] It is a package of interventions which impact student learning including: having clearly stated relevant learning outcomes to begin with; sequenced curriculum (the team notes some of the issues with the curriculum in a later section of this chapter); sufficient instructional materials in an appropriate language of instruction; teachers regularly in classrooms and knowing how to use these materials with students; sufficient time on learning tasks; school leadership; parent/community support etc.

Figure 73. Indonesia PISA Scores, 2000-2012



Source: OECD 2013

Note: PISA = Program for International Student Assessment.

This admittedly lengthy description is crucial context for policy directions on teacher quality improvement. The Teacher Law was very well designed, but once it came to operationalizing it, opposition to quality measurements resulted in a watered down certification process with very little meaning. The recent attempt to bring in Teacher Competency Testing was *again* watered down to where the passing score hardly identified quality. As will be discussed later in this chapter, recent studies indicate that teacher subject and pedagogical knowledge have a strong positive relationship with and effect on student learning. If Indonesian teachers were to increase their knowledge – as measured in the Teacher Competency Test -- it would likely lead to a meaningful improvement in student learning outcomes. Other important new measures related to performance appraisal and results agreements for continuous professional development can also play a key role in improving teacher quality and student learning outcomes, but only if they are implemented with strong political will. As the certification process demonstrates, meaningful change for teacher quality improvement requires strong political will and a realistic assessment of the environment.

1.1.2 A new opportunity for quality improvement

While certification has dominated the reform discussion, the Teacher Law also provided "…. a comprehensive, clearly defined package of reforms that established an ambitious agenda for improving the national education system"[15]. These reforms have become a blueprint for the future roles and responsibilities of teachers as well as the strategies needed to improve their quality and welfare. Through this legislation, the Indonesia government has made a clear and long-term commitment to education development and improvement. It is important, therefore, to remember that other elements of this long-term vision, many currently planned but not yet fully implemented, are also part of this commitment and can be projected to have a significant quality impact in future years. These longer-term components will play a central role in this chapter.

[15] Ministry of Education and Culture, (2009), *Teacher Certification in Indonesia: A Strategy for Teacher Quality Improvement*, World Bank, Jakarta, page 2

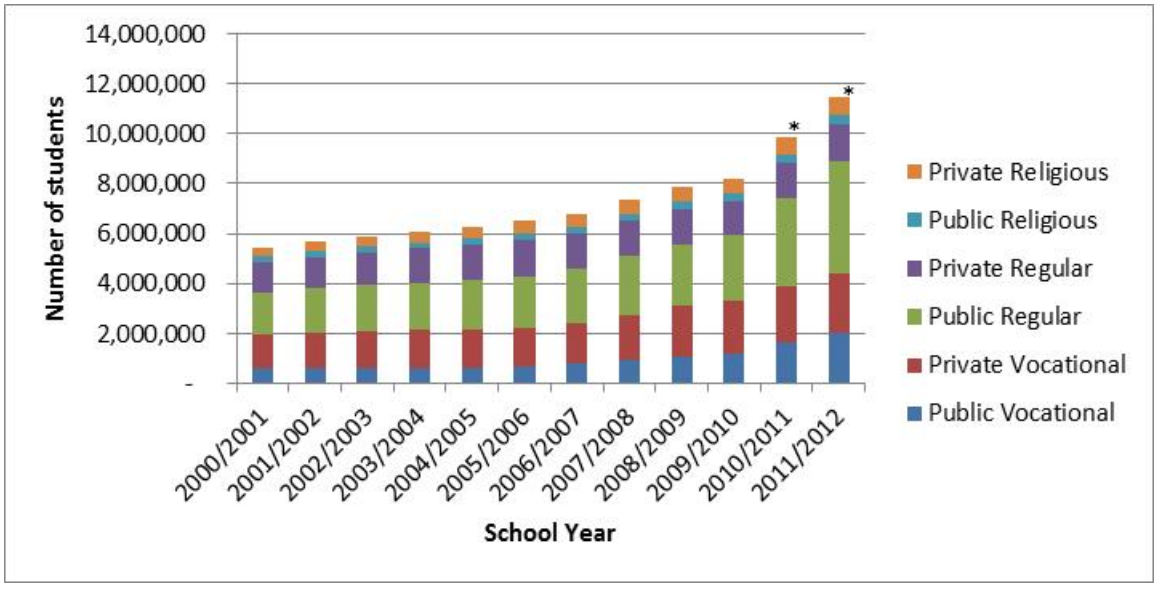
1.2 Key driving factors that will shape the teaching landscape

As the educational system evolves, so must its teaching workforce. Along with the above-mentioned teacher reform effort, other key influences are directly and indirectly impacting teachers. The following are important aspects to keep in mind as a basis for the policy directions proposed in this chapter.

1.2.1 Increasing enrollments in Senior Secondary and Early Childhood Education will raise the demand for teachers able to effectively teach at those levels

Indonesia has made great strides in expanding access to junior secondary education. This has, in turn, created a wave of students that are now continuing to senior secondary school. The number of students enrolled in senior secondary (regular, vocational and religious) has jumped over the past few years, with the growth rate in 2011/2012 reaching over 10%. As Indonesia moves closer to a policy of universal 12 year education and uses financial instruments such as BOS at the senior secondary level, the number of students will continue to expand and there will be a need for more senior secondary teachers. The staffing of these schools tends to be challenging due to the need for teachers with strong subject knowledge. Chapter 2 on universal 12 years education provides a model that estimates the number of teachers that would be necessary based on the target of reaching 97% Gross Enrollment by 2020 and, assuming the same STR is maintained, an additional 245,000 SMA teachers would be required. With reasonable efficiency gains in line with staffing policy mandates (where full-time teachers are to have 24 hours of lesson time), the number would be closer to 100,000.

Figure 74. Enrollment trend of senior secondary education by school type



Sources: Statistik Pendidikan 1998-2011 for MOEC schools and Buku Saku 1998-2010 for MORA schools.

** For MORA schools the 2011/2012 data is estimated and for MOEC schools the 2010/2011 data is estimated.*

Indonesia is also experiencing rapid expansion at in early childhood education, with the gross enrolment rate for the 4-6 age group increasing from 26.2% in 2008 to 36.5% by 2012 (Susenas). It is estimated that the teaching workforce in ECED could grow up to 75% by 2020. The composition of ECED teachers is very different from the subject-specific and high qualification needs of senior secondary expansion. The fact that the vast majority of ECED centers are private and often staffed with teachers and caregivers holding less than a 4-year degree also means that a different strategy for expansion and staffing is required.

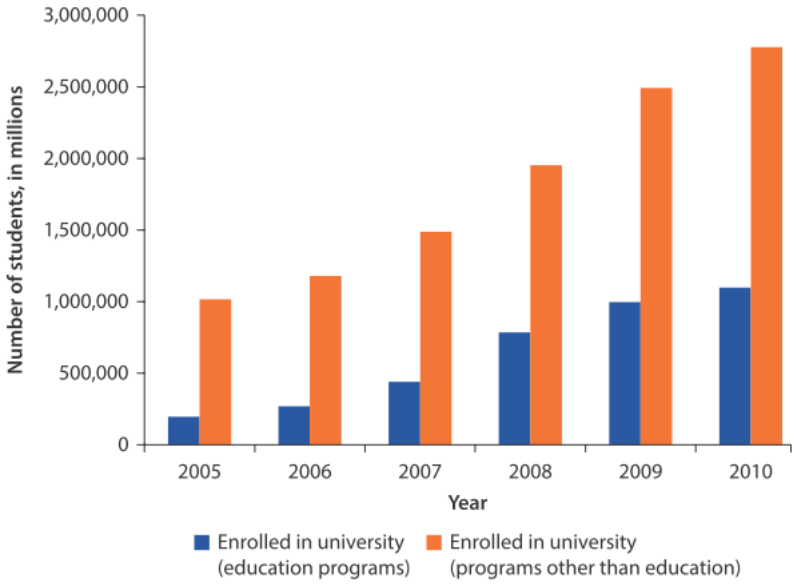
Key Implications: Senior secondary and ECED expansion has both teacher quality and teacher management implications. Ensuring that high quality teachers are available and properly utilized will require careful planning

from the development of pre-service teachers through to their hiring and deployment. It will also require the proper utilization of teachers already in the workforce.

1.2.2 The teacher certification program has induced an explosion in the number of teacher candidates, but the number of positions is limited

The promise of higher teacher salaries through certification and the professional allowance has made teaching a very appealing profession. This has led to a rapid increase in enrolment in teacher training colleges (LPTK). There was a growth of five times in the number of students enrolled in teacher training programs between 2005 and 2010 -- from 200,000 in 2005 to over one million students in 2010. These are recent high school graduates, excluding in-service teachers and *Universitas Terbuka* (Open University) students[16].

Figure 75. Enrollments of higher education students in Indonesia, 2005–10



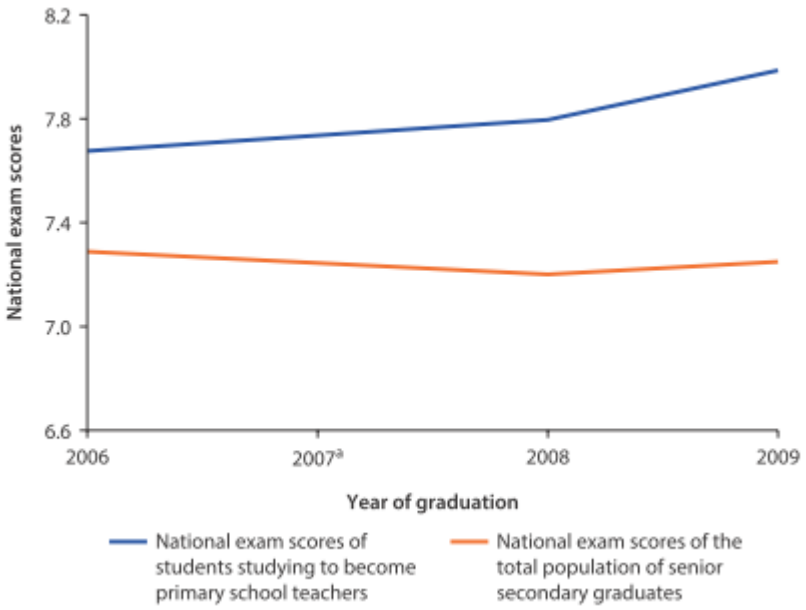
Source: Dashboard PDPT (Pangkalan Data Pendidikan Tinggi), Indonesia Ministry of Education and Culture, Directorate General of Higher Education: http://www.PDPT.dikti.go.id/dashboard/v002.

Note: The 1 million enrolled in education programs in 2010 are recent high school graduates and exclude the approximately 500,000 in-service teachers enrolled in Indonesia Open University.

There is also limited evidence that the quality of applicants, as measured by their National Exam scores, has increased, as illustrated in the figure below. While the national exam score for the total population of senior secondary graduates has remained relatively flat, the national exam scores of students studying to become primary school teachers (as captured through a sample of LPTK) have increased.

[16] Teacher Reform in Indonesia: The Role of Politics and Evidence in Policy Making (2013a)

Figure 76. National Exam Scores of New Teacher Candidates Compared with All Senior Secondary Graduate Cohorts, 2006-2009



Source: Scores of students studying to become primary school teachers from Ministry of National Education 2009. Scores of the total population of senior secondary graduates based on population-level data (school-level) published yearly by the Center for Educational Assessment, Research and Development Board, Indonesian Ministry of Education and Culture.

[a]Comparative data for the 2007 cohorts are not available.

While the increased enrolment has many positive implications in terms of a larger pool of candidate teachers and a possible increase in overall quality, it also raises concern. Roughly 50,000 teachers will retire each year for the next five years. Since there is presently an oversupply of teachers in total and the size of the school-going population is projected to decrease over time, not all positions should be replaced. With over 1 million students enrolled in pre-service education programs today, it is expected that, for the years to come, about 250,000 new holders of teaching degrees will enter the labor market each year. Not all of these will be able to find jobs as teachers.

The disconnect between demand and supply in the labor market for teachers creates another concern about the quality of the teachers from the pool who finally end up being hired. Hiring procedures in Indonesia are not always efficient or based on merit, and it is not evident that systems are in place to guarantee that the best candidate will get the job. A second-order effect of the impending oversupply may be that current high-caliber candidates internalize this situation in their decision-making and opt out of teaching careers—not because they do not want to become teachers but because they are uncertain about whether they will find jobs.

Implications: A filtering procedure is required to limit the number of entrants into teacher training colleges. The filtering procedure should include a mechanism to identify the best candidates.

1.2.3 Curriculum 2013

The curriculum in Indonesia has frequently changed and often has been made more complicated, all within less than 10 years—from a competency-based curriculum introduced in 2004 to a school-based curriculum in 2006 and now to a very different curriculum for 2013. Overall, the curriculum has become both more accelerated (teach faster) and congested (teach more)—moving from the essentials of reading, writing, and arithmetic (and the national creed of Pancasila) to a wider range of content areas (such as sustainable development and life skills) and new ways of teaching (for example, child-centered and interactive, with investigative and inquiry-based approaches with real world contexts). Sometimes the new content areas have been treated as separate subjects, and sometimes they have been integrated into a basic subject such

as language. These frequent changes have often been difficult for most of the teachers, many of who are quite senior but with weak subject knowledge, limited professional support, and few opportunities for further training. The teaching methods in the 2013 curriculum require a completely different approach.[17] For in-service teachers, this new approach cannot be simply learned through a training workshop, but rather would require intensive support over an extended period of time. There is a risk that without proper resources and support, teachers would either ignore the changes or, worse, attempt to implement the new methods without the foundational knowledge required, leading to worse student learning outcomes.

Implications: A cautious approach should be taken in implementing the new curriculum. Both pre-service and in-service teachers will require extensive support to develop both the content and pedagogical skills required to effectively implement the new curriculum. LPTK programs for pre-service teachers will need to be modified. In-service teachers will require continued periodic (rather than one-off) Continuous Professional Development activities. KKG/MGMP is a potentially effective forum for teachers to learn from each-others' effective methods in implementing new practices. Staffing based on the change in subjects and number of hours per subject must also be taken into account.

1.2.4 Civil Service Reform

The Ministry of State Administration and Bureaucratic Reform (MenPAN) is now reforming the civil service system. Law No. 5/2014 on the Civil Administrative State (ASN) introduced a new type of government-contracted employee known as P3K (Pegawai Pemerintah dengan Perjanjian Kerja).[18] This could radically change the make-up and management of the teaching workforce, as the government will likely move away from the traditional civil servant hires and toward the government contracted hires. Teachers, as well as others such as health workers, will now become professional groups; special laws, such as the Law on Teachers, regulations and guidelines, will guide their management. P3K will be employed under individual contracts (agreements), which is a civil law instrument and not a public law instrument and which is normally guided by the general Labor Code. P3K are, however, going to be subject to ASN for employment conditions and contract terms. The contracts are to be for minimum 1 year with possible extension, and this limited term contract is a key differentiator from the traditional civil service hire.

