Transforming Indonesia's Teaching Force

Volume II : From Pre-service Training to Retirement: Producing and Maintaining a High-quality, Efficient, and Motivated Workforce

Human Development
East Asia and Pacific Region

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DEPARTEMEN PENDIDIKAN NASIONAL
REPUBLIK INDONESIA

Kingdom of the Netherlands

THE WORLD BANK OFFICE JAKARTA
Indonesia Stock Exchange Building, Tower II/12-13th Fl.
Jl. Jend. Sudirman Kav. 52-53
Jakarta 12910
Tel: (6221) 5299-3000
Fax: (6221) 5299-3111

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Preface

This technical report is the second volume of a two-volume report on teacher management entitled "Transforming Indonesia's Teaching Force." This volume provides detailed results of the analysis that was conducted; Volume I is an Executive Summary that focuses on the key areas where policy reforms will likely generate a large impact in Indonesia. This volume is aimed at public policy researchers and technical staff of the Government of Indonesia. Volume I is a shorter version that provides policy makers and the general public a condensed version of the larger report's analysis, results, and recommended policy reforms for developing a better teaching force in Indonesia.

It is hoped that this report can not only assist the government in setting up a future reform agenda, but also add value to ongoing educational reforms in Indonesia, in terms of improving the effectiveness of these reforms and ensuring their institutional and fiscal sustainability.

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Volume I of the report was prepared by Dandan Chen and Andrew Ragatz, and Volume II, by Andrew Ragatz. Important contributions were made by Halsey Rogers (Senior Economist, Development Economics Vice Presidency, World Bank), Ratna Kesuma (Operations Officer, World Bank), Ritchie Stevenson (consultant), Richard Kraft (consultant), Ralph Rawlinson (consultant), Muhammad Firdaus (consultant), Jups Kluyskens (consultant), Adam Rorris (Education Economist, Australia Agency for International Development), Siwage Dharma Negara (Operations Officer, World Bank), Susie Sugiarti (Operations Assistant, World Bank), Imam Setiawan (Research Analyst, World Bank), and Megha Kapoor (consultant).

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The report was prepared under the supervision of Mae Chu Chang and with the overall guidance and support of Eduardo Velez Bustillo (Education Sector Manager, East Asia Human Development, World Bank). The peer reviewers were Emiliana Vegas (Senior Education Economist, Human Development Network, World Bank), Aidan Mulkeen (consultant, Africa Education Unit, World Bank), and Neil Baumgart (Professor Emeritus, University of Western Sydney, Australia).

Indonesia Country Director:	**Joachim von Amsberg**
East Asia Human Development Sector Director:	**Emmanuel Jimenez**
East Asia Education Sector Manager:	**Eduardo Velez Bustillo**
Indonesia Human Development Sector Coordinator:	**Mae Chu Chang**
Task Team Leader(s):	**Andrew Ragatz and Dandan Chen**

Abbreviations

BALITBANG	Research and Development Department, Ministry of National Education
BAN-PT	National Board of Accreditation for Higher Education
BAPPENAS	National Development Planning Agency
BERMUTU	Better Education through Reformed Management and Universal Teacher Upgrading
BINDIKLAT	Directorate of Education Personnel Development of the PMPTK
BKN	National Civil Service Board
BOS	A grant to schools provided by the central Indonesian government
BPS	Central Bureau of Statistics
BSNP	National Education Standards Agency
CAR	Classroom action research
CLCC	Creating Learning Communities for Children, UNICEF program
CPD	Continuous professional development
DAK	Specific allocation fund distributed to districts in Indonesia
DAU	General allocation fund distributed to districts in Indonesia
DBE	Decentralized Basic Education project, USAID program
D1, 2, 3, 4	Post-secondary diploma (1-year), (2-year), (3-year), (4-year)
DIKTI	Directorate General of Higher Education
DIPA	Integrated budget (recurrent and investment)
FIKIP	Faculty of teacher education within universities
GOI	Government of Indonesia
GTT	Nonpermanent school teacher
GTY	Nonpermanent school teacher in a private school
HEI	Higher education institution (e.g., university, institute, school of higher learning, academy, polytechnic)
ICT	Information and communication technology
IDR	Indonesian rupiah (currency)
IKIP	Teacher and Education Studies Institute
KKG	Teacher Working Group
KKKS	Primary Principal Working Group
KKPS	Primary School Supervisor Working Group
LPMP	Institute for Educational Quality Assurance
LPTK	Teacher training institutes within universities
MBE	Managing Basic Education, USAID program
MENPAN	Ministry of State Administration Reform
MGMP	Secondary Subject Teacher Forum
MKKS	Secondary Principal Working Group
MKPS	Secondary School Supervisor Working Group
MONE	Ministry of National Education
M&E	Monitoring and evaluation
NUPTK	Teacher database maintained by PMPTK (previously known as SIMPTK)
OECD	Organisation for Economic Co-operation and Development

P4TK	Center for Development and Empowerment of Teachers and Education Personnel, a national agency with multiple offices
PGSD	Teacher training institute (LPTK) course to upgrade elementary teachers' education to S1 level
PGSMTP	Teacher training college for junior secondary school teachers
PISA	Program for International Student Assessment, OECD
PMPTK	Directorate General for Quality Improvement of Teachers and Education Personnel
PNS	Civil servant
PLPG	90-hour course undertaken by teachers who fail the portfolio certification test
PROFESI	Directorate of Education Profession of the PMPTK
PP	Government regulation
PPG	Postgraduate professional course of one or two semesters taken in order to gain teacher certification
PPP	Purchasing power parity
PUSPENDIK	Centre of Research and Development for Assessment Systems
QITEP	Directorate General for Quality Improvement of Teachers and Education Personnel. (also abbreviated as PMPTK)
RPL	Recognition of prior learning
S1	Degree equivalent of a Bachelor's Degree
S2	Degree equivalent of a Master's Degree
S3	Degree equivalent of a Ph.D.
SD	Primary school
SIMPTK	Teacher database maintained by the PMPTK (now known as NUPTK)
SKS	Credit points gained by university study or its equivalent
SMA	Senior secondary school
SMP	Junior secondary school
SPG	Teacher training secondary school (now discontinued)
STKIP	School of Higher Learning of Teacher Education
STR	Student-teacher ratio
TENDIK	Directorate of Non-education Personnel of the PMPTK
TIMMS	Trends in International Mathematics and Science Study
UNICEF	United Nations Children's Fund
USAID	U.S. Agency for International Development
UT	Open University
UU	National law

Note: All dollar amounts in U.S. dollars unless otherwise noted.

Executive Summary

Effective management of the teaching force is of crucial importance to the development of a national education system in Indonesia. In particular, it is vital for producing a competent, motivated, high-quality teaching service. The morale and commitment of Indonesian teachers are significantly influenced by the ways in which recruitment, initial training, posting, in-service training, transfer, promotion, appraisal, and professional and administrative supervision systems are managed.

Effective teacher management is also critical from a financial perspective. Expenditures on teachers' salaries and other expenditures related to the management and development of the teaching force typically account for the most significant proportion of an education budget. Thus, inefficient teacher management and deployment can severely strain an education budget, making it extremely difficult to devote funding to other aspects of the system.

A major initiative to reform teacher management in Indonesia began in 2004. Under the proposed reforms, the teaching workforce in the country will be completely reshaped. Implementation of these reforms will be a major factor in determining the success or failure of the country's education system. However, there are many challenges in implementing the proposed reforms.

This report attempts to describe the issues that affect teacher management and its reform in Indonesia. Furthermore, it attempts to set forth recommendations on how challenges and opportunities can be managed to facilitate the development of an efficient, effective, equitable, and high-quality teaching workforce.

Chapter 1. Teacher Management in Context

This chapter explains why teacher management has become such a central issue in Indonesian educational policy. It also explains why this issue is of major interest to a range of departments and bodies outside the Ministry of Education, including the Ministry of Finance, the Bureau of Planning, and Parliament.

The centerpiece of the ambitious teacher reform in Indonesia relates to teacher certification. Proposed reforms have the potential to reshape the teaching workforce and improve its quality. Given that certified teachers will have their base salaries doubled, these reforms also have significant budget implications. In 2004, teacher salaries already accounted for more than half of the education budget. This proportion will increase with each wave of teachers that passes through the certification process. If not controlled and managed appropriately, this increase may limit the government's ability to allocate resources to other key elements of its education system. If that eventuality were to occur, rather than achieving hoped-for improvements, it might actually result in a decrease in the quality and effectiveness of the education system.

Because of the cost implications and risks associated with implementing the reforms, the issue of Indonesia's extremely low student-teacher ratios has come to the forefront of policy debate. Teachers in Indonesia have historically received low salaries. Therefore, it has been possible to maintain a large number of teachers who may have been deployed suboptimally. However, as teacher costs rise, the efficiency of the teaching workforce becomes more important.

Another key factor influencing the reforms is the decentralization process in Indonesia which began in 2001. As a part of this process, most responsibility for teacher employment and deployment was transferred from the national to the district level. This has generated a number of issues that need to be addressed.

Teacher management systems, moreover, are needed to improve the quality of education. Although average levels of educational achievement have been improving in Indonesia, the country still ranks low on standardized international test scores. As a result of decades of focus on expanding enrollment, the educational system has not consistently produced graduates with the high-quality knowledge and skills needed to build a strong society and competitive economy. Standardized international exams demonstrate that Indonesia's student outcomes are lower than those of other developing countries, even after taking family socioeconomic status into account. This suggests that deficiencies in the education system, rather than the socioeconomic backgrounds of students, are responsible for the lower levels of performance. One of these deficiencies is the quality of the teaching force, including the fact that a high proportion of unqualified teachers do not have proper incentives to focus on student achievement.

Chapter 2. Teaching Force: Profile and Trend

This chapter examines the composition and character of Indonesia's teaching workforce in terms of gender, age, educational attainment, remuneration, workloads, student-teacher ratios, and other factors. An understanding of these dimensions is critical for understanding the challenges and opportunities presented by the reform of the country's teacher management system.