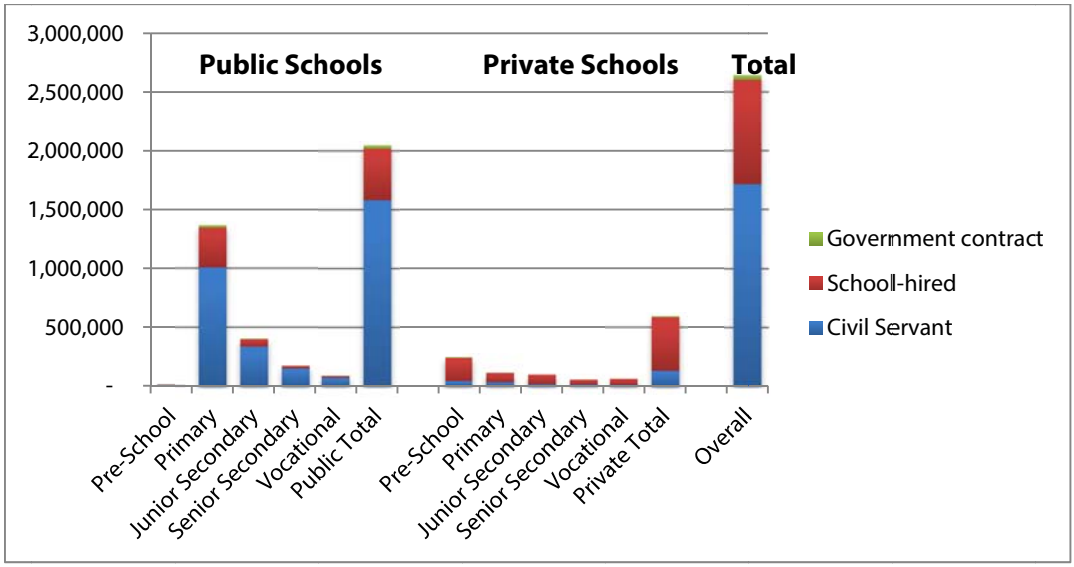
In considering the current makeup of the workforce by hiring type, public school teachers make up 78% of the teacher workforce from kindergarten through secondary school. Of the public school teachers, 77% are civil servants, 21% are school-hired, with the remaining 2% being contract teachers hired by the government[19]. In private schools, while 76% of teachers are school-hired, 22% are PNS teachers and the remaining 2% are contract teachers hired by the government. The fact that nearly a quarter of private school teachers are paid for by the government indicates that both private and public schools must be taken into account when considering teacher policy.

[17] A TIMSS Indonesia Video Study of 8th grade mathematics teachers (World Bank, 2014) indicates that practices encouraged in the new curriculum are rarely used. These techniques include investigative learning, the use of real-world contexts, applications, open-ended questioning, non-routine problems, and student-centered learning. While this study was only on mathematics at the junior secondary level, other studies and anecdotal evidence indicate similar situations exist across school levels and subjects.

[18] Pegawai Pemerintah dengan Perjanjian Kerja

[19] This group of contract teachers was hired before the P3K position was created, so they are a different type of contract teacher. The central, provincial or district government hired them, with 64% being hired at the district level. Contract teachers were more prevalent in the past, but in 2005 there was a freeze on hiring and a promise to convert all contract teachers to civil servants. Most of the conversion is now complete.

Figure 77. Public and Private teachers by school level and hiring type



Source: NUPTK 2012

Implications: The new P3K position provides a unique opportunity to create a more flexible, efficient and effective teaching workforce, but also presents various challenges. Many important decisions in terms of recruitment, hiring and management must be addressed. This will be elaborated in section 3.

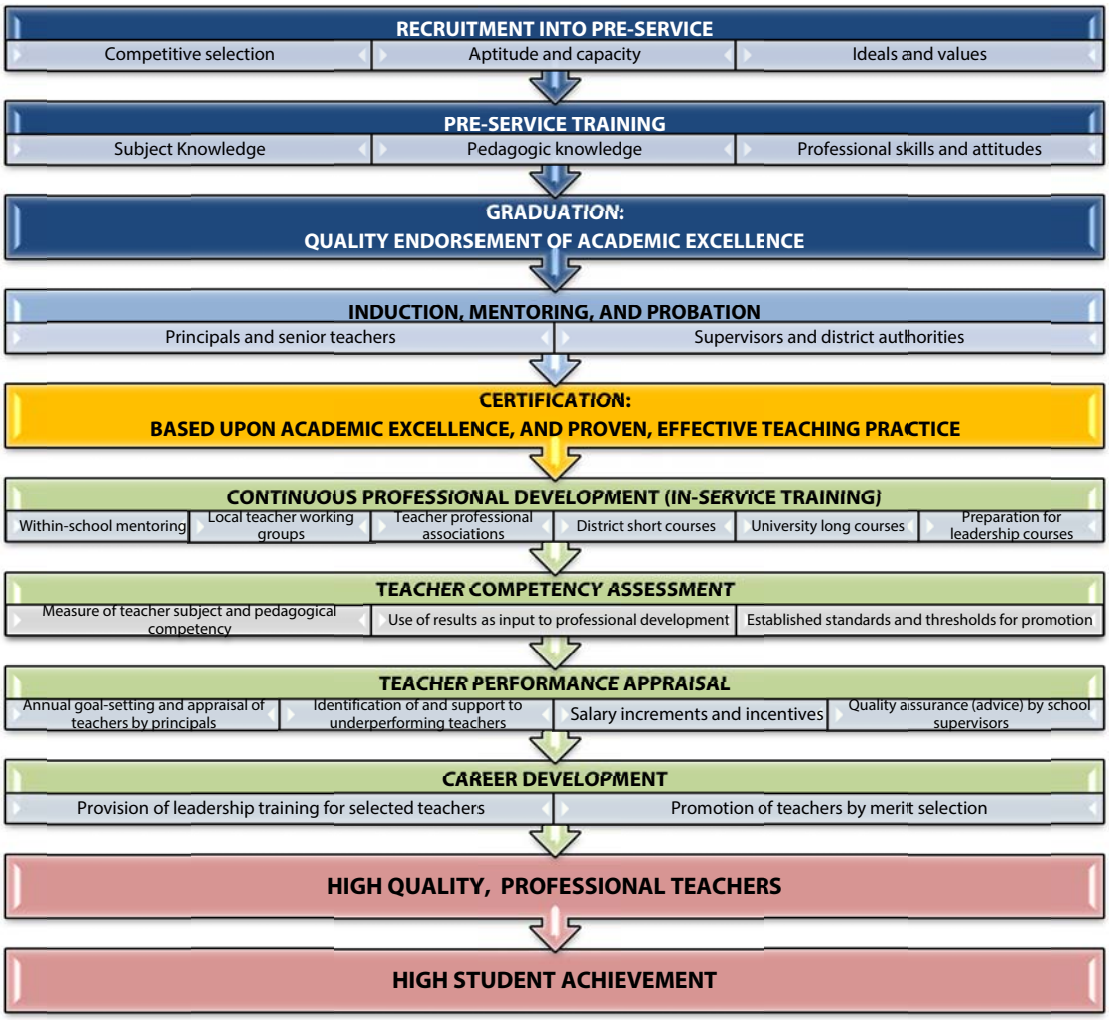
2. Teacher Professional Development and Quality Improvement

This section first presents a *Teacher Quality Framework* to orient the discussion on the policy directions to be considered in the *RPJMN* 2015-2020. Using the framework as a map, two overarching policy directions regarding teacher quality are then proposed. The first focuses on investing in future teachers while the second focuses on supporting teachers in the system. Each of these policy directions is made up of multiple proposed strategies and activities.

2.1 Teacher Quality Framework

Teacher quality is a multi-faceted concept that involves skills (knowledge) and actions (performance). The system must foster both aspects. The following diagram provides a quality framework for the development of teachers who can successfully produce students of high relative achievement. Based on inputs from other country models of teacher quality, this framework is designed specifically for Indonesia's context and existing and envisioned system. Each phase has a number of components that define the scope and characteristics of the phase. This model itself is holistic and needs to be the subject of a comprehensive policy that is underpinned by a total set of standards. It must be understood and worked on in a holistic manner by senior education managers at the national provincial, district and school level. Only when each component works in unison with the others will its effectiveness as a tool of improvement be realized.

Figure 78. Teacher Quality Framework



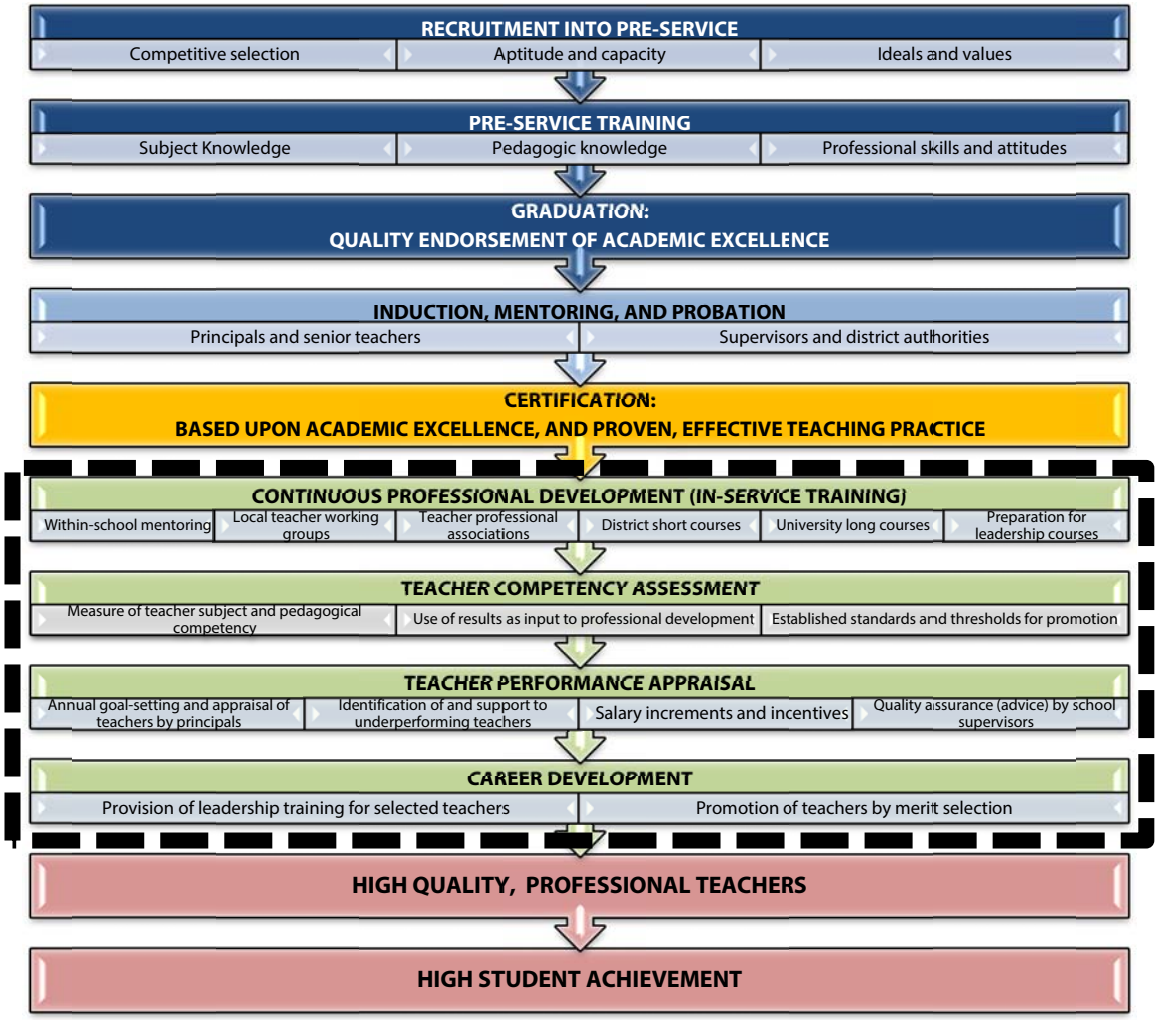
Students deserve a system where the very best teachers are working in schools and classrooms. This means governments need to establish systems which include the elements shown in the model above. It follows in sequence: selection of the most capable trainees for entry to the profession, provision of high quality initial training preparation and experiences, ensuring a balance between academic knowledge and the ability to impart this knowledge in the classroom, creating commitment and job-satisfaction, provision of promotional opportunity for the "best of the best", and ensuring a climate which encourages all teachers to engage in a program of continuous self-improvement as true professionals.

This model assists in identifying the series of quality improvements, many of which the Government of Indonesia has already systematically embarked upon and must now be fully implemented. Some of the components have been designed, piloted and accompanied with the necessary regulations, but must now be operationalized and/or scaled up. Transparent, consistent rules for implementation need to be laid out. It is the effectiveness of the implementation that will determine the effectiveness of the system and whether it improves teacher quality.

The framework can be split into two main sections. The first four phases (in blue) of *Recruitment*, *Pre-Service Training*, *Graduation* and *Induction, Mentoring and Probation* involve the development of the future teacher workforce and early support as they make the transition into the system. The latter four phases (in green) of *Continuous Professional Development*, *Teacher Competency Assessment*, *Teacher Performance Appraisal* and *Career Development* represent a system of accountability and management of the existing teaching workforce. This logical split is used for defining two policy directions: (1) Invest in future teachers, from pre-service to induction and early support and (2) Strengthening teacher quality, accountability and

management systems. Although logically these should be presented in sequence according to the framework, the latter policy will be presented first, as it is considered to be the more pressing priority area for addressing teacher quality.

2.2 Policy Direction 1: Strengthening teacher quality, accountability and management systems



Pusbangprodik of MOEC has already embarked on the development of a teacher accountability and management system that incorporates lessons learned and best practices found internationally for supporting teachers. The development has involved the passing of important supporting regulations and ministerial decrees, the design and piloting of components and the initial rollout of others. While this system is still in its infancy it has the potential to define and shape teacher quality in Indonesia. It is a challenging program to implement from both a technical and political standpoint. It will require a great deal of political will to follow through with certain aspects such as competency testing, which has already faced opposition from teachers unions and some members of parliament in previous rounds of the teacher reform. If this system falls prey to pressure or is not implemented with technical rigor then it could become another expensive attempt at reform that ultimately has little impact on results. If, on the other hand, the proper time, resources, quality assurance, and socialization are put into the effort then it has the potential to be revolutionary.

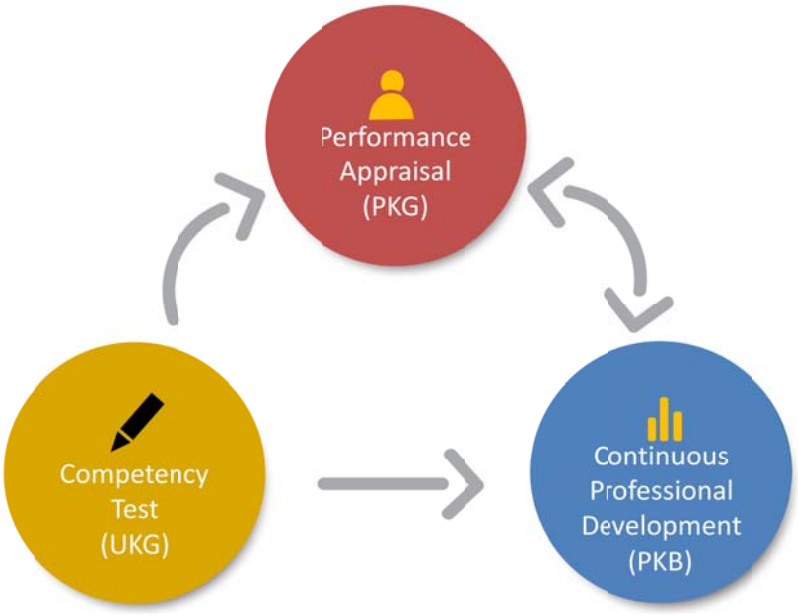
The following section explains the framework and its components, as well as important supporting activities.

2.2.1 An integrated framework for teacher professional support and accountability

MOEC, with support from BERMUTU – a program intended to help operationalizing the Teacher Law – has undertaken the massive task of developing a *Teacher Professional Management System* (TPMS) where the key elements of this future system form an "integrated framework" of requirements. The system makes the teacher directly accountable for both work performance through annual appraisal (PKG) and professional development through continuous professional development (PKB). The appraisal procedure requires open discussion and agreement between teacher and assessor and approval by the principal, if different. Both appraisal and CPD processes are monitored and supported at school level by supervisors. The test of minimum standard in professional and pedagogic competency (UKG) must also be passed in order to progress between the professional levels and the rate of progression depends on a credit point total based on the PKG (annual performance-based teacher appraisal) and PKB. The competency test is already an on-line test. When finalized, the teacher's on-line record will consist of all three elements, which will be available on the NUPTK database.

Teacher performance appraisal continues to be developed in this aligned Teacher Professional Management System. The interconnectedness of these elements is a complex process and the need to gain agreement and cooperation between a number of separate agencies for its development is already an achievement. Commencement in July 2014 is the target.

Figure 79. An Integrated Framework: the Teacher Professional Management System



Source: Model from Pusbangprodik

***Component 1:* Competency Testing (UKG) – an important measure of teacher quality that is related to student learning outcomes**

Competency Testing has had an unstable role since the teacher reform began, but is now beginning to find its place in the integrated teacher accountability and management system. It was a cornerstone of the original proposed certification model, only to be eliminated by Parliament. It came back into the picture when it became clear that the portfolio alone was not sufficient in determining teacher qualifications, but then the threshold was lowered to meet the required quota of teachers to go through certification rather than ensuring a specific standard. It is now part of the integrated framework for teacher accountability, with the purpose of helping teachers identify strengths and weaknesses, which can then be addressed in their annual career development plan. It is also intended to be used as a threshold for civil servant teachers to advance from one level to another. This is an excellent design in theory, but will it actually be followed

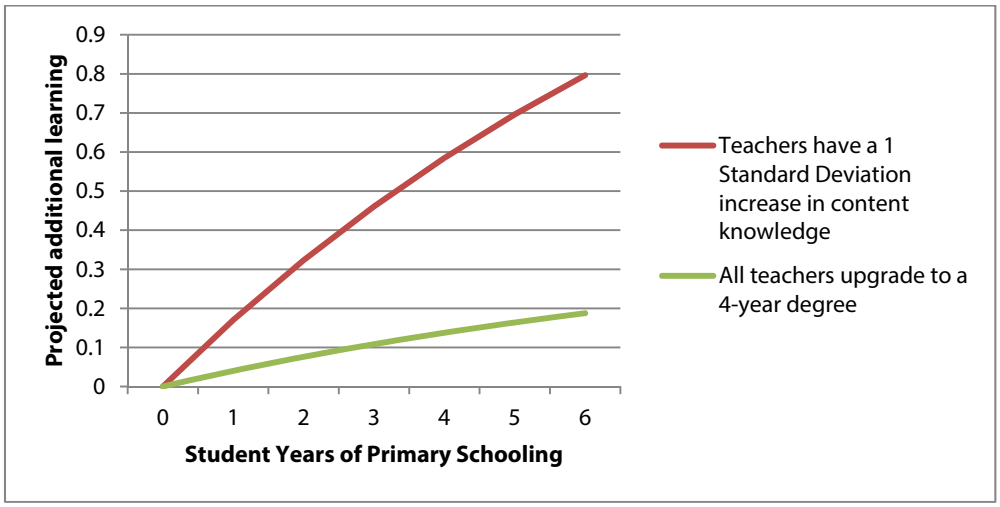
through or will it end up being watered down or eliminated yet again? The political will must exist to ensure teachers meet minimum thresholds of subject matter and pedagogical competency.

Teacher competency is, of course, made up of multiple factors. Testing can only capture certain aspects of a teacher's knowledge, but recent studies highlight just how important this component is in relation to student learning outcomes. Of all factors explored in a 2011 video study of junior secondary mathematics education teachers, teacher knowledge (as measured with a teacher competency test similar to UKG) had the strongest relationship to student learning outcomes[20] and standardized coefficients indicate that a 1.0 standard deviation increase in teacher assessment scores is related to a 0.23 standard deviation increase in student test scores over the course of one year (Chang, Shaeffer et al. 2013). A similar result was obtained in a large-scale teacher certification study, where teacher knowledge had a particularly strong relationship with student learning outcomes as well as a large coefficient. Results are shown in Box 19.

Box 19. Estimates of student learning based on teacher knowledge vs. teacher degree

De Ree (2013) estimated how student learning in Indonesia would change over time based on whether the student's teacher(s) had an S1 degree and whether their teacher's knowledge, as measured through a competency test, was higher. The results indicate a positive, statistically significant correlation for year-to-year learning gains in both cases, but the results of the teacher's higher knowledge were much larger. The diagram below estimates what would happen to student learning in primary school over six grades for two different scenarios. The first estimates what would happen to student performance in the case where all primary teachers obtain their 4-year degree, as required by the Teacher Law.[21] The increase is not particularly large. Part of the problem is teachers both with and without bachelor's degrees have low levels of subject matter knowledge on average; simply having a degree is not necessarily a good indicator of teacher knowledge. The red curve projects a situation in which the subject matter knowledge of all teachers is lifted by 1 standard deviation. The projected effects of such a change in Indonesia are large, and certainly much larger than the effects of obtaining a bachelor's diploma. Across the board increases in teacher subject matter of one standard deviation, is expected to lead to a 0.8 standard deviation increase in student learning by the time students finish six years of primary schooling[22]

Figure 80. Estimates of student learning over six years of Primary School based on teacher knowledge vs. Degree



Source: De Ree, 2013

[20] The results indicate that both subject matter knowledge and pedagogical knowledge, in almost all cases, were well above the generally accepted 5 percent statistical significance threshold and typically above the 1 percent significance threshold.

[21] In the data set, 50% of teachers already had their S1 degree, so the line represents what would happen if the remaining 50% were to get their degree.

[22] Note: the teacher effects are compounded effects. On a year-to-year basis, the effects of a more knowledgeable teacher are smaller -- at around 0.15 standard deviation -- but over six years, these effects add up. The effects are therefore notably much larger after spending six years with a more knowledgeable teacher.

The results from both studies have very important policy implications in regards to the importance of ensuring teachers are knowledgeable about the subjects they teach. If thresholds are set and enforced then teachers who fall below the threshold must work in order to progress. The CPD activities become more meaningful because there is a competency goal to reach. If, on the other hand, the threshold is set low or is not enforced, teachers will be much less likely to ensure they improve their content and pedagogical knowledge.

Component 2: ***Teacher performance appraisal: Sustaining a post-certification momentum for continuous improvement in teacher quality***

Performance appraisal has recently garnered a great deal of attention internationally as a tool for supporting teachers and improving performance. One of the most influential studies on teacher performance is the Measures of Effective Teaching (MET) project by the Bill and Melinda Gates Foundation, which identified appraisal and provision of *meaningful* feedback to teachers as one of the most powerful tools in improving teacher quality and performance (Kane & Staiger 2012).

Currently in Indonesia, once teachers become certified, neither the continuation of certified status, nor the payment of the professional allowance is conditional upon subsequent performance. There is concern that, once certified, teachers have no further incentive to improve the quality of their teaching. The enormous expense of doubling teacher salaries and paying the professional allowance will no longer continue the impetus for improvement to teacher quality. The Indonesian teacher salary system leaves little room for explicitly rewarding top performers individually (in this respect, Indonesia is not very different than many other countries in the world).

However, quality improvement of teachers goes beyond the issue of teacher certification. On-going professional development, including the fostering of teacher dialogue and desire for professional growth, is central to school improvement. Teacher performance appraisal is currently being trialed in selected pilot schools in Indonesia and will be evaluated prior to extension more widely, including the use of on-line methodologies. This school-based scheme develops the skills of teacher assessment and evaluation within the context of everyday operation of the school. It develops the skills of both supervisors and teachers. The outcomes of the annual performance appraisal are being linked to the salary incremental scale[23].

One important issue to keep in mind with performance appraisal is that it will be ineffective if it is treated as an administrative and bureaucratic task to be completed. Depending on how it is actually done, the high level of assessments and performance appraisals might dominate the scene to the detriment of really building instructional practice in a supportive environment. The instrument cannot be simply viewed as providing an end score. The integrated framework attempts to address this by emphasizing the performance appraisal as a tool for discussion and feedback that will then be used to define the teacher's continuous professional development plan. For effectiveness it is essential that both the assessor and teacher understand its purpose and see its value. Assessors should see it as a unique opportunity for dialogue and feedback. Teachers should see it as an opportunity to get support and, through a two-way process, develop a strategy for improvement. Managers should see it as providing inputs and feedback for information for evidence-based policy making. In order for this view to be taken, though, there will need to be strong training and possibly steps such as certification of assessors to ensure they understand how to use the instrument.

Interlocking policy changes have created an *integrated framework*, which, if wisely fostered and funded by the Indonesian government, will sustain the momentum for improved teacher quality and will establish a quality assurance mechanism to ensure continuing high education standards into the future. The successful implementation of these policies will permanently transform the nature of Indonesian education. The integrated framework is being designed to sustain and continually enhance the quality and accountability of teachers after they have been certified. This will be achieved by (i) reviewing and, to the extent possible,

[23] Regulation 16/2009, MenPAN (Ministry for Government Apparatus, Empowerment and Bureaucratic Reforms)

reforming existing policies, procedures and instruments for performance appraisal for progression and promotion; (ii) linking incentives created under the Teacher Law to career advancement; and, (iii) improving lines of accountability between managers (principals/supervisors) and teachers

The policies, processes and instruments relating to continuous professional development, progression and promotion, performance appraisal, and under-performance need to be developed and implemented to make Indonesia's education system self-sustaining. Their refinement and dissemination to provinces and districts need to be a priority in the Ministry of Education and Culture to ensure continuation. Funding for their implementation right across the nation should be a priority.

Component 3: ***Continuous professional development: Incentives and structures to grow quality teachers***

Improved quality of teaching depends heavily on the motivation teachers have towards continuous professional development. This motivation results from the incentives and rewards teachers receive for improvement – in higher salaries and improved conditions of service, as well as the professionalism that comes with satisfaction from a task well performed. One of the highlights of recent reforms has been the development of new and revised policies, plans, and procedures for continuing education and career development of certified teachers. This is also intended to ensure stronger teacher accountability and to provide incentives for good performance.

Some policies and regulations already ratified include functional credits for teachers, academic upgrading of in-service teachers, issue of a Ministerial decree on a new teacher induction program, and development of a framework for continuous professional development (including the management of underperforming teachers). Teacher performance appraisal has been piloted and the instruments have been revised prior to full implementation nationally in 2014.

The continuous professional development model covers a number of inter-related aspects of in-service teacher training, including within-school teacher induction and the mentoring provided by effective supervisors, activities provided by local teacher working groups (KKG/MGMP), teacher professional associations, district-level short courses, university long courses and distance education courses, and preparation through leadership courses for principals and supervisors.

Building the capacity of teacher working groups has been a significant step. As discussed above, it has been shown that teachers who participated in the BERMUTU-funded working groups obtained improved student scores. However, this was an intensive activity and, as it gained momentum, it used modules focused predominantly on class action research, lesson study, active learning, group work and similar effective classroom methodologies, and followed a structured program of improvement based on subject content framed within a comprehensive program of classroom improvement. To work properly this model needed budget support, and it is recommended that central agencies, provincial agencies, districts and schools work cooperatively together to identify sufficient resources to enable this successful model for classroom improvement to continue and expand. The criteria for an effective KKG-MGMP include: (a) availability of fund to support the activity; (b) well-trained Guru Pemandu; and (c) the school principals and supervisors to be actively engaged and fully comprehend the importance of this activity.

There are multiple means of CPD, including self-study, courses, study groups and mixed modes. MOEC must ensure that learning by teachers is not approached in a mechanistic manner. For the different modes of CPD to work properly and to benefit the system, they should be understood as accessible learning opportunities that are inseparable from other aspects of the TPMS.

Principals and supervisors must also be required to take a leadership role in the management and delivery of programs of educational improvement.

Linking the performance-competency-development elements

Effective operation of a teacher performance appraisal instrument depends on teacher competencies being in alignment with widely accepted national vision and goals linked to student competency standards. The reform of teacher accountability and incentives for teacher appraisal and career advancement based on teacher competencies needs to be firmly underpinned by an effective system of measuring student learning outcomes against which to measure changes in teacher, principal and supervisor performance. The major issue, however, is to ensure reliability and consistency of results through effective training of assessors (senior teachers, principals, and supervisors).