With over 3.3 million teachers operating under the supervision of two separate ministries and more than one-third of all students in private sector schools, Indonesia has a diverse and complex system. Factors that contribute to this complexity include:

- **Gender:** In general, the gender of the teaching working force is very well balanced. However, most principals are male. Also, the number of female teachers is disproportionately high in urban areas, while males often dominate teacher ranks in remote areas.
- **Age:** Most teachers range in age from 35 to 50 years. This fact is due to the massive primary school expansion that took place in the 1980s. As a result, 30 percent of all civil servant teachers will retire in the next 10 years. This eventuality creates a unique opportunity to redefine the teaching workforce.
- **Educational attainment:** The educational attainment of teachers is generally very low—only 37

percent hold a four-year degree. With the new certification requirement, the proportion of teachers with a four-year degree has been increasing by 5 percent each year, as teachers upgrade their skills and new, more educated teachers enter the system.

- **Private schools:** About 48 percent of all schools in the country are private; these institutions service 31 percent of all students and employ 38 percent of all teachers. Thus, private schools play a critical role in the national education system. The government has a unique relationship with private schools and assigns a certain number of civil servant teachers to work in them. The government also provides a functional allowance to all private school teachers, who are also eligible for a certification allowance. Thus, the management of teachers employed in private schools is a matter of consideration in the reform of the country's educational system.
- **Remuneration:** Teachers have historically received low levels of remuneration. However, pay increases for civil servants have averaged 17 percent per year for the past four years. In addition, recent changes have provided a functional allowance for all teachers (equal to 10 percent of a base civil servant salary), and additional new allowances can double or even triple base salaries in certain circumstances. With these increases and additional allowances, teaching is becoming a well-paid and more desirable profession.
- **Workloads:** Teacher workloads are generally very low, particularly in secondary schools where only 20 percent of teachers meet the new minimum 24-period/hour teaching load mandated by certification requirements.
- **Student-teacher ratios (STRs):** These ratios are extremely low compared to other countries. A trend toward further declines raises serious concerns about the efficiency of the education system.
- **Distribution:** Contrary to popular belief, rural schools are not generally understaffed. However, they often lack qualified teachers. More than 30 percent of teachers in smaller rural schools (fewer than 200 students) have only a high school degree or less.
- **Hiring process:** This process is complex and varies by teacher type. Under current procedures, districts hire teachers, but the central government pays their salaries. This creates a perverse incentive for districts to increase the proportion and number of civil servant teachers. The big increase in hiring since the decentralization of the educational system has been in school-hired teachers, partly because the new school operational funds (Indonesian acronym, BOS) provided to all schools by the central government can be used for this purpose.

Chapter 3. Teacher Demand and Supply: Getting the Right People to the Right Places

This chapter analyzes the policies and historical context under which the current teaching workforce has evolved. In particular, it examines Indonesia's extraordinarily low student-teacher ratios—one of the lowest in the world. With increased teacher salaries and other costs resulting from the reforms, the efficiency of the teaching workforce is becoming critical. As a result of these factors, teacher supply and demand will become a central issue in shaping the education budget over the next decade.

An examination of primary and secondary school staffing reveals the following:

- Indonesia's extremely low STRs in primary schools are mainly driven by a staffing formula that provides a minimum of 9 teachers to each primary school. With 47 percent of Indonesia's primary schools having fewer than 150 students and 78 percent having fewer than 240 students, this formula leads to significantly overstaffed schools.

- At the secondary level, there is a requirement that teachers only teach a single subject. In theory, this would ensure quality control. However, given Indonesia's many small schools, it creates huge staffing inefficiencies.
- Recent policy changes have drastically altered the dynamics of supply and demand. There are many strong forces pushing to increase the supply of and demand for teachers. However, there are few mechanisms in place to ensure that teacher hiring is efficient.
- The key driver in increasing the supply side is the increase in teacher salaries. Teacher colleges have responded to the increased number of candidates by expanding their programs.
- Various factors are also pushing increased demand, some of which represent natural evolutions of the education system. Others can be seen as policy distortions that create a "false demand" for additional teachers, a trend that will begin to harm the system over time as costs rise. With increasing enrollment at a number of levels, there is a natural growth in demand for teachers, particularly for those with subject-specific skills. In particular, there is a teacher shortage in certain subjects such as information technology.
- Of course, funding is a factor in teacher hiring. With decentralization and the flow of funds to schools through BOS, there has been significant hiring of teachers at the school level. Approximately 30 percent of BOS funds are spent on teacher honoraria. Other funding flows are also leading to the hiring of additional teachers beyond optimal equilibrium levels. The following factors are at play:
    - District governments hire civil servant teachers, but the central government pays them.
    - Schools are able to hire teachers, often using funds from BOS. These teachers, when certified, will receive a certification allowance from the central government. This allowance is generally 10 times the amount of the honorarium that they receive from the school. Again, the central government is not in control of the hiring but is effectively paying the salary.
    - Private school teachers are eligible for certification and associated benefits. Yet again, the central government is unable to directly control either the establishment of private schools or the hiring of teachers for these schools but pays a large portion of their teacher salaries.
    - In part, scarcity of resources keeps teacher hiring under control. However, massive increases in the education budget have reduced the political will to control teacher hiring in the short term and address the number of teachers employed. The government is constitutionally required to dedicate 20 percent of the total government budget to education. As a result of endeavors to meet this commitment, the education budget has increased by 30 percent per year on average since 2005. This has left the Ministry of National Education (MONE) flush with funds in the short term. Budget increases are unlikely to continue, however, now that the 20 percent threshold has been met. In 2009, teacher allowances already made up 14 percent of the central government budget. In the next few years, expenditure on this component will place pressure on the government's ability to fund other key programs.

Chapter 4. Teachers at Work: Ensuring Teachers are Motivated, Supported, and Perform Well

This chapter examines teacher management mainly in terms of system support and quality improvement. It uses the results of recent studies on teacher absenteeism, teacher behavior in the classroom, and teacher training and professional development to provide a picture of Indonesia's teachers at work. It then identifies the elements that must be put in place to ensure that teachers excel and play their role in providing students a high-quality education.

Teacher absenteeism has been identified as a major issue in Indonesia. A 2003 study showed an absenteeism rate of 19 percent, although this figure fell to 15 percent in a follow-up 2008 study. Factors that emerged as keys to reducing absenteeism included: (1) dedicated district programs that focus on and reduce absenteeism and reward teacher performance; (2) increased supervision; and (3) low absenteeism by principals. Although general progress is promising, further work must be done. In particular, certain groups still have high rates of absenteeism. For example, the absentee rate for remote area teachers is 23.3 percent, and for principals in these areas, 20.4 percent.

To improve teacher quality in Indonesia, it is also vital to understand teacher behavior in the classroom. A pioneering 2007 video study provided cross-country comparisons, including comparative student TIMSS examination scores. Its key findings included: (1) the traditional teaching method of rote learning, which is used extensively in Indonesia, tends to have a negative relationship with test scores; (2) Indonesian students tend to have less group interaction than students in other countries, with a strong relationship between classes with higher student involvement (e.g., student presentations, teacher-student interaction, students solving problems) and higher test scores; and (3) critical preparatory activities, such as lesson planning, had a strong positive relationship with student outcomes.

As part of the efforts to reform Indonesia's teacher management system, it is essential to devise various means to accommodate the new demands being made on teachers and provide them a supportive, performance-oriented environment. Lack of regular, ongoing professional development has a negative impact on the motivation and skills of the classroom teacher. Professional development could be fostered through a number of means, among them: (1) performance appraisals and increased accountability; (2) induction programs for new teachers; (3) establishment of a promotion system based on merit rather than seniority; and (4) expansion of distance learning to accommodate the required upgrading of teacher educational levels to meet certification requirements.

Indonesia has a unique system of teacher clusters, groups that are typically made up of teachers from 6–10 neighboring schools. Cluster work focuses on practical, relevant, real-life situations to a far greater extent than does traditional in-service training which tends to be theoretical in approach. Indonesian teachers feel that they benefit more from local cluster work than from traditional training. In a country as large and diverse as Indonesia, the cluster system provides a cost-effective, contextual professional development mechanism at the grassroots level. It also gives teachers a sense of empowerment. These clusters will play a critical role in teacher professional development efforts in the future.

Chapter 5. Policy Options

This chapter highlights proposed measures that will support the teacher reform effort, strengthen teacher management, and fortify the education system as a whole. The key policy options for managing teacher supply and demand are outlined below.

School staffing

School staffing formulas and policies related to teaching subjects must be adjusted to fit the realities of the Indonesian system. Key staffing measures include:

- Adjustment of the school staffing formula to emphasize the number of students rather than the number of classes, so that the formula reflects the reality of the many small schools in Indonesia. The achievement of more efficient staffing practices could be facilitated by:
    - *In primary schools*: introducing 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 multisubject teachers, particularly in small secondary schools where it is difficult to allocate sufficient hours to teachers of minor subjects.

- Enforcement of the 24-period/hour rule in order to rationalize teacher hiring and discourage schools from overstaffing. If resistance to the policy makes it unfeasible to enforce, then alternatively, a teachers' professional allowance could be adjusted so that it is based on the hours a teacher works, rather than the current policy of making it equal to a full-time base salary.

Training of new teachers (supply)

The success of the latest teacher law and certification process will ultimately be determined by their impact on the quality of new teachers who come into the profession. In this sense, Indonesia is now at a critical point in the reform of its teacher training programs. The effectiveness of pre-service training can be improved through: (1) effective screening of teacher trainees; (2) relevant training content and modality delivery to ensure closer links between university courses and practical classroom teaching in schools; and (3) collaboration with schools to help new teachers adapt well to their jobs.

Any policy related to the training of new teachers must take advantage of the new enthusiasm for the teaching profession among tertiary students which is the result of the new incentives. At the same time, controls on the intake of pre-service training candidates will be necessary to ensure that only a reasonable number enter the system. While full control of intake would be too rigid, the system would benefit from managed intake, based on forecasts of future teacher needs. No controls can lead to either too many teachers entering the system or inefficiencies associated with teacher candidates seeking work in other professions.