The teacher performance appraisal instrument is linked to teacher salary progression. The scoring system incorporates the intention of PerMenPAN&RB Regulation 16/2009 that both teacher performance appraisal and continuous professional development will be used to gain credit points. The earliest implementation of the teacher performance appraisal program will not be until July 2014. The complexity of the teacher appraisal process, its links with salary progression for teachers and the need for assessors to be well trained prior to commencement has led to a prudent and well-prepared approach.

This is truly a major change and improvement in the provision of future incentives for progression in the education system, and a significant motivation for teachers to embark on a career of educational improvement for the benefit of their students. It is important, therefore, that, following training in their working groups, principals and supervisors commence using the appraisal manual of instruction and instrument with teachers in their school. During this period principals and supervisors could visit classrooms, practice using the instrument with their teachers and commence an active dialogue about classroom activities and provide support for teachers. The attendance of principals and supervisors at teacher working group meetings will be important to ensure they gain credibility in the advice they provide. The additional training provided to the selected assessors is an essential improvement in the program.

Continuous professional development (CPD) has been built into the framework. This is fundamental to the successful operation of the integrated framework. Following identification of a teacher's strengths and weaknesses, it is critical to be able to provide support, resources and information to shape the teacher's improvement. This is essential to ensure on-going motivation and enthusiasm for the task by the teacher.

MOEC has produced learning modules through the P4TK national training agencies. These are designed to supply learning materials for teachers, which relate to their level of competency and stage of development. A Ministerial policy paper has been published on the concept of *integrated learning*. Under this policy LPMP and P4TK as well as LPTK can be contracted to produce materials to fill some of the gaps in this CPD training framework. Ultimately these will be available on-line and, under the guidance of the principal, supervisors or district office, teachers will be able to access appropriate material to improve their subject knowledge and teaching skills to meet needs identified jointly with the school principal during the annual appraisal of performance. Following entry of the performance appraisal scores, the on-line system will be able to make suggestions of which learning modules will assist the teacher best. In this process the primary agency for delivery of continuous professional development will be local teacher working group, and the school itself.

The two mandated processes of performance appraisal and continuous professional development will regulate the rate of career progression of individual teachers and other education professionals. These form the core of the performance management process for educational personnel which aims to achieve a sustainable process of improvement in standards of teaching, educational management and teaching. A comprehensive legislative framework described in Chapter 3 of PermenMenPAN 16/2009 governs the career progression of all education personnel. This has been integrated with legislation specifying the competency requirements of teachers and counselors, including specific competencies required for increased responsibilities and levels of proficiency in core and additional competencies related to career stages. This requires two main processes: (i) annual, evidence-based and criterion-referenced performance appraisal for all education professionals; and, (ii) regular, continuing professional development (CPD) based on identified teacher and school needs. This also covers the management of teacher underperformance and the requirement that principals must provide special support for teachers who are identified in this process as

having considerable difficulties with their teaching and whose lack of competence may be interfering with the learning and welfare of children.

As well as assigning specific levels of proficiency in the core legislated competencies to the four defined professional career stages, alternative career paths have also been added to the overall career framework, to accommodate personnel who choose to enter educational administration and management and those whose interest also lies in teacher development as well as direct teaching of pupils. Specific skills and competencies required for these alternative career paths have been drafted and added to the career framework. At the time of this review, initial drafts were being refined through a process of focus group meetings and discussions with teachers, principals and supervisors. Once agreed, this complete descriptive framework for teacher career progression will form the basis for both progression criteria through the professional levels and the "curriculum" framework for CPD.

A critical decision in the scaling up of this system is whether public school-hired (GTT) teachers are able to participate in this system. The model is developed around the civil service system in terms of career stages and advancement. The model has also been modified in a way that private school teachers are also able to participate. The school-hired teachers make up over 20% of the teacher workforce.

Developing a monitoring and evaluation system for the Teacher Professional Management System

An unfortunate reality of any system involving high stakes evaluations of individuals is the susceptibility to manipulation and corruption. The fact that the performance management system involves data from multiple sources helps to at least reduce the level of influence any one person could have over the manipulation. The Competency Testing is a particularly critical component in part because it is a relatively objective method of evaluation that cannot be easily manipulated (although even this component will require rigorous design and monitoring in order to ensure minimal opportunities for manipulation). This component will possibly play the greatest role in ensuring that a threshold is met and therefore must not be watered down as has happened in the past.

For the system as a whole, though, it is essential that there be a monitoring and evaluation system run by an independent body. The system should capture feedback and have a complaint-handling component. A Central Independent Monitoring Unit (CIMU) system has been used for various programs (e.g. Bantuan Khusus *Sekolah* JPS and SIGP) to assess implementation progress and good governance/anti-corruption features. It is recommended that the same monitoring approach is implemented in the TPMS as well as in the career progression system.

Summary of Key Strategies and Activities:

Competency Testing (CT) Component

- Improve quality of CT instrument and mechanism to ensure reliability and governance
- Use of CT to direct CPD and for ensuring teachers reach specified minimum levels of competency.
- Improve access for teachers and transparency of results (e.g. UKG online)
- Allow teachers to access with frequency as needed

Performance Appraisal

- Ensure quality and transparency:
  - Training of performance evaluators: to ensure reliability and consistency of results
  - Quality of tools
  - Socialization for all stakeholders (teachers, managers at local level)
  - Aim for a process free from conflict of interest or subjectivism

Continuous Professional Development (CPD)

- **Establish a Learning Management System (LMS) with the following principles:**
  - Access: with range of relevant CPD options and make accessible through a variety of media
  - Motivation: incentive structure (cumulative scores and standards for career progression as an integral part of TPMS)
  - Quality: Ensure that teachers will gain through CPD activities (learning resources, transmission, etc.)
  - Effectiveness: Take measures to ensure participation of teachers in CPD is not just mechanistic

- **Link CPD planning to student learning**
  - Include in reflection portion of PKG – results agreement with aspect relating lesson planning and work related to student learning

- **Ensure the Teacher Professional Management System is effectively rolled out and understood**
  - Provide a high degree of training to assessors and teachers so that the purpose and process is properly understood and accepted
  - Certify assessors on performance appraisal so that the observations and other appraisal activities are properly conducted
  - Take steps to ensure the TPMS is viewed as a supportive, positive process rather than an administrative and bureaucratic measure
  - Take steps to ensure that the TPMS philosophy and purpose is properly understood by school principals, supervisors and managers

- **Develop an independent monitoring and evaluation system for the Teacher Professional Management System to ensure quality and governance**
  - Run by independent body (similar to CIMU)
  - Capture feedback
  - Complaint handling component (in part to address corruption/collusion aspects)

- **Strengthen collaboration across levels (Central and District) to support implementation**
  - Implementation/operationalization of PKG
  - Provision of opportunities to conduct value-added CPD activities and gain credit points
  - Facilitation of working groups (including funding and monitoring)

2.2.2 Career development: Incentives for school and education leadership

In the long run, the reforms being promoted in the teacher career cycle—from attracting better recruits to ensuring that they know their subjects well and can teach them effectively through better and more school-based training—are most important in developing a cadre of teachers who deserve both professional certification and the rewards that come with it. To the extent these reforms are implemented successfully, of course, less time and fewer resources will need to be devoted to "catch-up" in-service training, and more time and more resources can be used for more systematic, career-long continuing professional development. Although many ministerial reforms have been introduced to improve the system of teacher management, a major factor in their implementation and final success is the adoption of a proper recruitment and selection process for principals and supervisors. Mechanisms are now being piloted to ensure that this process is based on merit and competence instead of political or personal favoritism.

The early identification of effective teachers with the capacity and motivation for school leadership is an important area for future focus. New Regulations have been mandated which prescribe the role and competencies required by school principals and school supervisors. It is essential that these be further studied by reviewing how effective principals and supervisors work in the field and ensuring that such qualities are used in both the selection of future executive staff and the training courses, which should become a compulsory pre-requisite for selection. These qualities should also include a desire to transfer to a variety of school positions and roles in the course of preparation for leadership. This will ensure the school

experience of such personnel is diverse and flexible, and able to meet the requirements of a new and high quality education system in Indonesia

It is important, also, to focus not only on individual capacity building (as the current pre-service, induction, probation, certification, professional development, and teacher appraisal process does) but also on whole-school, collective capacity building. This is where the new roles for the principal, supported by the supervisor, become so essential in the process of professionalizing teaching.

In addition, the selection of principals and supervisors needs to be merit-based and closely related to the needs of the particular position to be filled. In prior years of leadership training and widespread school experience a teacher may become well prepared for the next promotion step. However, senior school executives also need to be "matched" to the local position. This means that, at the local school level, a school-based interview panel should be trained, and have responsibility for selecting a new principal from a group of, say, three of the best trained candidates available in the district. All three of the interviewees are well trained and able to do the job. However, only one preferred by the panel is the "best match" for the position. This builds an effective bond between the school and the "most suitable" candidate.

Thus, effective career development requires: (a) provision of leadership training for selected teachers; and, (b) promotion of teachers by merit selection.

2.2.3 Underperformance: Suspension of a teacher's certification

All teachers must continually meet the standards required by the education system. There must be provision for those who are unable to maintain this minimum and must undertake defined re-development or forfeit their entitlement to a teaching position. There can be wide differences of opinion about what constitutes teacher inefficiency, and cancellation of certification can face union opposition.

Some state government systems in Australia, for example, require an annual confirmation by the principal that all teachers on their staff are efficient. This means the schools must have some sort of system in place to gather data on their teachers about how well they work. This system usually operates through the school executive. For example, each subject head-teacher (there may be 10 or 12 in a large high school of, say, 1500 students) manages 10 or so subject teachers, and is responsible for the quality of their work, or their "efficiency".

When a teacher is identified as "experiencing professional difficulties" it is the responsibility of the subject head teacher to advise the principal that the teacher's efficiency has been "called into question" and a professional development plan of support and improvement is being put in place in consultation with the teacher. This involves identifying weaknesses and setting targets for improvement, more regular observation of the teacher's classroom, examination of the teacher's lesson preparation, inspection of the students' books and test results, and other areas may all be necessary. At an agreed time (usually after ten weeks) and following a period of observation, the subject head or the principal will write a report on the teacher's progress towards improving the areas of deficiency. If there has been distinct improvement, the program of improvement may cease. If not, it continues for a further 10 weeks, at which time, in the face of deterioration, the teacher can be suspended with dismissal action being commenced.

Any professional development plan will be drawn up for implementation by senior staff under the guidance of the principal. The principal will usually liaise with union representatives where necessary, and ensure "natural justice" takes place for all parties.

Failure to respond to further development opportunities does not always mean dismissal. A poor teacher could have his certification suspended or may even be "de-certified" (with consequent removal of part or all of his professional allowance) until improvement is considered adequate. This action may force the inadequate teacher to take positive action to improve their teaching. Nevertheless, persistently incompetent and uncooperative teachers detract from the effectiveness of the profession and reduce the confidence parents have in the school. Although dismissal action is resisted by unions and others who must take face-to-face action against the teacher, it is a critical consequence of poor quality teaching and inadequate

support for underperforming teachers unable to cope in the school. Teaching is a demanding and skilled profession. Even though the number of poorly performing teachers is, fortunately, quite small, for senior staff and administrators to ignore complaints about poor quality teachers will have severe consequences for the standard of education available through the school system.

2.2.4 Teacher absenteeism: Undermining teacher morale

Teacher absenteeism is an important indicator of the dedication, professionalism and performance of teachers. On any school day, up to one in five teachers can be absent from Indonesian schools without authority. This not only reduces teacher productivity, it also impairs the continuity of instruction and seriously undermines the general morale of teachers in schools. Using a 2003 Study by SMERU[24] of teacher absenteeism on randomly selected public primary schools and another conducted in 2008 using nationally representative samples of primary schools baseline absenteeism rates were found to be 19% and 14% respectively. Another national representative study was conducted in 2013 and 2014, in collaboration with the ACDP, a program jointly funded by the European Commission and DFAT, to determine the rate and determinants of teacher absenteeism across Indonesia. Using larger sample of schools and teachers than previous studies, this study determined that around one in ten teachers are absent from school when they were scheduled to be teaching and that the rate of teachers absent from the classroom while they were at school, which also has implications for student learning, was generally higher than the rate of teacher absence from school. Although the rate of teacher absenteeism has been halved over a decade, the rate is still too high and the high absence of teachers from the classroom (rather than from school) indicates the critical need for better monitoring and management of teachers in school by the principal, supervisors and the community.

A Ministry study[25] conducted in 2010 identified a number of the reasons for high teacher absenteeism including lack of control from superiors/government officials, lack of concern by community members, disease and poverty, poor training and ability to manage their teaching task, lack of transportation to the school, and conflict between individual interests and the role of the teacher (especially in women). There is a high level of teacher absenteeism and this has an impact on the availability of school operational funds for other purposes such as remedial activities, on the school image and school performance, and reduces student achievement (especially in isolated areas), and reduces teacher motivation.

Five major gaps are evident in the current understanding of teacher absenteeism in Indonesia: (a) teacher absenteeism refers not only to absence from school, but also absence from class when the teacher is actually at school; (b) research has so far been limited to absenteeism in elementary schools only; (c) lack of understanding of the main causes of absenteeism, whether due to teacher welfare, due to lack of motivation or simply opportunistic behavior; (e) there is little research on evaluation of interventions that aim to address teacher absenteeism; and, (f) a recent survey of secondary school principals stated that most do not believe teacher absenteeism hampers students' learning process.

While the need for research to develop and refine policy continues, the Ministry and Districts need to trial and adopt practices that will begin to stem the flood of teacher absenteeism afflicting the system. Responsibility for managing absenteeism rests initially with the school principal and school supervisor. Currently, many schools are already overstaffed and can also employ additional staff at low cost. Thus there appears to be little incentive to pursue the persistent absentee teacher.

Districts should promulgate clear conditions under which teachers are entitled to be absent such as sickness (5 days), personal circumstances (1 day), and so on with a prescribed maximum available each year. All teachers exceeding this maximum should be reported to the District office and have salary deducted for that day. Such records should be an auditable document held by the school and the District office. However, much will depend upon the willingness of school principals and school supervisors to enforce such policies.

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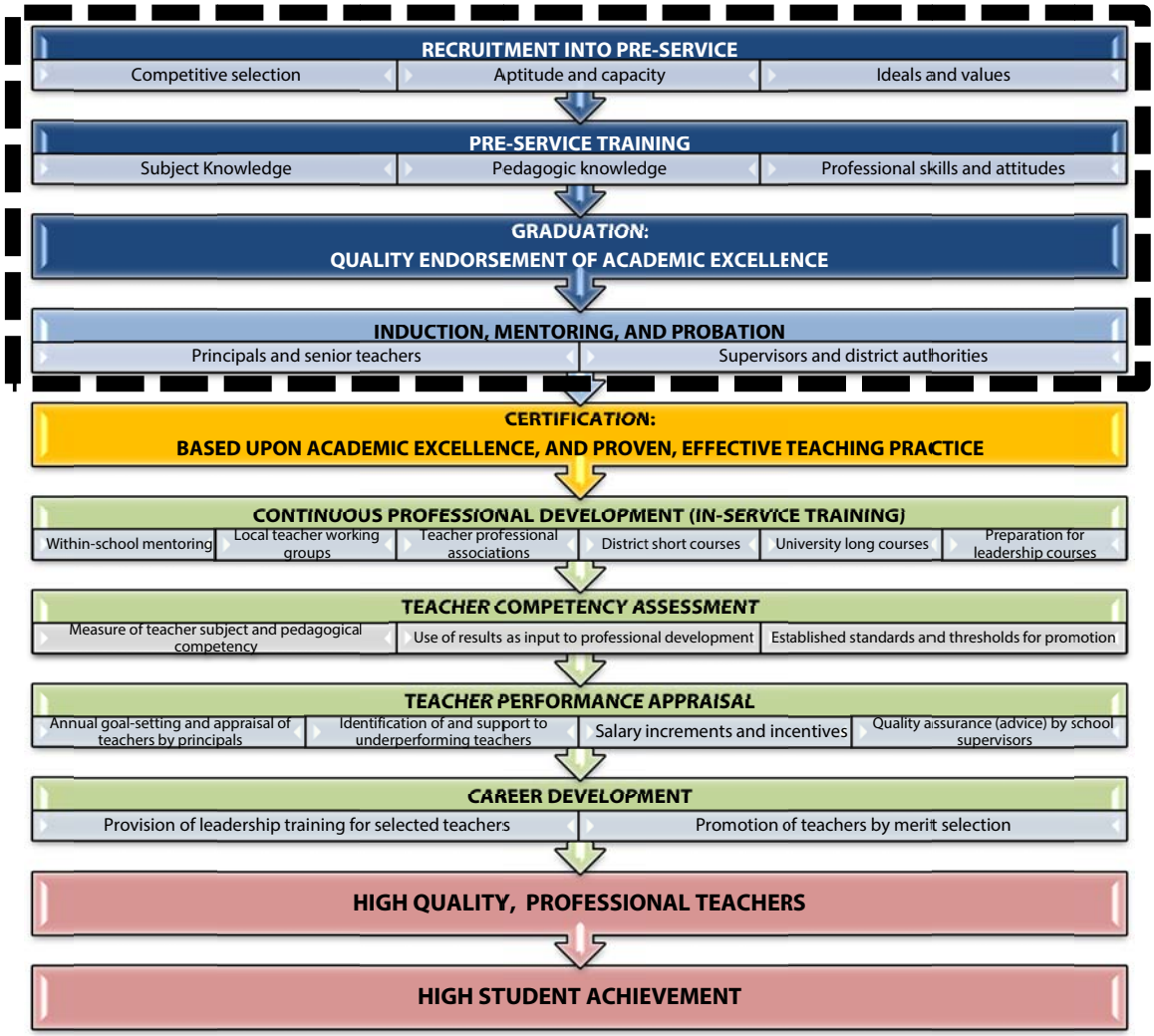
[24] SMERU Research Institute

[25] Ministry of Education and Culture, *Study on Teacher Absenteeism (Studi Kemangkiran Guru)*, Centre of Policy Studies, 2010

2.3 Policy Direction 2: Investing in future teachers, from pre-service to induction and early support



With certification, a great deal of emphasis has been placed on teachers already in the system. While attention must be given to in-service teachers, Indonesia is now at a stage where more emphasis must be placed on investing in future teachers in order to ensure longer-term quality of the educational system. The attractiveness of the teaching profession due to the increased salary provides a unique opportunity to produce cohorts of high quality, fully prepared teachers. This can only be accomplished if filters are in place to appropriately identify and select the best candidates early and then support them from pre-service to induction and the early stages of their career. This section explores what has already been done and needs to be supported going forward, as well as identifies areas that need to be addressed.

A key proposal is to have a comprehensive reform of LPTKs, positioning them to be not only training providers, but also partners in meeting the need for future teachers based on forecasts. The curriculum and approaches should also reflect actual needs in terms of subject areas and types, also equipping teachers with skills that make them more flexible. This vision involves collaboration between LPTKs and government (Central, Provincial and District) for both quality and distribution.

There are approximately 44 public and 387 private LPTK in the system (Pangkalan Data, 2014). The number of LPTK has also increased dramatically in recent years. In 2010 the number of LPTK was 241, but had increased to 415 by 2013 (Lampost, 2014). This increase of over 70 percent in such a short period is cause for

concern in terms of quality. Currently many of the small private LPTK are of relatively lower quality and are operating relatively unchecked. The quality of LPTKs must also be ensured through an improved operational licensing mechanism and accreditation process. Large numbers of teachers are being produced and the expansion is unfortunately occurring to a large extent in private teacher training colleges that are generally of lower quality. Additionally, in their rush to expand to meet the demand for those who want to enroll, their programs are also likely to be occurring at the sacrifice of even further reduced quality. The system needs amendments to curb these unintended consequences of the certification program. Competition can be increased by requiring universities to produce the right number of graduates to meet labor market demands and by calling a halt to the proliferation of private universities of dubious quality.

Policy makers are aware of this changing scenario, and commencing in 2013 the government has set an annual quota of 40,000 teacher candidates to enroll at private and state universities. This decision is intended to ensure that the number of student teachers admitted each year will match the number of teachers expected to retire four years later (when the cohort is graduating). The forecasting must become more sophisticated, taking into account multiple factors including the retirement wave (including the subject and location of teachers retiring), expected areas of expansion,

Finally, the initial years of a teacher are critical and require mentoring and feedback, as well as a probationary period and a deferral of certification. The groundwork has been laid with regulation 27/2010 and must now be operationalized.

This section will first provide an analysis of Indonesia's current system relative to other countries for screening teachers. This will be followed by

2.3.1 Where and how should filters or screens take place in teacher training and first years?

With a large number of teachers being produced for a small number of positions, there is a clear need for filtering. In the report *Preparing Teachers around the World*, the process of teacher education, certification and evaluation is described as a "pipeline" (Educational Testing Service, 2003)[26]. The report identifies eight procedural steps along which teacher trainees in most education systems must pass through on the path to final employment. Each step can be used by authorities in screening teachers as they progress from the initial decision to train as a teacher to becoming fully qualified professional. Because each represents a necessary step the trainee must take, the authors describe them as "filters" used by the particular education system to assess the quality of trainee teachers and to monitor their progress as their competencies develop, and, if necessary, to "weed out" those unsuited for teaching.

Different education systems use these filters in different ways. Some education systems place more emphasis on some of these components of the model rather than others. It is not necessary to cover all filters. The following table provides a general comparison of the differing emphases placed on each of these filters in different countries:

[26] *Preparing Teachers Around the World*, A Policy Information Report written by Wang, A.H., Coleman, A.B., Coley, R.J., Phelps, R.P. and the Educational Testing Service, Princeton. New Jersey, 2003

Table 27. International comparison of filters or screens used in the Teacher Training "pipeline" (with the addition of Indonesia)[27]

Step	Steps in the Training Pipeline	High Emphasis	Medium Emphasis	Low or No Emphasis
1	Entry to Teacher Education Program (undergraduate or graduate)	Japan, Korea, Netherlands, Singapore	Australia, Hong Kong, United States	England, **INDONESIA**
2	Evaluation of Practical Experience	England, Japan, Netherlands	Australia, Hong Kong, Korea, Singapore, **INDONESIA**	United States
3	Exit from Teacher Education Program	Australia, Korea, Singapore	Netherlands, United States	England, Hong Kong, Japan **INDONESIA**
4	Certification	England, United States	Australia **INDONESIA**	Hong Kong, Japan, Korea Netherlands, Singapore
5	Hiring/Employment	Korea, **INDONESIA**	Japan, Singapore	Australia, England, Hong Kong, Netherlands, United States,
6	Evaluation of Induction Period		Japan, Singapore	Australia, England, Hong Kong, Korea, Netherlands, United States, **INDONESIA**
7	Evaluation of Professional Development	Japan, Korea	Hong Kong	Australia, England, Netherlands, Singapore, United States, **INDONESIA**
8	Evaluation of Probation Period (before tenure is given)	Hong Kong, Japan	Australia, England, Netherlands	Korea, Singapore, United States **INDONESIA**

Source: Preparing Teachers Around the World, A Policy Information Report written by Wang, A.H., Coleman, A.B., Coley, R.J., Phelps, R.P. and the Educational Testing Service, Princeton. New Jersey, with Indonesia added separately

Note: Blue Arrows indicate the direction in which it is currently heading with existing policies and programs. The orange arrows are areas where it is recommended more emphasis be placed.

The table shows, for example, that while a country such as Singapore places a high emphasis on the academic (school) examination results the trainee has on entry into the teacher training system, it places a low level of emphasis on teacher certification. All other countries listed here have no further testing requirement after the completion of pre-service training for teachers to gain certification. These countries, including those listed in the table above (Hong Kong, Japan, Korea, the Netherlands and Singapore) simply accept the graduating award from the training institute as adequate for certification. Often this document serves as the teaching certificate, and is then usually valid for life, unless the teacher resigns from the system and later seeks re-employment.

The "pipeline" also illustrates that in most countries certification is a pre-requisite for hiring, and the professional opinion of the principal ("the assessor") on the teacher's work is not necessary for permanent employment. However, this is not so in all countries. For example, in Australia, all states initially employ teachers on probation based on their teaching qualification gained at university. This pre-service training

[27] *Preparing Teachers Around the World,* A Policy Information Report written by Wang, A.H., Coleman, A.B., Coley, R.J., Phelps, R.P. and the Educational Testing Service, Princeton. New Jersey,

will usually consist of, either a four-year integrated subject-content and methodology degree, or a three-year subject content degree plus a one-year diploma of teaching course. All new teachers are placed on at least one year's probation (with the support of a school-level induction program) at the end of which an assessment report is written on the teacher by the principal, which, if satisfactory, results in the award of a teachers' certificate. This certification really involves two separate elements: (a) an academic degree gained at the initial university (which includes one or two semesters of in-school supervised classroom teaching practice); and, (b) at least one year's probationary classroom teaching under the direct supervision of a mentor who provides a written assessment report at the end of that year (this takes place in the workplace)

This process is considered to be an appropriate balance between the pre-service education provided by a training institution and the practical on-site judgment of the professional school educator. No teacher is granted permanent full-time employment unless they receive a satisfactory in-school report on their work at the end of the probationary period. The opinion of the principal on the teacher's work at the end of the induction (probationary) period must be considered before the teacher is given permanency by the system.

Indonesia was not included in the original table of "filters". However, its place in each filter can be postulated and this is currently changing as educational reform takes place. For example, Indonesia places low emphasis on the entry of teacher trainees for university study. This will change as trainee recruitment standards rise and restrictions on the number entering to train as teachers increase. This will result in greater competition for places and improved quality of intake. Indonesia's greater emphasis on the certification process in recent years has increased the importance of certification as a filter in ensuring only those teachers reaching this standard are recruited into teaching, or remain in teaching. At the same time, there has been very little actual filtering up to this point, as every teacher who undergoes certification is able to obtain it. It is important now that the government enforce rules established to ensure only high quality candidates enter or remain as teachers. It is also important to maintain a balance between the number of potentially needed teachers and the production of teachers from LPTK and to ensure that in the long run the bright candidates continue to be attracted into the profession.

2.3.2 Pre-service Training: Providing high quality teachers equipped for their task

With the introduction of the Teacher Law and the four-year degree certification requirement, universities in Indonesia have faced new obligations and challenges. These include effective delivery of a new four-year degree education program for all elementary teachers (replacing the previous two-year diploma) as well as revision and upgrading of existing primary and secondary training courses to incorporate the newly mandated competencies and the inclusion of new teaching methodologies. As a consequence, universities have had to change many of their practices, thus creating an extensive agenda for the reform of pre-service teacher education.

For the new courses to be accredited, universities need to be able to provide evidence of (a) new student-centered and interactive teaching methodologies; (b) international best practice in teacher internship and practicum; actual school teaching experience by their lecturers; (c) willingness and ability to recognize the prior learning of teachers upgrading their qualifications; and (d) highly skilled lecturing staff to work with teachers, schools, and district staff in the assessment of teachers and the conduct of training activities within schools. These new courses have been adopted to improve the quality of graduates and to result in higher student scores in the future, and will be incorporated in the new professional post-graduate course[28] for teachers (six months for elementary teachers; one year for secondary teachers).

Currently of serious concern, however, are the curriculum patterns and internal structures of teacher training universities, which can act as barriers to the efficient and effective deployment of school staff:

[28] Pendidikan Profesi Guru (PPG)

1. *Primary school teachers:* Many small primary schools in Indonesia have a surplus of teachers because teaching staff are appointed to schools on the basis of the number of classes in the school rather than the number of students. Government policy is to reduce some of these inequities through teacher re-distribution. When schools are staffed more equitably on the basis of student enrollments, smaller schools will receive fewer teachers, and therefore teachers will be required to instruct students in *multi-grade classes.* Currently, however, most primary teachers are not trained for multi-grade teaching. *Therefore, policymakers will need to ensure university graduates have the skills to promote this form of class organization through their subject and pedagogical instruction.*

2. *Secondary school teachers:* Within teacher education institutions, courses are organized into study-programs (prodi) for each teaching subject. Each study-program consists of two main elements: (a) specialist *subject knowledge* content adapted for the needs of teaching; and, (b) *pedagogy* appropriate to the teaching of that subject. This is a fairly self-contained structure which restricts inter-change between study-programs of either students or activities, and has some inherent difficulties:

    - While all teachers graduate with a *major* teaching subject from their study program, few teachers have a *minor* or second teaching subject because they often cannot study outside their particular study programs. Thus, many secondary teachers who cannot gain sufficient teaching periods in the major subject they have been certified to teach, are officially unable to teach a second minor subject to achieve the teaching load necessary to gain their professional allowance (24 period-hours per week). This may also unnecessarily increase the number of teachers a secondary school requires, thus inadvertently causing overstaffing in some secondary schools. The current curriculum structure of universities restricts the ability of students to move between study-programs. *Policymakers therefore need to ensure study-program arrangements are sufficiently flexible to enable all secondary teachers to be trained in two teaching subjects: a major, and a minor.*

    - Associated with this difficulty is that secondary teacher subject content is often specific to teaching rather than a body of academic knowledge which is equivalent in standard to, say, a mathematics course taken by an engineer. This makes any later career change for a teacher difficult, and, on a broader scale, limits the flexibility of the Indonesian labor force with a consequent cost to the whole economy. This implies that when, say, mathematics teachers are being trained they should attend classes with the same students who are preparing to be engineers or statisticians – an arrangement that would require some greater flexibility in the study program structure of universities. *Policymakers therefore need to ensure that the subject matter in which a teacher is trained has parity of rigor with subject matter taught to other undergraduates.*

3. *Vocational school teachers:* LPTK are facing additional challenges in developing teachers with the required skills. Vocational schools are mandated with the task of producing graduates who can be readily absorbed into the labor market, but the labor market is dynamic, with constant shifts in technology and demand. This makes program offerings and investments by LPTK in equipment, laboratories and facilities for vocational programs particularly difficult. Increased collaboration with industry would help LPTK to better cope with the dynamic nature of the labor force as well as help in efficiency of investments. *On one side the policymakers need to support the LPTK in producing qualified teachers and at the same time LPTKs must be creative in seeking collaboration with industries.*

Some teacher education institutions are already attempting to resolve these problems of mismatch and provide other flexibilities in teacher education. Because teachers at the secondary level are trained and certified in only one subject, principals sometimes have difficulty obtaining a specialist teacher for some subject areas and must ask capable (but subject-untrained) teachers to teach classes outside their areas of

expertise. This mismatch could mean students in those classes are denied the expertise of a correctly trained teacher. Although regulations concerning multi-grade teaching and multi-subject teaching have not been issued, some universities have found creative ways of solving the problem of teacher oversupply as well as mismatch between the teacher's subject area and the subject they actually teach. For example, the University of Surabaya works with a number of local districts to train such teachers at courses conducted during school vacations. The University of Manado has an "in-service, on-service" model used to train pre-service teachers during specified periods who then replace in-service teachers for a period of re-training at the university, thus reducing cost and maximizing training effort.