Hiring of teachers (demand*)*

In many ways, the trend towards increased hiring at the district and school level is positive. Increased hiring at these levels fosters greater flexibility and better addresses actual needs, since schools and local governments are more closely in touch with the end-users of educational services. However, while local governments are responsible for hiring, they do not bear the brunt of the costs, as the central government pays the salaries of civil servants through funds that are transferred to the districts (DAU). The central government also pays all functional, certification, and other teacher allowances for both public and private school teachers. The hiring and payment of teachers must therefore be realigned so that the true costs of an additional teacher are considered at the time of hire. Options for addressing existing policy distortions include:

- basing the amount of the DAU on a district's student population, enabling districts both to hire and pay teachers, including their base salary and allowances;

- having districts cover some of the costs of teacher allowances, such as the functional allowance, so that they assume part of the financial burden of hiring additional teachers and would therefore have an incentive to control hiring within the district;

- managing the expenditure of BOS funds on teachers by:

  - *in the short-term*: minimizing the amount of BOS funds that can be used for hiring teachers at the school level

  - *in the long-term:* incorporating teacher salaries into school BOS allocations and requiring schools to hire teachers and pay their full salaries, including bonuses;

- perhaps limiting the number of teachers eligible for the certification allowance, so that not all school-hired teachers (a hiring process not controlled by the central government) are automatically eligible to receive it.

- in the long-term, possibly moving towards a system where civil servant teacher positions are abolished and a new system for the teaching force is elaborated instead.

Capacity development at both the district and school level must accompany the above recommendations in order for these policies to be effective. Districts require support in how to hire and manage teachers, including the forecasting of teacher needs, the optimal placement and distribution of teachers, and working with schools to manage teachers. Best practice examples in such districts as Gorontalo and Tanah Datar provide models that demonstrate the power of effective teacher management. Schools require training in school-based management, including teacher management, in order to harness their increased role in hiring and managing teachers.

Taking advantage of the retirement wave

The retirement wave—in which over 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.

Establishing a quality assurance framework

Overall teacher management requires an effective quality assurance system that has well-defined functions for each stakeholder. Such a system should have clearly defined strategies, as well as instruments that measure and hold individuals and institutions accountable for both how well teachers perform and students learn. In general, a quality assurance framework has the following key aspects: (1) performance standards; (2) performance assessments; (3) performance reporting; (4) impact evaluations of policies and programs; (5) operational requirements; (6) adequate and equitable resources; (7) autonomy, intervention, and support; and (8) accountability and consequences for poor performance. Currently, the teacher management effort in Indonesia is still largely based on standards, requirements, and, to some extent, teacher certification; the other aspects have not yet received enough attention.

In order to address the deficiencies in teacher quality assurance, schools must be put at the center of the debate. The school is the front line—the place where demand for teachers is generated, a teacher's performance can be observed, and teaching and learning results can be measured. In many countries, giving schools the power to hire and fire teachers has ultimately proved effective in improving teacher performance and accountability. However, a comprehensive quality assurance framework needs to be put in place in Indonesia to support effective decentralized decision making. The principal reforms needed to institute such a framework are summarized in the main text.

Steps to improve teacher quality

In terms of specific steps to improve teacher quality, the following options might be considered:

- Enhancing the teacher certification process:
    - Use the certification process to identify good, competent teachers and weed out incompetent ones. Currently the pass rate for new teachers is nearly 100 percent. If higher standards were set, it would not only ensure higher-quality teachers, it would also reduce the costs related to their professional allowances.
    - Revise the instruments of certification. The portfolio review is insufficient as a mechanism for identifying good, competent teachers; additional activities, such as an impartial subject matter competency test, are required.

    - Require periodic recertification. Certification should not be a one-time process but rather require teachers who become certified to either undergo periodic recertification or demonstrate good performance in order to maintain their certification.
- Linking performance incentives to student outcomes.
- Using teacher induction during the probationary year to improve the effectiveness of beginning teachers.
- Using teacher performance appraisals to provide annual confirmation of the efficiency of all school staff.
- Improving the performance of teachers through regular reporting on their efficiency; the identification of failing teachers and the adoption of practices for their improvement; progression and promotion based on merit, with salary increments linked to teacher performance; and the promotion of the most effective teachers to management roles.
- Improving career paths via policies that establish a ladder of progressive graded levels (i.e., profiles) and a promotion pathway that links career stages to continuous accredited professional development activities offered by the LPTKs and other providers.
- Involving professional educators in the certification process. In particular, every school principal should be involved in the assessment of the effectiveness of teachers in his or her workplace.

The above summary of policy recommendations, while useful, can mask the complexities of teacher management. The main text of the report analyzes the drivers and necessary conditions for pivotal policies. The mix of policies is also important—some policies cannot stand on their own and require supporting policies in order to be effective. The implementation implications of these measures must be fully considered and understood beforehand. The report that follows provides a more detailed analysis of the key enabling factors for teacher effectiveness as well as their policy implications.

Teacher Management in Context

Photo by: Amanda Beatty

Key messages in this chapter:

- With over 3.3 million teachers, Indonesia has one of the largest teaching workforces in the world. Given the size of this workforce, the task of teacher management presents significant challenges.
- Factors that have recently transformed teacher management include:
  - Establishment of the Directorate General for Quality Improvement of Teachers and Education Personnel in 2004, which the government is using to improve teacher management and quality.
  - The Teacher Law of 2005, which radically transformed teacher management by establishing a much more stringent teacher certification system. By 2015, all teachers must complete the certification process, which requires a minimum qualification of a four-year higher education degree. Teachers may also be eligible for key functional, professional (i.e., certification), and special-area allowances. Potentially, these allowances can more than double previous teacher salaries.
  - The transfer of most responsibility for teacher employment and deployment from the national to the district level—a result of the decentralizations process initiated in 2001.
- Teacher certification and the additional allowances established in the teacher law have massive financial implications. The associated costs will shape the education budget over the coming decade. By 2015, the professional allowance alone will comprise about two-thirds of total 2006 education expenditures (including central, provincial, and district expenditures).
- Indonesia has extremely low student-teacher ratios (STRs) by international standards. With the increases in teacher salaries, inefficiencies in the system will become increasingly significant in terms of cost.
- The quality of education in the country is generally considered low. This fact is evidenced by Indonesia's low rankings on international standardized tests.

Background

Developing a highly qualified, efficiently distributed teaching workforce is essential for a successful education system. Effective management of the teaching force can lead to positive student outcomes. It is also critical for producing a competent, motivated, high-quality teaching service. The morale and commitment of teachers depend to a large extent on the ways in which their recruitment, initial training, posting, in-service training, transfer, promotion, appraisal, and professional and administrative supervision are managed.

Effective teacher management is also critical from a financial perspective. In the context of budgetary constraints, it is not realistic for Indonesia to aim at further expansion and a more equitable provision of education services irrespective of cost. Making sure that available teaching staff are allocated and used in the most efficient way, and that additional staff requirements are met in a cost-effective manner, has become a high priority. At the same time, equitable staff allocation across all schools is essential.

With over 3.3 million teachers,[1] the task of teacher management in Indonesia is a significant challenge. This task has been altered by recent events, including the decentralization process of 2001, which placed many teacher management responsibilities at the district level, and passage of the Teacher Law in 2005 which laid the groundwork for one of the largest teacher reform efforts in the world.

1 PMPTK, MONE data from the SIMPTK database, 2005–2006.

Decentralization

As part of the decentralization process begun in 2001, most responsibilities for teacher employment and deployment were devolved from the national to the district level. The central education agencies, such as the Ministry of National Education (MONE), the Ministry of State Administration Reform (MENPAN), and the National Civil Service Board (BKN), still play a role in the hiring of civil servant teachers and in teacher management. However, a great deal of their responsibilities and authority has shifted to district-level governments.

The BKN sets a quota that governs the number of civil servant teachers that each district can hire. However, it is the districts themselves that manage the civil service exam and determine whom to hire. In addition, the number of school-hired teachers and district contract teachers has increased, which changes the make-up of the teaching workforce. The districts also determine the deployment of teachers. Efficient distribution and planning, however, require up-to-date, accurate data, along with in-depth analysis; many districts do not have this capacity. Uninformed employment and deployment decisions can lead to great inefficiencies, so developing the capacity of districts is a vital element of education system reform.

Teacher Law

Indonesia embarked on a major teacher reform with passage of the Teacher Law (UU/14) in 2005. One of the main goals of the law is to improve the quality of education through a teacher certification process. The law and related regulations are intended to improve the quality of the teaching workforce by recognizing teacher competencies and professionalism. These goals are achieved through a series of professional and location incentives intended to encourage teachers to upgrade their qualifications and make serving in remote locations more attractive.

Teacher costs will increase significantly. In the past, teacher salaries tended to be quite low, making teachers a relatively inexpensive resource. However, under the new law, certified teachers will receive double the base salary of a civil servant teacher. As new teachers enter the system and existing teachers go through the certification process, an increasingly larger portion of the education budget will be allocated to salaries.

The cost of the professional teacher allowance will be driven by the number of certified teachers. Due to both financial and logistical constraints, it was not possible to have all eligible incumbent teachers undergo the certification process immediately. In an effort to control the number of teachers who receive the professional allowance, MONE has established a quota system. Under this system, a specified batch of teachers is eligible to complete the certification process each year. According to MONE's current estimate, which also makes the assumption that the overall number of teachers will not increase, all non-honoraria teachers will be certified by 2014. Teachers that become certified in a given year will begin to receive their professional allowance the following year and continue to receive it until retirement.