A comprehensive reform of LPTKs is required that explicitly positions them as not only training providers but also partners with the government in meeting the forecasted needs of the teacher workforce. This would involve reforming the curriculum and approaches to meet actual needs, including programs on multigrade teaching, dual-subject degrees and preparations for teaching across levels. They need to be able to access information of the demand side, including projections on the number of teachers required as well as inputs from local government. With this information they need to be responsive to the needs of the system.

The quality assurance process of LPTKs must also be strengthened. While the operational licensing mechanism and accreditation of programs already exits, it is not functioning in a way that ensures the production of quality graduates. There is also concern that teacher degrees themselves are losing prestige and legitimacy as some programs are fulfilling the demand of teachers needing to upgrade to an S1 degree, providing the diploma but without the teachers needing to truly learn and upgrade their skills in the process.

Summary of Key Strategies and Activities:

Comprehensive reform of LPTKs (positioning as both training providers and partners in meeting need for future/forecasted workforce)

Curriculum and Approaches to meet actual needs

- New programs promoting instruction of multigrade teaching, dual subject, across-level (e.g. JS-SS), and required learning approaches as required by new curriculum
- For secondary teachers: program arrangements that are sufficiently flexible to enable teachers to be trained in two teaching subjects (a major, and a minor) and to teach across levels (JS and SS)
- For primary teachers: program arrangements that incorporate multigrade teaching, possibly cross-over to ECED

Ensure quality entrants (with the correct quantity) into LPTKs

- Targeted entrant numbers based on forecasting
- More rigorous standards for the entry of graduates into professional training to ensure only the best are accepted
- Transparency of information candidates on programs, hiring rates, etc. so informed decisions can be made

Ensure quality of LPTKs

- Improve operational licensing mechanism (to ensure that only good quality programs are allowed to provide service)
- Accreditation of programs (already established)

Collaboration between LPTKs and government (Central, Provincial and District) for both quality and distribution

- Jointly ensure that graduates are trained in skills and subject areas, and produced in the numbers, that reflect the needs of districts; and are deployed to schools of greatest need within target districts
- Enhanced regulatory framework, to strengthen national policy on multi-grade and dual subject teaching

2.3.3. Induction, mentoring and probation: In-school professional training and supervision

One of the most important reforms emerging from the Teacher Law is the development of a school-based (or local working group-based) induction program for beginning teachers. This policy is meant to link the beginning teacher induction program and the school's classroom assessment report for teachers with completion of the probationary period and the certification process.

Currently, a teacher, like other members of the civil service, has a one-year probationary period (with a possible extension to two years) after joining a school staff and commencing his or her teaching career. Traditionally, any civil servant, including teachers, must complete induction training in civics and administrative routines through the district government. However, it is also important to prove to the authorities that the teacher is of the required standard in his or her chosen profession (both in subject knowledge and classroom pedagogy). The government is currently considering the deferral of certification until the conclusion of the teacher's probationary year, when the principal's report could be incorporated into the process. This report could then be sent to the university to be included in the certification and probationary process. Such a system will give better balance between the university's view and the employer's view of the overall ability of the prospective teacher. It also retains some of the links from the previous year between the practice teaching and the university lecturers' teaching.

The mandating of this process by Regulation[29] marks an important point for the quality of Indonesia's teaching profession because it acknowledges that a beginning teacher requires closer supervision, mentoring, and guidance in the workplace than other teachers to successfully make the transition from university training to the school workplace. It has been recognized that principals able to take a true leadership role within the school best deliver such an induction and probation program. After mentoring and monitoring the new teacher during the probationary year, the principal can undertake a classroom performance assessment of the beginning teacher before writing a report on the teacher's work. To help complete this task, the government made funding available for a professional development program to strengthen the capacity of principals and supervisors. Twelve modules were developed for school principals and supervisors to mentor beginning teachers and to assess them at the end of their first year. The material emphasizes the adoption of an important new duty for the principal—that of school instructional leader—which requires all principals with beginning teachers to take an active role in the professional development of those teachers. The materials also include classroom video lessons to be shown and discussed in workshops with the principal. It therefore clarifies the expectations a principal will have when assessing and reporting on beginning teachers at the end of their probation.

This teaching resource is also critical for building the capacity of school instructional leaders as it underlines part of the professional role[30] of the principal. The knowledge and skills gained by a principal through the use of this course material with his or her beginning teachers will have application right across the school into other classrooms and will assert the right and duty of the principal to enter classrooms and take an active part in improving the performance of all teachers, including those who are underperforming.

This reform has closed a gap in Indonesian in-service training. Pre-service university teacher education has a strong focus on subject matter and education theory with only a small component of face-to-face teaching practice in schools and classrooms. The new requirement that principals and supervisors adopt a more active role in mentoring new teachers in the classroom during the probationary year is an important new reform. By inducting beginning teachers into their new school role, the principal is providing the first comprehensive training of the teacher within the intensive, everyday environment of the school and classroom. This is a critical step in the training of teachers because they are, for the first time, under pressure to prepare and present lessons while controlling students in the class. It would be unfortunate if teachers finished their probationary year and were confirmed as civil servants before the employer's representative (the principal) could confirm their efficiency and effectiveness.

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[29] Regulation 27/2010: Induction program for new teachers.

[30] Regulation 28/2010:

Trials of the teacher induction program have already indicated two important benefits for consideration by policymakers: (i) it provides supportive professional development during the probationary period for a new teacher prior to permanent employment; and, (ii) it provides an in-school situation where principals (and supervisors) can develop their leadership and management skills. Thus:

- Policymakers need to adopt planned induction programs and close mentoring by principals (and supervisors) during the probationary period as a mandatory requirement for all new teachers;
- A satisfactory report on the new teachers from the principal at the end of the probationary period should be included as one condition for certification of all new teachers;
- Principals and supervisors should be trained to take leadership in the mentoring of all probationary teachers as a significant part of their management role.

Summary of Key Strategies and Activities:

Support and enforcement of induction program (Regulation 27/2010)

- Deferral of certification until the conclusion of the teacher's probationary year, when the principal's report could be incorporated into the process
- Adopt planned induction programs and close mentoring by principals (and supervisors) during the probationary period as a mandatory requirement for all new teachers;
- A satisfactory report on the new teachers from the principal at the end of the probationary period to be included as one condition for certification of all new teachers;
- Principals and supervisors trained to take leadership in the mentoring of all probationary teachers as a significant part of their management role.
- Monitoring of Induction program

3. Management of the Teacher Workforce

Management and deployment issues have been touched upon in the quality section, mainly from a teacher filtering standpoint. This section addresses management and deployment issues more directly. It first examines overall trends in the composition of the teacher workforce. Specific issues are then examined from the perspective of key stakeholders and their roles. An important foundational policy for this is the Joint Decree, which involves five ministries and has the goal of improving teacher deployment and distribution. While many stakeholders play a role in management of the teacher workforce, the district holds responsibilities that will ultimately determine the overall efficiency and effectiveness of the system. Therefore an overarching policy recommendation involves engaging (and enforcing) district governments in comprehensive plans to address teacher management issues, leveraging the Joint Decree as a tool to engage districts.

As a system in need of improved efficiency, another policy recommendation is to support innovative efficiency opportunities that encourage and allow the flexibility of teachers, including multigrade teaching, dual-subject options and cross-level teaching, with particular encouragement of Junior Secondary-Senior Secondary and ECED-Primary combinations. The school structure itself is also important and efficiencies can be gained through one-roof schools and school mergers. These recommendations are based on Indonesia's unique environmental circumstances and trends in the system.

Important related analysis related to management and deployment issues

3.1 Important trends related to employment

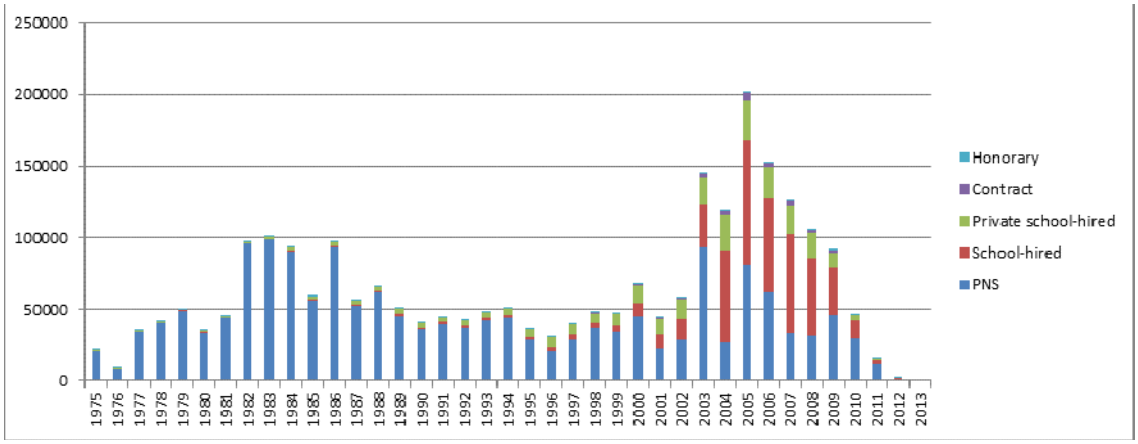
Efficiency in teacher staffing has been a high profile policy issue because of the related cost implications from the Teacher Law. While efficiency must be kept at the forefront of the policy agenda, it appears that there have been some improvements in recent years. The following section presents some analysis on hiring trends as well as the retirement wave, which provides a unique opportunity for addressing inefficiencies as well as determine the need for teachers in the medium and long-term.

Possible signs that hiring is getting under control

With the passing of the Teacher Law there was a boom in the hiring of teachers, leading to concerns about the potential spiraling cost implications. Steps were taken in an attempt to curb unnecessary hiring. The government put a relative freeze in the hiring of civil servant teachers where the number of teachers hired would be in line with replacing retiring civil servant teachers. Another important measure of requiring teachers to work full-time (with 24 hours of classroom time) was implemented, making it difficult for teachers in overstaffed schools to obtain the required number of hours and discouraging schools from hiring or keeping any unnecessary additional teachers. Immediately after the passing of the Teacher Law it was not clear whether all teachers, including school-hired teachers and honorary teachers, would be eligible, but by 2008 it was clarified that public school-hired teachers and honorary teachers would not be eligible.

The hiring patterns in light of these policies paint an interesting picture that seems to indicate the hiring process has come under control to a certain extent. Data on when teachers were hired in the 2012 NUPTK database indicates that there was a significant spike in hiring around the time of the passing of the Teacher Law, with the biggest growth coming from school-hired teachers[31]. The hiring numbers then drop off steadily decline, with the biggest decline coming in the number of school-hired teachers.

Figure 81. Teachers by Year Hired and Type



Source: NUPTK 2012

This pattern appears to indicate that the uncontrolled hiring experienced at the time of the Teacher Law has stabilized somewhat. Although there are likely many factors contributing to hiring, the following are some conjectures regarding what might explain the patterns seen:

[31] It is important to note that the NUPTK data was only of teachers currently in the system and does not have data on teachers who have left the teaching profession. Examination of the teaching force by year hired only gives a rough estimate on the number of teachers hired. It also only captures a snapshot of the teacher workforce rather than historical hiring. For example, there were many contract teachers in the system in 2006, but they have been converted to PNS, so they only show up on the graph as PNS. It should also be noted that the hiring year information for approximately 10% of teachers in the NUPTK database is blank or of a date that could not be possible (e.g. 1899, 2020, etc.). The numbers should therefore not be taken as fully accurate hiring information.

- The hiring of teachers by public schools increased with decentralization, but really jumped at the time of the teacher law and with the introduction of BOS. At the time it was unclear whether these teachers would be eligible for certification and the professional allowance, but it is likely that schools, teachers and districts might have seen the law as an opportunity to exploit
- The decrease in hiring of teachers by public schools may be due to two factors:
    - The policy that that public school-hired teachers were not eligible for certification
    - The 24-hour rule most likely discouraged schools from hiring new teachers if their existing teachers were having difficulty meeting the requirement. (There is anecdotal evidence of teachers putting pressure on principals to not hire or even release excess temporary teachers)
- The decrease in recent years must be also seen in the context of increased enrollments at most levels, which could be a further indication of the system becoming more efficient.

Preliminary data from the 2012 NUPTK system shows that the overall number of teachers decreased by 5% between 2010 and 2012. However, the decline may be partly due to better data collection methods in 2012, which meant that many duplicate records of teachers were removed. Still, the reported decline in teacher numbers as enrolments continued to rise suggest that student teacher ratios have increased and some efficiency savings have been achieved. The table below shows the changes between 2010 and 2012 by teacher type. Interesting points include the following:

- The number of civil servant teachers increased slightly overall, but part of this change is due to the central and district contract teachers being converted to civil servant status, whose numbers decreased by 60% and 48% respectively.
- The biggest drop in numbers comes from school-hired teachers in government schools. There are 27% fewer teachers in the system and the drop of 214,221 accounts for almost all of the overall decrease in teachers.