Table 1. **MONE Quota for Teachers Undergoing Certification, plus Associated Professional Allowance Costs**

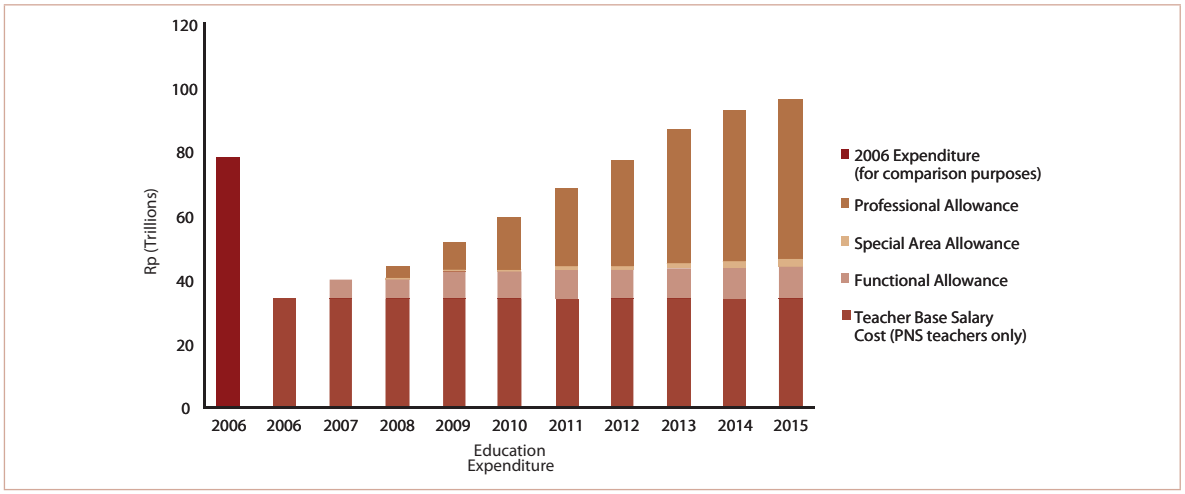
Year	Quota of teachers	Cumulative number of teachers certified	Percent of total teaching workforce	Annual cost (IDR millions)
2006	20,000	20,000		--
2007	180,450	200,450	8.5%	158,742
2008	200,000	400,450	20%	3,608,100
2009	346,500	746,950	40%	8,649,720
2010	396,504	1,143,454	55%	16,134,120
2011	396,502	1,539,956	70%	24,698,606
2012	396,502	1,936,458	80%	33,263,050
2013	258,055	2,194,513	90%	41,827,493
2014	111,502	2,306,015	100%	47,401,481
2015		Completion of incumbents		49,809,924

Source: PMPTK estimates, 2009.
Note: Assumes that the number of teachers remains constant, with the same number of teachers retiring as being hired.

To put the cost in perspective:

- By 2015 the professional allowance alone will be equal to approximately two-thirds of total expenditures on education in 2006 at the central, provincial, and district levels.
- By 2012, taking other teacher salary costs into account (i.e., base salary, the new functional allowance, and the special area allowance), expenditures on salaries alone will equal total expenditures on education in 2006 at the central, provincial, and district levels.

Figure 1. **Illustration of the Increased Cost (in real terms) due to New Teacher Allowances**



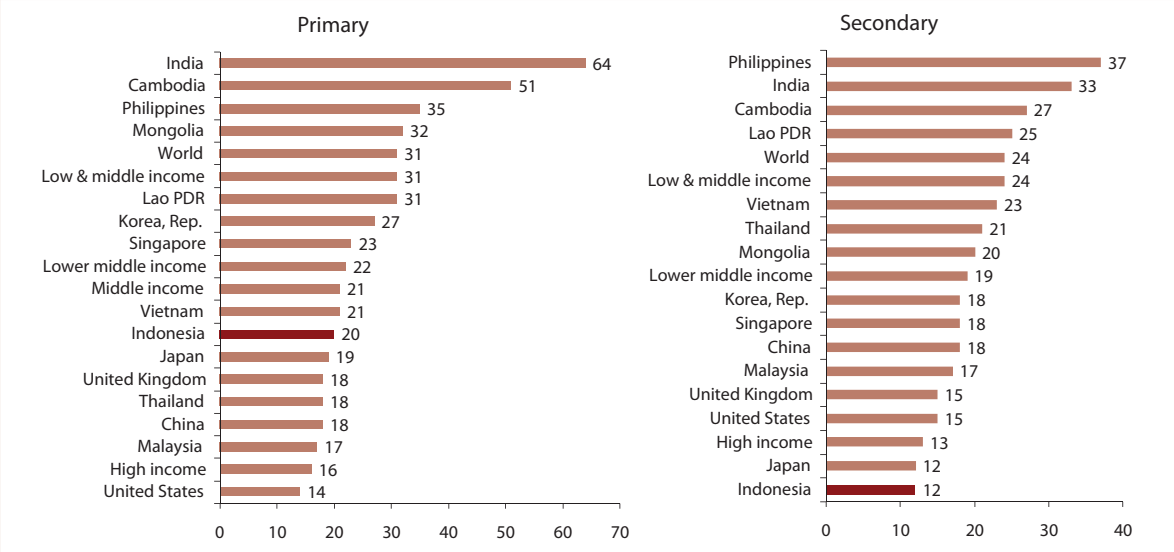
Source: MONE PMPTK data from "Education Sector Assessment" presentation, 2008.
Note: Assumes that the number of teachers in the system does not increase. The costs above are in real terms in order to compare years. If shown in nominal terms (adjusting for inflation), the amount in future years would be higher.

Efficiency concerns

The massive financial implications of teacher certification raise concerns regarding the efficiency of teacher hiring and deployment. Student-teacher ratios are often used to measure quality and efficiency in an education system. A high STR may be an indication of low educational quality, with insufficient allocation of resources. Conversely, a low STR can be an indicator of system inefficiency because teacher salaries typically comprise a high proportion of the overall education budget.

Indonesia's STRs at both the primary and secondary levels are very low in comparison with those of its neighbors and peer developing countries (see figure 2 below). The global average STR at the primary school level is 31:1. In Indonesia it is considerably lower, 20:1—on par with Japan. At the secondary school level, comparisons are even more striking,[2] with the average Indonesian STR at 12:1. This is the lowest ratio in the East Asia region, along with that of Japan. It is well below the STR of countries such as South Korea, the United Kingdom, and the United States, and a strong indicator of system inefficiency.

Figure 2. Cross-country Comparison of Student-teacher Ratios, East Asia and Selected Countries



Source: World Bank, Edstats online query database, using 2007 data (or next available year for countries without 2007 data).

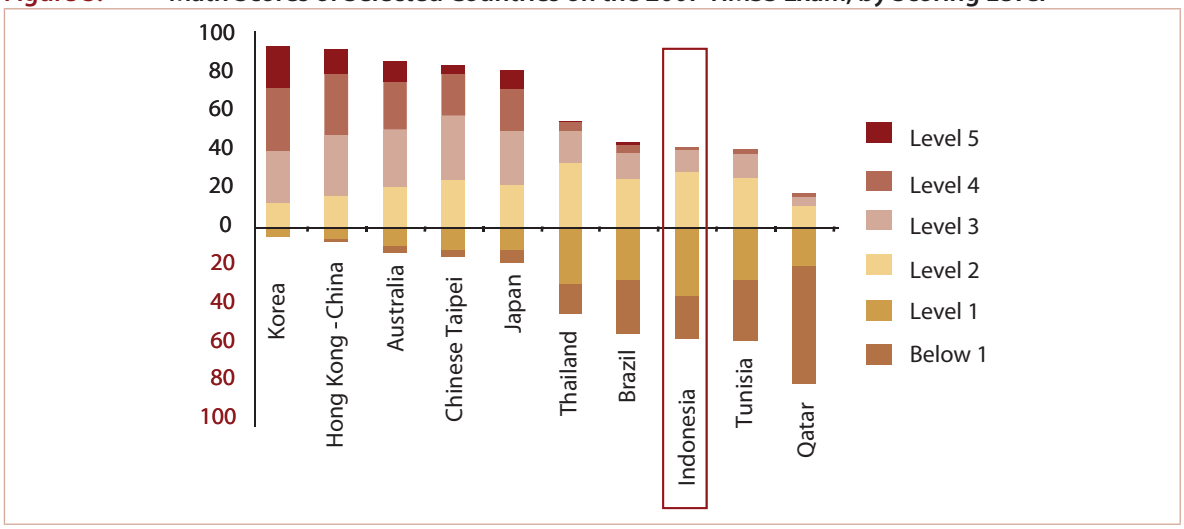
Quality of education and its links with teacher quality

Although student outcomes have been improving, Indonesian students still rank low on international standardized tests. As a result of a focus on expanding enrollment over several decades, the education system has not consistently produced graduates with the high-quality knowledge and skills needed to build a strong society and a competitive economy. Standardized international exams demonstrate that Indonesia's student outcomes are lower than those of students in other developing countries, even after taking family socioeconomic status into account. This fact suggests that deficiencies in the education system, rather than the socioeconomic backgrounds of students, are responsible for lower levels of performance.

2 Based on data from the Edstats database of the World Bank; this database does not separate junior secondary and senior secondary levels, but instead provides a combined secondary value.

On the Program for International Student Assessment (PISA) test in 2006, Indonesia improved its math score substantially to 391 (from 360 in 2003). It also improved its reading score to 393 (from 382 in 2003; see figure 3). While Indonesia is now ahead of countries such as Argentina, Brazil, and Tunisia, it still ranks among the bottom 10 of the 56 countries that participated in the assessment. Among the teacher-related reasons that contribute to the low quality of Indonesia's secondary school graduates are an ineffective learning process, with a heavy focus on theory and rote learning, and a high proportion of unqualified teachers without proper incentives to focus on student achievement.

Figure 3. Math Scores of Selected Countries on the 2007 TIMSS Exam, by Scoring Level

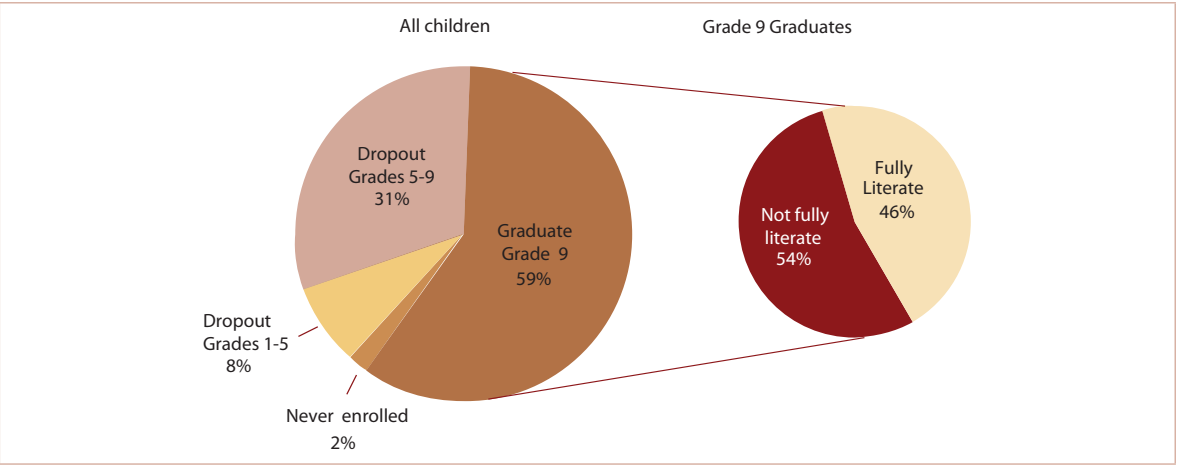


Source: Mullis, Martin and Foy. (2008)

International evidence shows that additional years of schooling do not necessarily improve the quality of school graduates. Research by Hanushek and Wößmann (2007) measured literacy in a number of countries. Evaluations were based on household survey data combined with international student achievement tests.[3] The results for Indonesia show that among a recent cohort of children, 59 percent completed grade 9, yet only 46 percent actually had attained functional literacy. Thus, 54 percent of graduates of 9th grade had not achieved a level of basic competency. This fact demonstrates that in addition to improving access, Indonesia must now concentrate on ensuring that additional years of education are of high quality.

3 For countries with both reliable attainment data from household surveys and data from international student achievement tests, the study combined educational attainment of 15–19-year-olds from the latest available year with test scores at the end of lower secondary education (8th grade, or 15-year-olds) from the adjacent year. This methodology allowed for calculation of rough shares of recent cohorts of school-leaving age, including (1) how many were never enrolled in school, (2) how many dropped out by grades 5 and 9, (3) how many finished grade 9 with test scores below 400 (functional illiteracy), and (4) how many finished grade 9 with test scores above 400 (basic literacy in cognitive skills).

Figure 4. **Measurement of "Functional Literacy" of 9th Grade Basic Education Graduates in Indonesia**



Source: Hanushek and Wößmann (2007).

The quality of teachers is the most important factor in improving the quality of education. Research shows that what teachers know and what they are able to do has a significant impact on the academic performance of their students. A recent McKinsey study summed up the issue, stating: "The quality of an education system cannot exceed the quality of its teachers" (Barber and Mourshed 2007, 16). While it is both extremely difficult and controversial to quantify the effects of the multiple factors that influence student performance, studies almost universally demonstrate the importance of the quality of teachers. Groundbreaking research by Sanders and Rivers (1999) on the Tennessee Value-Added Assessment System (TVAAS) estimated the impact of the quality of teachers on student performance. The study found that if average 8-year-old students (scoring in the 50th percentile on a standardized examination) were given teachers of varying qualities, their performance levels diverged dramatically. Specifically, one group was given high-ability teachers (top 20 percent) and the other group, low-ability teachers (bottom 20 percent). After three years, the performance of the two groups had diverged by more than 53 percentile points. Thus, by age 11, the upper group was scoring in the 93rd percentile and the lower group, in the 37th percentile. This research also indicated that as teacher quality improved, lower-achieving students benefited most significantly.

The Indonesian government has placed a high priority on improving the quality of teaching in order to improve student achievement. This priority has been evidenced both by the establishment of the Directorate General for Quality Improvement of Teacher and Education Personnel (PMPTK) within MONE in 2004 and the passage of the Teacher Law in 2005. The urgent need for initiatives in this area has been demonstrated by unfavorable comparisons with neighboring countries, based on TIMSS and PISA results. A recent World Bank report identifies some important ongoing problems of teacher management, noting: "Persistent issues that need to be resolved in the era of decentralization include teachers' remuneration, incentives, career structure and promotion, their recruitment and deployment, their education and competence, their career development and in-service training, and their empowerment in the context of school-based management" (World Bank 2005, 129).

The Teacher Law has begun to address certain critical teacher quality issues. In particular, it addresses remuneration and competency. The law requires teachers to become certified in order to become eligible for a professional allowance that doubles their remuneration. The law is quite specific about the rights and

obligations of certified teachers.[4] Specifically, these include:

- the right to receive incomes above the minimum subsistence level, plus social security benefits;
- promotions and rewards in accordance with their tasks and performance;
- legal protection in carrying out their tasks and exercising their intellectual property rights;
- opportunities to improve their competencies;
- learning facilities and infrastructure to support their professional tasks;
- freedom to give scores and take part in decisions regarding graduation, rewards, and/or sanctioning of students in accordance with educational rules, the teaching code of ethics, and legislation;
- safety and security in carrying out their tasks;
- freedom of union in professional organizations;
- opportunities to take part in deciding educational policies; and
- opportunities to develop and improve quality and skills and/or training and professional development in their fields.

Purpose of the Study

This study seeks to achieve multiple goals. It is hoped that various stakeholders will benefit from its findings. Specifically, the study attempts to:

1. Build a solid analytic base to assist the Government of Indonesia in refining current teacher management policies in light of the new Teacher Law and setting up a future agenda for continued reform.
2. Add value to ongoing teacher management reforms in Indonesia, including decentralization, by improving the effectiveness of the reforms and ensuring their institutional and fiscal sustainability.
3. Contribute to global knowledge in the area of teacher management.

4 Draft Law for the Republic of Indonesia 15/2005, Section 14.

Teaching Force: Profile and Trends

Photo by Erly Tatontos

Key messages in this chapter:

- Indonesia has three key categories of teachers: (1) civil servants, (2) contract teachers, and (3) school-hired teachers.
- The private sector plays a key role in Indonesia's education system. A unique partnership has developed in which the government subsidizes private schools in terms of operational costs and teacher subsidies; in some cases, it also provides teachers.
- In general, the gender of the teaching workforce is very well balanced. However, most principals are male. Also, the number of female teachers is disproportionately high in urban areas, while males often dominate teacher ranks in remote areas.

Current factors affecting teaching workforce

- Teacher workloads are generally very low. This is particularly true in secondary schools, where only 20 percent of teachers meet the new minimum of the 24-period/hour teaching load mandated by the new certification requirements.
- Historically, teachers have received low levels of remuneration in Indonesia. However, pay increases for civil servants have averaged 17 percent per year over the past four years. In addition, changes to the system provide a functional allowance for all teachers (equal to 10 percent of a base civil servant salary); additional new allowances can double or even triple base salaries in certain circumstances. With these increases and additional allowances, teaching is becoming a well-paid and more desirable profession.
- The average age of teachers is increasing. The age of the biggest proportion of teachers is between 35 and 50 years. This fact is due to a massive primary school expansion that occurred in the 1980s. As a result, 30 percent of all civil servant teachers will retire over the next 10 years.
- Contrary to popular belief, rural schools are not generally understaffed. However, they often lack qualified teachers. In smaller schools (fewer than 200 students), more than 30 percent of teachers have only a high school degree or less.
- The hiring process for civil servants is complex and varies by teacher type. Under current procedures, districts hire teachers, but the central government pays their salaries. This process creates a perverse incentive for districts to increase the proportion and number of civil servant teachers.
- The big increase in hiring since decentralization has been in school-hired teachers, partly because the new operational funds (BOS) provided to all schools by the central government can be used for this purpose.

Educational Quality

- The educational attainment of teachers is generally very low; only 37 percent hold a four-year degree. With the new certification requirement, the proportion of teachers with a four-year degree has been increasing by 5 percent each year, as teachers upgrade their skills and new, more educated teachers enter the system.
- Teachers have scored poorly on competency exams, raising concerns about the quality of their instruction.
- Teachers in rural and remote areas have much lower educational attainment than teachers in urban schools.
- Teacher absenteeism is high in Indonesia, particularly in remote areas, but has fallen since 2002.

System Overview

Indonesia has two main ministries that manage education. The Ministry of National Education (MONE) is responsible for 81 percent of schools, 87 percent of students, and 81 percent of teachers. The remainder is the responsibility of the Ministry of Religious Affairs (MORA). The *madrasah* (religious) school system managed by MORA is mainly private; only 6 percent of all schools and 18 percent of all students are enrolled in the public madrasah system. In the MONE system, 92 percent of primary students attend public schools. By the junior secondary level, this proportion falls to 73 percent. By the senior secondary level, the proportion falls to 63 percent in the general education track and only 33 percent in the vocational track. MORA operates a centralized system, while MONE operates a decentralized system in which the district education office has responsibility for most management functions.