Table 28. Comparison of teachers between 2010 and 2012

Teacher Type	2010	2012	Change	% Change
Civil servant	1,644,181	1,715,467	71,286	4%
School-hired, public	806,313	592,092	(214,221)	-27%
Private school-hired	258,262	296,106	37,844	15%
Helper teachers	17,372	8,657	(8,715)	-50%
Contract - Central	14,756	5,964	(8,792)	-60%
Contract - District	50,340	26,093	(24,247)	-48%
Total	**2,791,224**	**2,644,379**	**(146,845)**	**-5%**

While it is difficult to tease out just how much of this decrease is due to data cleansing vs. actual efficiency gains, the likely improvement in efficiency is promising. However, student teacher ratios in Indonesia continue to be below the average for middle-income countries as a whole and suggest that there is the potential for further efficiency savings. Efficiency steps must, of course, be done carefully, ensuring a balance with quality while also not placing undue burden on teachers.

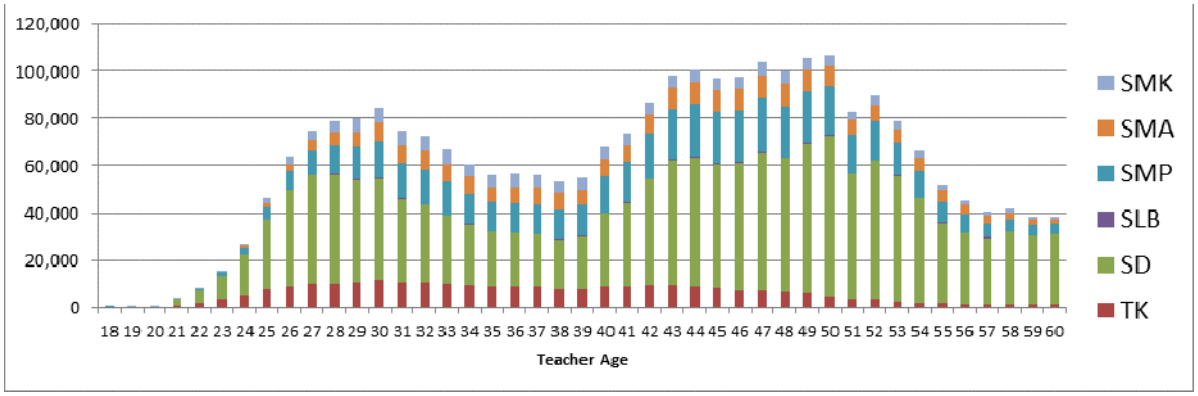
Retirement wave

The retirement wave—in which almost 30 percent of public school teachers will retire within the next 10 years—presents a unique opportunity to address teacher supply and distribution issues. Teachers who are retiring from schools that are already overstaffed should not be replaced. This step would be a natural and relatively painless method for dealing with Indonesia's problems of supply and distribution, but will require careful forecasting, including the forecasting of needed teachers by subject area. Such natural attrition will

also require careful coordination with districts and schools, a process that ties into the capacity development proposal mentioned above.

What teachers make up the retirement wave? Most are primary school teachers who have civil servant status. They also tend to have a lower educational attainment, with over half of teachers aged 55-60 holding below an S1 degree. Below are graphs depicting the retirement wave from various key perspectives.

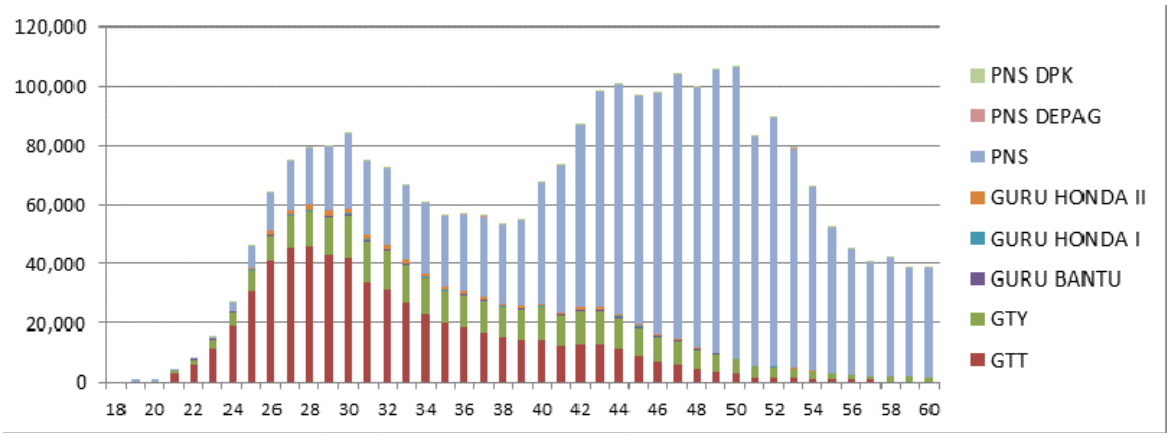
Figure 82. Teacher distribution by age and school level



Source: NUPTK 2012

The general retirement wave, regardless of school level, indicates that the number of retiring teachers will remain at about 40,000 for the next 5 years, but will then start to increase. The biggest wave is still 10 years away. At the other end of the chart, there doesn't seem to be many younger teachers being hired. Teachers, of course, can be hired at any age, but the smaller number of younger teachers may be indicative of the attempt to control hiring. When examining teachers by school level, the following key point emerges: the wave of teachers retiring consists almost exclusively of primary school teachers.

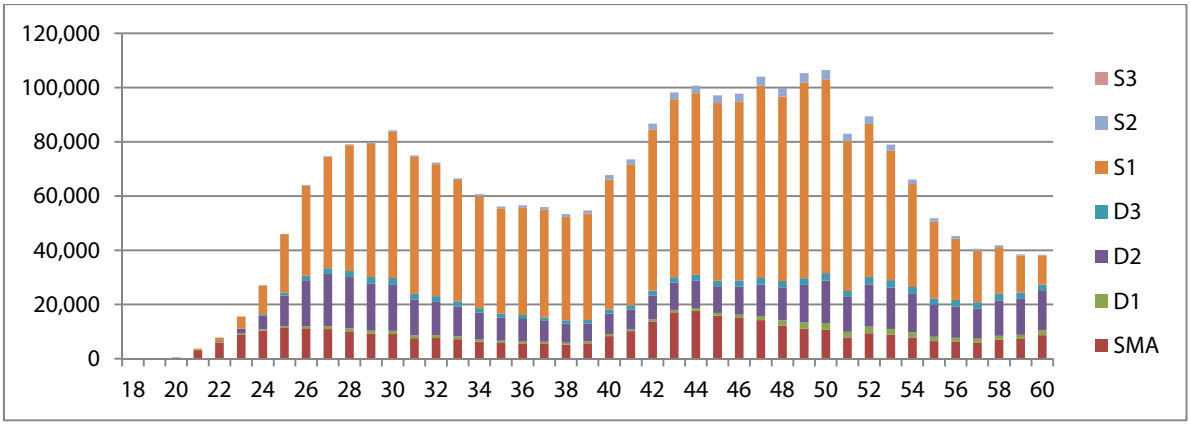
Figure 83. Teacher distribution by age and type



Source: NUPTK 2012

When viewing the wave by teacher type, the key point is that almost all teachers who will be retiring over the next 10 years are PNS. The big wave of school-hired (GTT and GTY) teachers is for ages 24-34 and is highest at age 28. This in part makes sense in that many teachers begin as school-hired, but then may be selected later to become PNS.

Figure 84. Teacher distribution by age and education level



Source: NUPTK 2012

When viewing the wave by educational attainment level, it is clear that many of the older teachers approaching retirement hold less than a S1 degree. As these teachers retire, coupled with the fact that the teachers who are hired generally hold an S1 degree and more incumbent teachers continue to obtain their S1 degree through upgrading, means that the overall composition will continue to move toward the goal of all teachers holding a 4-year degree.

3.2 Policy Direction 3: Improving the Management and Deployment of the Teacher Workforce

3.2.1 The Joint Decree: Providing Definition of Roles and Direction of Policy

In October 2011, Government of Indonesia released a Joint Regulation between five Ministries (*Surat Keputusan Bersama 5 Menteri*) to facilitate redistribution of civil servant teachers. This Joint Regulation recognizes the problematic situation of undersupply and oversupply of teachers in the country and serves as a legal basis in its redistribution efforts. The five Ministries involved are Ministry of Education and Culture (MoEC), Ministry of Religious Affairs (MoRA), Ministry of State Administration and Bureaucratic Reform (MenPAN), Ministry of Finance (MoF) and Ministry of Home Affairs (MoHA).

Table 29. Roles and Responsibilities of the Five Ministries

Ministry	Roles and Responsibilities
MoEC	√ Issue technical guidelines for implementation √ Incorporate teacher data from the National Civil Service Agency (BKN[32]) √ Coordinate with MoRA[33] √ Announce the overall achievement of the redistribution process based on implementation reports from head of districts, governors and MoRA √ Stop financial support and sanction letter for non-performing provinces and districts
MoRA	√ Plan and redistribute civil servant teacher in schools under MoRA's authority

[32] BKN is a government institution in charge for administration, management and development of Indonesia's civil servants (PNS). It reports directly to the President. Under the Joint Regulation, MoEC is required to cross-check with BKN data. BKN staff (when available) can support ministries or other agencies to collect information regarding the under/oversupply of PNS. In order to serve large number of PNS across the country, it is equipped with 12 regional offices (BKD). For school-hired teachers, registration in BKD is seen as an important step in order to be eligible for promotion to PNS status (Kompas, March 6th, 2012).

[33] In Indonesia there are schools under the jurisdiction of MoEC and those under MoRA.

Ministry	Roles and Responsibilities
MenPAN	√ Set the civil servant teacher quota (*formasi*[34]) √ Withhold the allocation of *formasi* to non-performing local governments as per MoEC's review
MoF	√ Provide budget support by taking into account the fiscal capacity √ Withhold the transfer of fiscal balance to non-performing local governments as per MoEC's review
MoHA	√ Include redistribution of civil servant teachers as part of local government performance evaluation √ Assign "unsatisfactory" performance evaluation to non-performing local governments as per MoEC's review

Source: Joint Regulation document (2011)

Its implementation has potentials in improving the mechanics of teacher hiring in Indonesia. The current hiring process relies heavily on the capacity of local governments to analyze teacher needs without solid verification strategy from the central government that pays the salary for those hired teachers[35]. In this scheme, there is little incentive for local governments to pursue resource efficiency, for example preference to request new teacher posts instead of maximizing teaching hours of teacher by sharing subject teachers between nearby schools or implement multi-grade teaching in schools with less than 90 students. The Joint Regulation assigns that verification role to both MoEC and MoHA by authorizing them to give sanction to local governments who are not redistributing civil servant teachers based on concrete analysis laid out in MoEC's technical guidelines.

3.2.2 Recruitment and workforce planning: Selecting the best and balancing demand for and supply of teachers

As has been mentioned in the Teacher Quality Framework and in the policy directions related to quality, recruitment of the best teachers graduating from the system and efficiently distributing them where there is need is an important part of ensuring overall education quality. In Indonesia, the number of students enrolled in education programs in universities increased fivefold in the years following the Teacher Law—from 200,000 in 2005 to over 1 million in 2010 (excluding those enrolled in the Open University). The increased attractiveness of the teaching profession since certification and the incentive of the professional allowance to double salaries is even more clearly demonstrated by the increase in the percentage of students enrolled in education programs from 15 percent before the Teacher Law to almost 30 percent in 2008. Furthermore, evidence suggests that the quality of this larger teacher intake, as judged by higher national examination scores (UN), has also risen over time.

This huge oversupply of new teaching degree holders, many of whom will be unable to gain school jobs, indicates that these universities could have been more selective in enrolling the best candidates out of the increased pool of applications, and have not taken advantage of the beneficial effects of competition for the best students.

This oversupply of newly graduated, highly motivated, and aspiring teachers is a relevant concern. Such an oversupply, in fact, presents a new problem: even if the quality of the new intake is higher on average, it does not necessarily mean that the best students eventually get the jobs. Indeed, finding jobs as certified teachers might be difficult in a situation where the number of new teachers entering the market greatly exceeds the demand for teachers from schools. With around 3 million teachers currently active in the

[34] *Formasi* is the number of civil servant posts (including teachers) that can be made available for the central and local (provinces and districts) governments. The *formasi* has to take into account the budget ceiling set by MoF and includes the conversion/promotion of non civil-servant status to civil servant.

[35] At the central level, MenPAN reviews number of civil servant requests (including teachers) from local governments and incorporates MoF budget ceiling in order to come up with a *formasi* for each district. It is common for districts to receive fewer posts than what they requested which creates a strategy for districts to inflate the number of request. The World Bank's publication "Transforming Indonesia's Teaching Force" (2010) provides further discussion on this and the overall hiring process for civil servant teachers.

system, roughly 100,000 will retire each year.[36] With around 1 million students enrolled in pre-service education programs today, it is expected that, for the years to come, about 250,000 new teachers will enter the labor market each year. Not all of these will be able to find jobs as teachers.

The disparity between demand and supply in the labor market for teachers creates another concern about the quality of the teachers who are finally hired. Hiring procedures in Indonesia are not always efficient or based on merit, and it is not evident that systems are in place to guarantee that the best candidate will get the job. A by-product of the oversupply and failure to train and employ the best candidates may be that current high-caliber candidates will opt out of teaching careers altogether. This is not because they do not want to become teachers but because they are uncertain about whether they will find jobs. Furthermore, they can clearly see that others, often less well qualified, beat them to good jobs because the system itself is incapable of selecting and appointing the best candidates.

The selection and recruitment system needs urgent modification to curb these unintended consequences of the certification program. Competition can be increased by requiring universities to produce the right number of graduates to meet labor market demands and by calling a halt to the proliferation of private universities of dubious quality. Policy makers are aware of this changing scenario, and commencing in 2013 the government has set an annual quota of 40,000 teacher candidates to enroll at private and state universities. This decision is intended to ensure that the number of student teachers admitted each year will match the number of teachers expected to retire four years later (when the cohort is graduating). In the past and in the near future, however, the inflow of new teachers to the system will continue to exceed the outflow due to retirement, unless universities cease to enroll students well beyond their quota.

Many individual teachers often deal with this situation by approaching schools directly and applying informally with their curricula vitae. The school then employs these extra teachers on quite low salaries using school funding, after which the teachers often attempt to gain greater permanency by seeking civil service status. This loose management of teacher employment by schools and district authorities is a major reason for the constant oversupply of teachers in the Indonesian school system. The net results of these inefficiencies are clearly evidenced in the number of primary school teachers increasing by over 30 percent in five years. In fact, the increase in the number of teachers has outpaced the increase in the number of students over that same time period. Only much stricter regulation of trainee intakes, teacher graduates and hiring will help reduce the oversupply of teachers found in Indonesia.