Table 2. Overview of School, Student, and Teacher Numbers under MONE and MORA, 2006–2007

		SCHOOLS			STUDENTS			TEACHERS		
School Level	**Type**	**Public**	**Private**	**Total**	**Public**	**Private**	**Total**	**Public**	**Private**	**Total**
Kindergarten	MORA (RA)	113	18.646	18.759	3.022	797.903	800.925	297	68.886	69.183
	MONE (TK)	692	62.752	63.444	50.224	2.733.189	2.783.413	4.675	228.888	233.563
	Kindergarten Total	**805**	**81.398**	**82.203**	**53.246**	**3.531.092**	**3.584.338**	**4.972**	**297.774**	**302.746**
Primary	MORA (MI)	1.567	19.621	21.188	342.579	2.528.260	2.870.839	21.042	200.009	221.051
	MONE (SD)	132.513	12.054	144.567	24.403.611	2.223.816	26.627.427	1.316.109	129.023	1.445.132
	Primary Total	**134.080**	**31.675**	**165.755**	**24.746.190**	**4.752.076**	**29.498.266**	**1.337.151**	**329.032**	**1.666.183**
Junior	MORA (MTs)	1.259	11.624	12.883	558.100	1.789.086	2.347.186	39.883	202.292	242.175
Secondary	MONE (SMP)	15.024	11.253	26.277	6.330.728	2.283.578	8.614.306	421.101	200.777	621.878
	MONE Non-formal	162		162	21.954		21.954			
	JS Total	**16.445**	**22.877**	**39.322**	**6.910.782**	**4.072.664**	**10.983.446**	**460.984**	**403.069**	**864.053**
Senior	MORA – General (MA)	644	4.754	5.398	307.229	548.324	855.553	26.875	85.535	112.410
Secondary	MONE – General (SMA)	4.493	5.746	10.239	2.355.179	1.403.714	3.758.893	172.934	132.918	305.852
	MONE - Vocational (SMK)	1.748	4.998	6.746	912.434	1.826.528	2.738.962	79.327	15.146	94.473
	SS Total	**6.885**	**15.498**	**22.383**	**3.574.842**	**3.778.566**	**7.353.408**	**279.136**	**233.599**	**512.735**
Special	MONE (SLB)	193	789	982	11.022	36.648	47.670	2.606	7.353	9.959
Education	**SE Total**	**193**	**789**	**982**	**11.022**	**36.648**	**47.670**	**2.606**	**7.353**	**9.959**
TOTAL		**158.408**	**152.237**	**310.645**	**35.296.082**	**16.171.046**	**51.467.128**	**2.084.849**	**1.270.827**	**3.355.676**

Source: Government of Indonesia (2008c and 2008d).

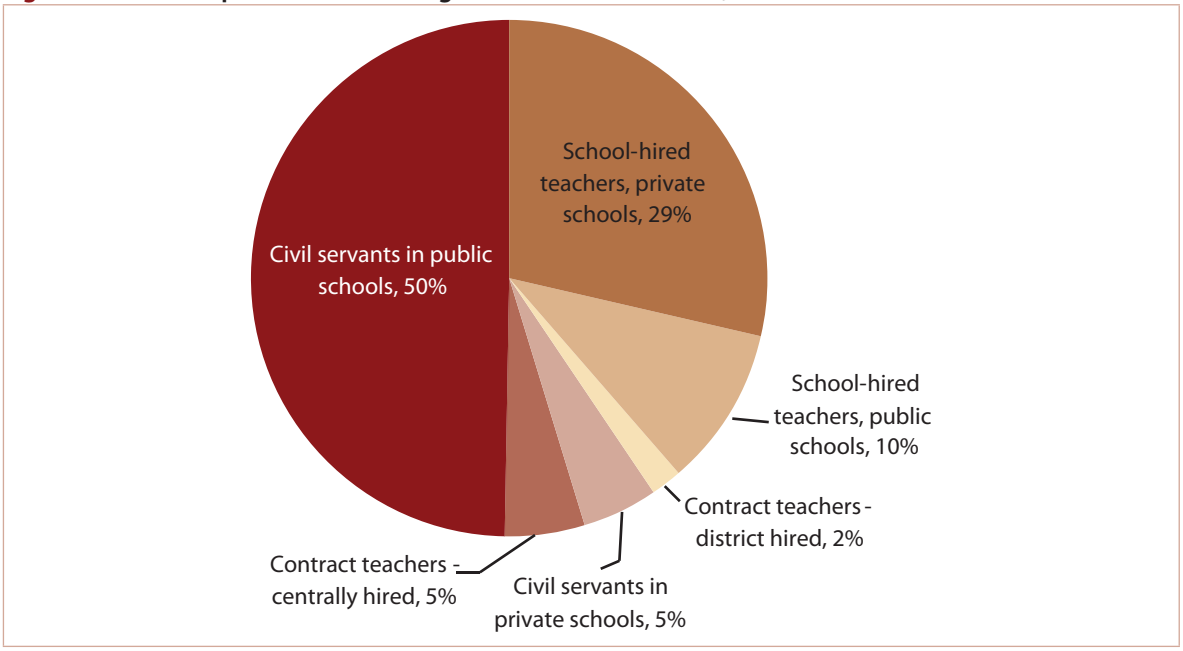
Teacher types

Due to the complexity of Indonesia's education system, a variety of teacher types exists. These types can be classified into three major groups: (1) civil servant (PNS), (2) contract, and (3) school-hired teachers. All of these teacher categories can be found in public and private schools managed by both MONE and MORA. The composition of the teaching workforce has undergone dramatic changes in recent years, in part due to decentralization and new teacher policies. Key trends include:

1. The number of civil servant teachers has generally decreased in recent years.
2. After massive hiring of contract teachers by MONE in 2003, a hiring freeze was imposed. All centrally hired contract teachers will be converted to civil servant teachers by 2009.

3. With the advent of decentralization, it has become more common for teachers to be hired directly by the school where they work.

Figure 5. Composition of Teaching Workforce in Indonesia, 2006



Source: MONE PMPTK Teacher Database (SIMPTK), 2006.

Table 3. Teacher Types in Indonesia for All Schools and All Levels of Education, 2006

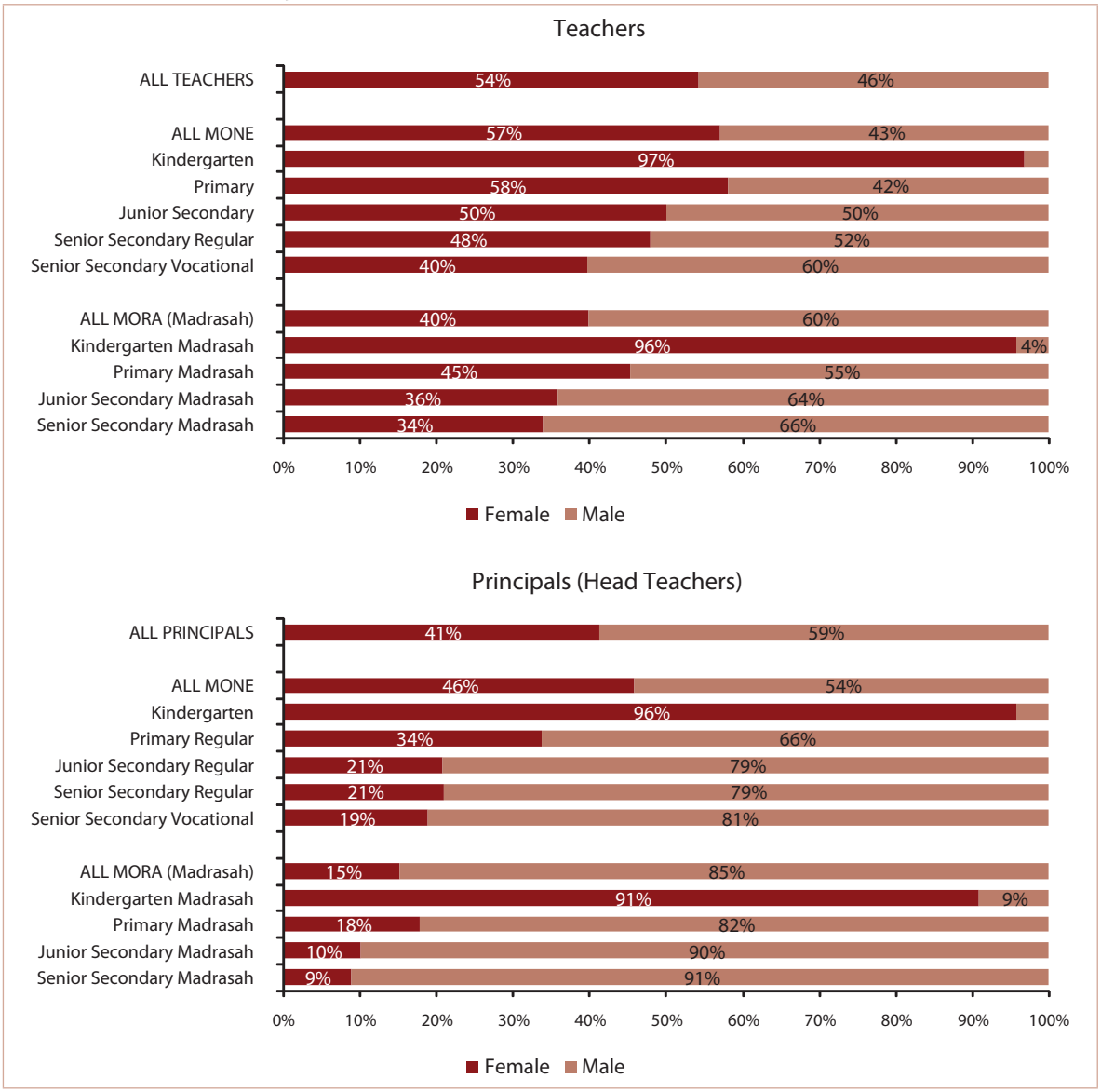
Teacher type	Hired by	Paid by	Key characteristics
Civil Servant teachers			
- Public schools	District	Central (DAU)	• Hiring quota set centrally, but districts select
- Private schools	District	Central (DAU)	• Government assigns a small number of public civil servants to private schools
Contract teachers			
- Centrally hired	Central	Central (DAU)	• To be converted to civil servants by year-end 2009
- District hired	District	District	• Salary is generally 50% of that of civil servant teachers
School-hired teachers			
- Public schools	Schools	Schools, Central (DAU)	• Often paid a low honorarium (10–30% of civil servant salary)
- Private schools	Schools	Schools, Central (DAU)	• School-hired teachers now receive functional and professional allowances paid by central government • BOS grants have increased the number of school-hired teachers

Source: Created by World Bank, 2009.

Gender

In general, the gender of the teaching working force is very well balanced. However, most principals are male. Also, the number of female teachers is disproportionately high in urban areas, while males often dominate the teaching workforce in remote areas. As can be seen in figure 6 below, 54 percent of teachers are female, but only 41 percent of principals are. The issue is more prevalent at higher education levels, where only 20 percent of junior and senior secondary principals are female in MONE schools. This proportion drops to below 10 percent in MORA schools.

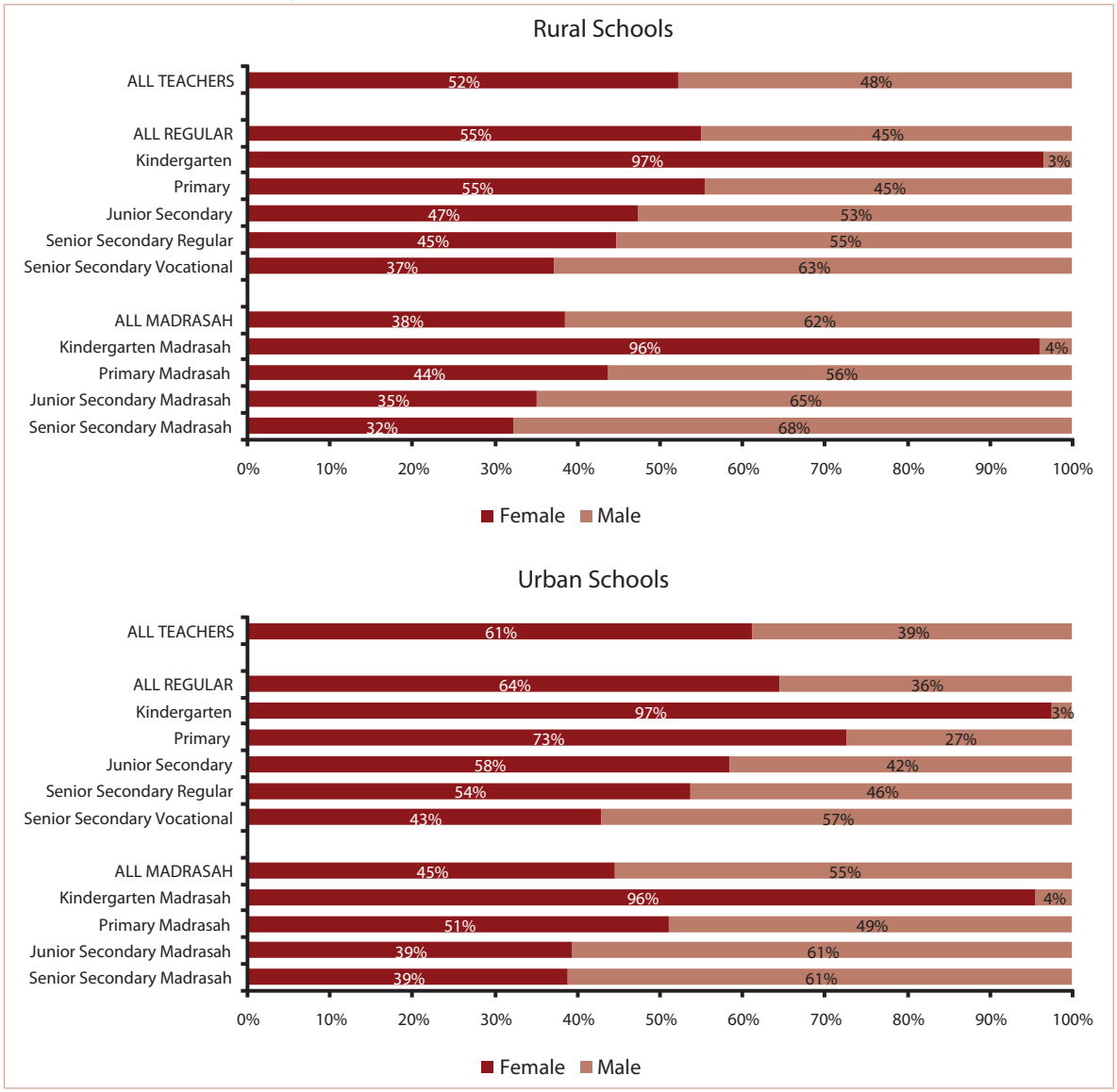
Figure 6. Gender Breakdown of Teachers and Principals, by School Level and MONE/MORA Distribution, 2006



Source: MONE PMPTK Teacher Database (SIMPTK), 2006.

Female teachers tend to work in urban schools or in their village of origin. Overall, 61 percent of teachers working in urban areas are female. In rural areas, this proportion is 52 percent. This trend is partly due to safety and cultural reasons. It is easier to deploy men to rural areas for safety reasons. Married women tend to follow their husbands, but the reverse is not necessarily the case. It is also seen as culturally unusual in some areas for a single woman to move to a village and live on her own. On the other hand, women are generally happier when appointed to their home villages and are much less likely to leave. These factors have implications for how teacher deployment policy is determined.

Figure 7. **Gender Breakdown in Rural and Urban Areas, by School Leveland MONE/MORA Distribution, 2006**

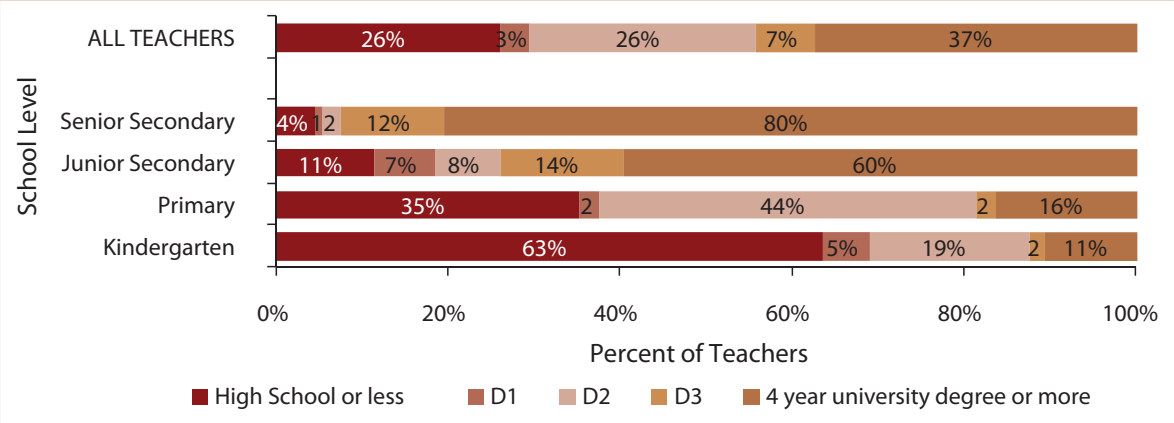


Source: MONE PMPTK Teacher Database (SIMPTK), 2006.

Teacher educational attainment and competency

Many teachers in Indonesia have low education levels. However, the requirement that teachers have a four-year degree, mandated by the 2005 Teacher Law, is promoting improved qualifications. The new law requires that all teachers have a bachelor's degree (S1 degree) or a four-year university diploma (D4 degree) by 2015. An overwhelming number of teachers fell below this new minimum qualification in 2004. At that time, 95 percent of all primary teachers, 45 percent of all junior secondary teachers, and 29 percent of all senior secondary teachers held less than a four-year degree. Since the announcement of the new law, many teachers have been upgrading their skills. By 2006, the proportion of primary school teachers holding the mandated qualifications had increased to 16 percent (an 11-percent jump), while the proportion of junior and senior secondary teachers rose by 5 and 10 percent, respectively. Despite this progress, only 37 percent of the teaching workforce currently has a four-year degree.

Figure 8. Teacher Educational Attainment by School Level, 2006



Source: MONE PMPTK Teacher Database (SIMPTK), 2006.

The increase in the percentage of teachers with a four-year degree can be mainly attributed to the retirement of underqualified teachers and the upgrading of existing teachers' qualifications. Older teachers retiring from the system are less likely to have a four-year degree, while new teachers entering the system are often college graduates. Also, a large number of incumbent teachers have been upgrading their qualifications. Approximately 40 percent of the increase can be attributed to this process. The remaining approximately 60 percent can be attributed to new teachers with four-year degrees who are entering the system as older teachers retire. At the current pace, Indonesia will come close to its legally stated goal of all teachers having four-year degrees by 2015. Virtually all secondary school teachers will have met this qualification, although 20 percent of primary school teachers will still fall short of the requirement. A large percentage of kindergarten teachers will also most likely lack a four-year degree.

Despite progress towards enhanced qualifications, concerns remain about the competency of Indonesian teachers. In 2004, MONE administered an examination to primary and secondary school teachers in order to obtain an indication of their competency (see table 4). The tests were not necessarily administered in a rigorous, nationally representative manner; neither were they calibrated to a meaningful score. In many subjects, the average score for primary school class teachers was only 38 percent. For secondary school teachers, the average score across 12 subjects was only 45 percent, with average physics, math, and economics scores at 36 percent or less. While it is important to keep in mind that the test was not calibrated, the scores were well below what the test developers had expected. The low competency level of teachers hampers their ability to provide the quality of teaching now required by the country.

Table 4. Teacher Exam Scores by Subject, 2004

	No. of Items on test	Mean score	% correct answers	Std deviation	Low score	High score
Teacher/test type						
General test for primary and kindergarten teachers	90	34.26	38%	6.56	5	67
General test for other teachers	90	40.15	45%	7.29	6	67
Scholastic test	60	30.20	50%	7.40	3	58
Kindergarten class teachers	80	41.95	52%	8.62	8	66
Primary school class teachers	100	37.82	38%	8.01	5	77
Primary school physical education teachers	40	21.88	55%	5.56	8	36
Subject						
Civics	40	23.38	58%	4.82	3	39
History	40	16.69	42%	4.39	3	30
Indonesian language	40	20.56	51%	5.18	2	36
English	40	23.37	58%	7.13	1	30
Secondary school PE	40	13.90	35%	5.86	2	29
Mathematics	40	14.39	36%	4.66	2	36
Physics	40	13.24	33%	5.86	1	38
Biology	40	19.00	48%	4.58	5	39
Chemistry	40	22.33	56%	4.91	8	38
Economics	40	12.63	32%	4.14	1	33
Sociology	40	19.09	48%	4.93	1	30
Geography	40	19.43	49%	4.88	3	34
Arts education	40	18.44	46%	4.50	2	31
Special education	40	18.38	46%	4.43	2	29

Source: PMPTK Presentation, 2004.