Close coordination between district offices, teacher education institutions, and schools has important benefits in terms of maintaining an appropriate balance between demand and supply of teachers. District offices need to take responsibility for the task of *manpower planning* for the schools within their district and ensuring there is a closer balance between the vacancies identified and the number of graduates available.

- First, district officials need to work more closely with their schools and local universities to identify the district's teacher profile and then to match the schools' demand for teachers (particularly subject specialist teachers) with the supply available from the universities. Such a profile, constantly updated, can map teachers according to academic qualifications and schools' need for teachers at each educational level. This is especially true in preparing teachers to teach dual subjects in secondary schools in remote areas. Universities, too, can then better undertake forward planning of future trainee intakes;

- Secondly, as teachers retire or resign, new vacancies arise, transfers occur, and new hiring takes place. One district, for example, conducts an annual district workshop to plan teacher appointments for each level of school and each subject area, incorporating known retiring teachers as well. This process addresses the problem of overstaffing in some schools and the shortage of teachers in other schools to ensure more efficient personnel deployment and resource use.

[36] World Bank, *Teacher Early Retirement and Transfer Schemes*, Policy Brief, October, 2010

- Thirdly, districts must also create a policy on the transfer of teachers and ensure this is followed in a fair and equitable manner for the benefit, not only of teachers, but also for the quality of education offered to children. Policies relating to the order of priority for transfers needs development. For example, lengthy service in remote and hardship locations must be recognized and rewarded by transfer to preferred locations ahead of new teachers being appointed for the first time.

- Fourthly, district officers must approve all permanent appointments according to the approved policy before principals can fill vacancies themselves in any other way than temporarily.

3.2.3 Integration of new P3K teachers into the system

As specified in section 1.2.4, the introduction of a new P3K teacher type in the recent civil service reform will likely have significant implications in terms of the employment, deployment and management of teachers. P3K teachers will now become a professional group and special laws, such as the Law on Teachers, regulations and guidelines, will guide their management. Many managerial and regulatory aspects are still unclear. This places greater impetus at this early stage to properly think through and define the laws and regulations that will guide this new type of teacher.

P3K will be employed under individual, limited-term contracts (agreements) that are to be for a minimum of 1 year with possible extension. This limited term contract is a key differentiator from the traditional civil service hire. One major implication is its potential to create a much more flexible workforce, where contracts could be created and renewed based on existing staffing needs. It also has potential performance implications, where underperforming teachers may not have contracts renewed. This, of course, comes at the cost of the teaching profession becoming less secure and therefore potentially less desirable.

From a management perspective, the hiring and management process must be clarified. The existing Joint Decree (section 3.2.1) is expected to continue to be used in the hiring process for P3K teachers. In this case, MenPAN would still play the role of allocating teacher hire positions and many of the existing system deficiencies would remain. P3K teachers could be contracted at the district or province level. The existing disconnect between who hires (districts) and who pays (central) makes has been widely documented (e.g. World Bank, 2010). This makes staffing decisions inefficient and places a burden on MenPAN, as well as other central ministries involved in the joint decree. The P3K change could present an opportunity to move toward a system where funds are passed from central to district level in the form of a block amount (based on, for example a formula that takes into account the number of students and other factors such as number of schools and their size) rather than on existing staff. This would align the hiring and payment decisions and could lead to much more efficient and effective staffing, but there would also need to be checks in place to ensure that hired teachers meet certain quality standards.

3.2.4 District management of education: The key to effective teacher management

Decentralization reforms introduced in the early 2000s have shifted the responsibility for education service provision to local governments. In 2003, the Government of Indonesia's Education Law outlined the roles and functions of each of the three levels of government in the management of education. Districts were responsible for the overall organization of primary and secondary education and the hiring and deployment of teachers. Districts also had the authority to establish new schools, maintain the registration of existing schools and issue their own regulations on education standards. Provincial governments were also made responsible for the overall coordination and supervision of primary and secondary education. Central government retained the core function in areas such as overall policy development and implementation procedures, curriculum improvement and examinations, teacher employment and deployment (particularly civil servants), and educational evaluation.

However, District Education Authorities are responsible for the schools and teachers under their management. They have an initiating and coordinating role in the training of teachers. In this regard, for

example, they facilitate the establishment of local teacher working groups, identify key teachers from schools to receive training to act as consultants and trainers in the rollout of national training programs, and conduct their own training programs using these trainers. District officers are responsible for the administration and implementation of the certification program within the district, and technical teams have been organized at the local level to plan, monitor, and report the progress of implementation to Ministry of Education and Culture agencies. The districts are also involved with socialization of the certification process to principals and teachers. In addition, district authorities collaborate with local universities regarding teacher education matters, provide scholarships for teacher upgrading, and identify areas of teacher shortage. However, the effectiveness of training programs usually depends heavily on the enthusiasm with which district authorities identify school and teacher needs and support and follow up on training activities. The response of districts to training initiatives can vary widely.

An *Indonesian Local Education Governance Indicator (ILEGI)*[37] has been developed to measure the quality of educational governance and has been used in a sample of 50 districts. It consists of an average of five sets of indicators (transparency and accountability; education service provision standards; management control systems; management information systems; and, efficient resource use). It provides a comprehensive tool to measure the quality of local management of education. Given the important role local governments play in the delivery of basic education services it is crucial that the capacity and effectiveness of local governance is monitored on a periodic basis. The ILEGI is ideally suited to assess local education capacity and monitor the success of policies and programs that target improvements in local governance.

Preliminary findings show that, while the quality of local governance has improved between 2009 and 2012, overall performance remains in the middle range. Nevertheless, there has been progress in some important areas. For example, efforts to introduce greater transparency, accountability and public participation in local decision-making processes have led to improvements. However, in other areas of governance the survey has revealed that local governments are slipping back. In particular, the effectiveness of management control systems and mechanisms for planning and budgeting appear to have weakened. Given the importance of these areas of local governance to the efficient and effective use of public resources it is important that policy and capacity building efforts should focus on these areas to ensure these declines are reversed in the future.

Some are critical of the decentralization of school organization and management to the district level because of the lack of accountability to central government and the wide disparity in effectiveness between districts. In fact some believe teacher management should be re-centralized to provincial level as a prolonged arm of national government. However, because of the massive size of many districts in the Indonesian system, it is hard to see that re-centralization would improve efficiency. The solution may lie in tightening the accountability links between the district administration and the central policy and fund-providing agencies. It this scenario, the provincial authorities could act as agents of audit and review, reporting findings to the district management for action and advising central authorities on action to be taken to ensure compliance, using such tools as the withholding funding, or not approving the civil service establishment sought, and so on. To date central authorities have been reluctant to impose sanctions on district authorities to curb wasteful resource usage or recalcitrant behavior in regard to central policies developed for the good of education throughout the nation. Future central administrations will undoubtedly have to take action against the huge waste of resources involved in the overstaffing of schools and poor teacher distribution. The failure of some districts to adopt the new and efficient education policies mandated by the central government and supported by central agencies' practices must also not go unchallenged.

In terms of teacher management and the Joint Decree, districts have an important role in coming up with staffing plans, but many have low capacity regarding how to identify over and undersupply areas or forecast future needs to come up with accurate plans that would address their teacher management issues. The most

[37] World Bank, *Local Governance Matters: Exploring Changes in District Education Governance and Management*, Knowledge Brief, March 2013

effective method of implementation of the Joint Decree would involve a "joint" effort, and part of this could involve engagement with district governments in development of a 5 year comprehensive plan to address teacher management issues. MOEC, for its part in the joint decree, should utilize a clear, transparent formula for determining the allocation of teachers. In this process central government must allocate resources and apply sanctions to ensure compliance within a broad framework that allows districts to exercise some autonomy within limits defined by the central government for the betterment of the national interest.

The actual hiring of teachers should be based on strict quality criteria and actual need within districts. This would require a rigorous selection from the pool of graduate based in large part on objective assessments, including the Competency Test instrument. Further, only graduates from licensed/accredited programs should be hired. Indonesia is producing a large pool of graduates, so Indonesia has the opportunity and obligation to be selective. Particularly with civil servant teachers, bringing a teacher into the system is not simply a short-term matter of filling a slot, but rather a 30 year commitment, so low quality decisions now will have long-term system implications. If teachers are unable to demonstrate a high level of knowledge for the subject(s) they are expected to teach then they should not be brought into the system.

3.2.5 Addressing Staffing Implications Under the 2013 Curriculum

The new curriculum has changed the subjects taught as well as the number of hours associated with each subject. These changes have important implications on the teacher workforce. For subjects that have been eliminated, such as ICT, the teachers must be reassigned, retrained or possibly be let go. For subjects that have had the number of hours reduced, it may result in many schools being overstaffed for that subject. It may also be difficult for the subject teachers to receive sufficient teaching hours required for the professional allowance. For new subjects or increased hours there may be shortages and teachers will need to be identified or hired to fill those hours. In some cases it may be that teachers whose hours are reduced can take on additional hours in other subjects, if multi-subject teaching is allowed and if any necessary training is given. Proper planning based on the curriculum shift will be important for staffing efficiency and effectiveness.

3.2.6 Encouraging Innovative Approaches to Improve Efficiency

As has been well documented in other studies and reports (e.g. World Bank, 2010a), the inefficiencies that exist in Indonesia's employment and distribution of teachers are largely due to the majority of schools being small. These small schools tend to be due to both geographic circumstances and policies that tended to encourage the formation of smaller schools. Teachers are required to work full-time, defined by 24 hours of class time, in order to receive their professional allowance. This has proven to be extremely difficult for many teachers due to existing teacher overstaffing in smaller schools. As the system evolves it will present opportunities to address some of the efficiencies and also help teachers meet their 24-hour requirement.

As the system expands to universal 12-year education there will be a need for staffing of senior secondary teachers. If Indonesia is to reach its target of 97% gross enrollment in senior secondary by 2020 then it will need to provide relatively easy access to students in rural and remote areas, as it will simply be difficult or impossible for many of these children to travel long distances to attend school. At the same time it would be costly and inefficient to build separate facilities in areas that would be unable to enroll large numbers of students due to their catchment area. One possible solution is to expand existing junior secondary schools to become one-roof schools Core subjects such as mathematics, Indonesian, science and English extend through both the junior and senior secondary curriculum; it would be possible to have teachers teach across levels. As mentioned earlier, future teachers should also be able to teach more than one subject. In the past, LPTK students were required to take both a major and a minor study program and they would need to meet minimum competency standards in both programs as a basis for graduation. This should be revived. Quality standards would certainly need to be maintained and teachers should be able to demonstrate they are capable of teaching all topics and/or all subjects, but this would be a way in which teachers in relatively

remote areas are able to meet the 24-hour requirement as opposed to traveling to different schools in other villages.

This cross-level staffing could also apply for the expansion of ECED. Many primary schools are overstaffed. As ECED services are expanded for pre-school aged children, it could present an opportunity for excess staff to obtain additional hours of classroom time. Early grade teachers could also be trained and assigned to be kindergarten teachers. Specific qualifications criteria would need to be met and additional training would need to be given to ensure the teachers are equipped to effectively carry out the role, but this would provide another win-win situation of teachers finding extra hours without having to travel great distances (if the ECED center is in the same village), while also not requiring additional teachers. This initiative may work in areas with oversupplied primary school teachers and could be used as an intermediate or temporary solution while the system is preparing for the qualified new teachers for kindergarten and before the STR in primary school reaches the rational rate. This will also require quality training to prepare both teachers to assume their new roles.

As touched upon earlier, having a more flexible teacher workforce could also help address inefficiencies. Applicability of the type of flexibility depends in part on the school level. For example:

- *In primary schools*: introduction of multigrade teaching in small primary schools, particularly in difficult-to-staff areas.
- *In secondary schools*: allowing teachers to become accredited in more than one subject and encouraging multi-subject teachers, particularly in small secondary schools, where it is difficult to allocate sufficient hours to teachers of minor subjects.

Summary of Key Strategies and Activities

Engage (and enforce) district government in comprehensive 5 year plans to address teacher management issues (employment, deployment, distribution)

- Use the Joint Decree as a tool to engage districts
- However the plans need to be based not only on current distribution, but also taking a broader picture based on expansion, retirement wave, rational STR, and GER targets in all levels
- MOEC, in its role under the Joint Decree, utilizes a clear, transparent formula for determining allocation of teachers

Hiring of teachers based on strict quality criteria and actual need within districts

- Hiring of best new teachers through rigorous selection from pool of graduates based on objective assessments (e.g. Competency Test instrument from previous policy section)
- Hiring only graduates from licensed/accredited programs

Collaboration by MOEC, MenPAN, the National Board of Personnel (BKN) and districts to specifically address the incorporation of the new P3K teacher type into the system:

- Clearly define the hiring and management process of P3K teachers, including a strategy of how to incorporate this new teacher type into the system and to what extent
- Work closely with MenPAN on planning and forecasting for the hiring of P3K teachers
- Utilize the new hiring avenue as a way of ensuring the hiring of high quality candidates

Support of efficiency opportunities

- Review relevant regulations, such as certification criteria, 24-hour requirement, etc.
- One roof for PS-JS and JS-SS (so that teachers and students don't need to travel far and also to help improve efficiency in use of teachers)
- Multigrade and dual-subject options

Address the teacher staffing implications related to the 2013 Curriculum

- Through planning, avoid the potential risk of having the system become even more inefficient; instead turn it into an opportunity to improve efficiency
- Develop a staffing map based on the new curriculum and identify associated employment and distribution implications
- Identify which teachers (according to subject type, etc.) become redundant and how those teachers may be reassigned, retrained or let go

4. Conclusion

Developing a highly qualified, well-managed and efficiently distributed teaching workforce is essential for a successful education system. This chapter proposes three overarching policy directions for the medium-term: (1) strengthening teacher quality, accountability and management systems, (2) investing in future teachers, from pre-service to induction and early support, and (3) improving the management and deployment of the teacher workforce.

Quality and management of teachers are two intertwined pillars of teacher workforce issues. The two pillars require dynamic interaction through a holistic process. If one pillar is strong, but the other weak, it will not lead to effective change in Indonesia's teaching workforce.

Each policy direction has specific strategies and activities proposed, but an important point to emphasize is that many important foundational steps that have already been taken. These steps should be leveraged and supported. But more importantly, for true quality and management progress to take place there must be strong political will and champions at all levels of government. The *RPJMN* can be used as a tool for providing direction and the necessary base that will allow the policies to stand strong when conditions become adverse.

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