The Teacher Law now mandates that, in the future, all teachers must be able to demonstrate competency in four groupings of essential competencies: pedagogical, personal, professional, and social. The National Standards Board (BSNP) has developed a set of standards for teachers, principals, and school supervisors. These standards are the basis of the instruments used to certify teachers. The national accreditation agency (BAN-PT) also requires universities to demonstrate that they have used these standards to revise existing courses and develop new teacher training courses, such as the new four-year S1 degree for primary teachers.

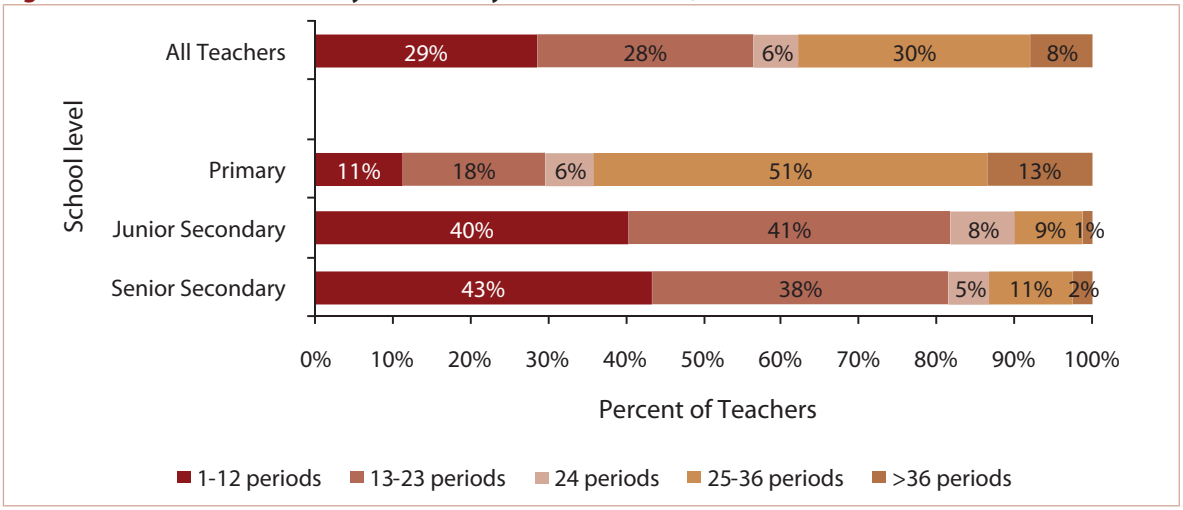
Teacher workloads

Teacher workloads are currently very low, particularly in junior and senior secondary schools. MONE has introduced a policy that requires all teachers who receive a professional allowance to work full time, with a minimum of 24 class period/hours each week.[5] This requirement will help prevent the excessive hiring of teachers. In primary and secondary schools, 46 percent of all teachers already meet the 24-period/hour

5 A class period is typically around 45 minutes in length, so a teacher with 24 class periods would have a total of 18 hours of actual class time each week. The requirement has often been called the "24-hour rule," even though it isn't actually 24 hours.

minimum. In primary schools, 70 percent of teachers meet the minimum, and another 18 percent have between 13 and 23 periods, so it may not be difficult for them to find the additional hours needed to meet the minimum requirement. The majority of teachers who do not meet the required minimum are religion and sports teachers, who are typically not assigned as many hours as other teachers.

Figure 9. Hours Worked by Teachers by Education Level, 2005–2006



Source: MONE PMPTK Teacher Database (SIMPTK), 2006.

The workloads of secondary school teachers are significantly lower: only 19 percent of junior secondary and 18 percent of senior secondary teachers teach the minimum required number of period/hours. This situation is largely due to the fact that teachers are hired for specific subjects. In small schools, it is more difficult for teachers of a single subject to fill the 24-period/hour requirement. This is particularly true for subjects such as geography, for which only one period is required each week per class in the general senior secondary curriculum.

The 24-period/hour requirement is a critical mechanism for controlling teacher hiring. However, it creates both practical and political challenges. While the number of civil servant (PNS) teachers can be controlled centrally, school-hired teachers in public schools (Indonesia acronym, GTT), teachers contracted by the districts (*Honor Daerah*) and teachers in private schools (Indonesia acronym, GTY) are outside of the direct control of both MONE and MORA. Yet the 24-period/hour requirement indirectly prevents schools from hiring too many teachers. (See the later section of this paper entitled "Analysis of Staffing and the 24-period/hour Rule" for a more detailed analysis.)

Remuneration

Historically, teachers in Indonesia have been poorly paid. In 2004–2005, the average annual starting salary for primary teachers in Indonesia was less than $3,000. By comparison, the figure in Malaysia in 2004 was more than $8,000 (World Bank 2007, 32). In general, teacher salaries are 20 percent less than those of workers with similar qualifications in Indonesia. Accordingly, teachers often have a high rate of absenteeism because they take second jobs to make ends meet. This reality reduces their motivation and effectiveness in the classroom.

Table 5. Comparison of Teacher Salaries across Countries, by Level of Education ($, PPP)

Country	Year	Primary school		Junior secondary		Senior secondary	
		Starting salary	Top salary	Starting salary	Top salary	Starting salary	Top salary
Argentina	2004	9,499	13,693	9,734	14,134	9,734	14,134
Chile	2005	10,922	17,500	10,922	17,500	10,922	18,321
India	2002/03	11,507	17,811	13,975	22,747	16,977	26,849
Indonesia	**2004/05**	**2,733**	**3,941**	**2,913**	**4,281**	**3,373**	**4,756**
Malaysia	2004	8,389	18,798	11,680	31,028	11,680	31,028
Paraguay	2004	7,038	7,038	11,109	11,109	11,109	11,109
Philippines	2004/05	9,060	10,770	9,060	10,770	9,060	10,770
Sri Lanka	2005	5,006	7,964	5,006	7,964	6,826	10,239
Thailand	2004/05	5,902	27,662	5,902	27,662	5,902	27,662
Uruguay	2003	4,035	5,057	4,035	5,057	4,237	5,309
WEI average	2005	7,696	13,957	8,611	15,808	9,796	16,649
OECD average	2005	27,723	45,666	29,772	48,983	31,154	51,879

Source: UNESCO-UIS/OECD (2005).
Note: Figures in U.S. dollars.

The new allowances mandated by the Teacher Law of 2005, together with yearly civil servant pay increases, are addressing the issue of low teacher salaries. Factors and trends associated with the increases in remuneration for teachers include:

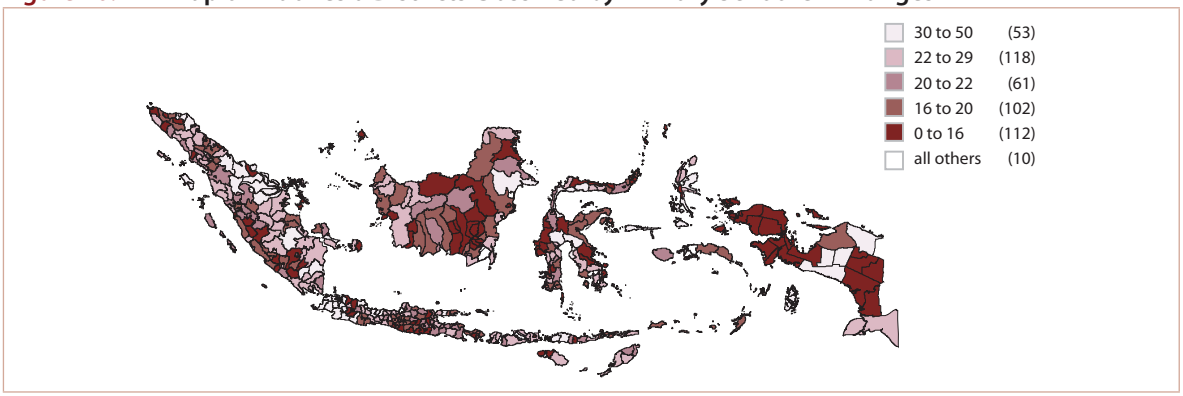
- The Teacher Law doubles the base salary of certified teachers.
- All teachers—in both public and private schools—are now receiving a functional allowance of approximately 10 percent of their base pay, on average.
- Teachers in hardship areas (i.e., remote, conflict-affected, border, and low-performing areas) receive an additional allowance equal to the value of their base salary. This means that a certified teacher in a hardship area earns three times the base teacher salary.
- Contract teachers, who receive salaries that are approximately 50 percent of civil servant salaries on average, will be converted to civil servant status by 2009.

School-hired teachers receive extremely low salaries, often 10–30 percent of a civil servant salary. These teachers are willing to accept low pay in the hope of eventually gaining a civil servant position. The promise of the certification allowance is an even greater incentive to attain this status. (Remuneration is explored in greater detail in the later section entitled "Salary as a Factor in Choosing a Profession.")

Distribution

In addition to a general oversupply, teachers are also unevenly distributed throughout the education system. Some schools have a teacher shortage and large discrepancies exist between districts. As can be seen in figure 10 below, even within regions there are big discrepancies between districts. Many of the predominantly rural districts, in fact, have particularly *low* student-teacher ratios (STRs). Regions such as Papua and Kalimantan contain some of the most rural areas in Indonesia yet have some of the lowest STRs. This situation contradicts the common belief that schools in rural areas tend to be undersupplied, largely because these areas have many small schools. Even with low student numbers, these schools are being staffed according to the formula that a primary school should be allocated a minimum of 9 teachers. (See the section of this report entitled "Small Schools and Staffing at the Primary Level.")

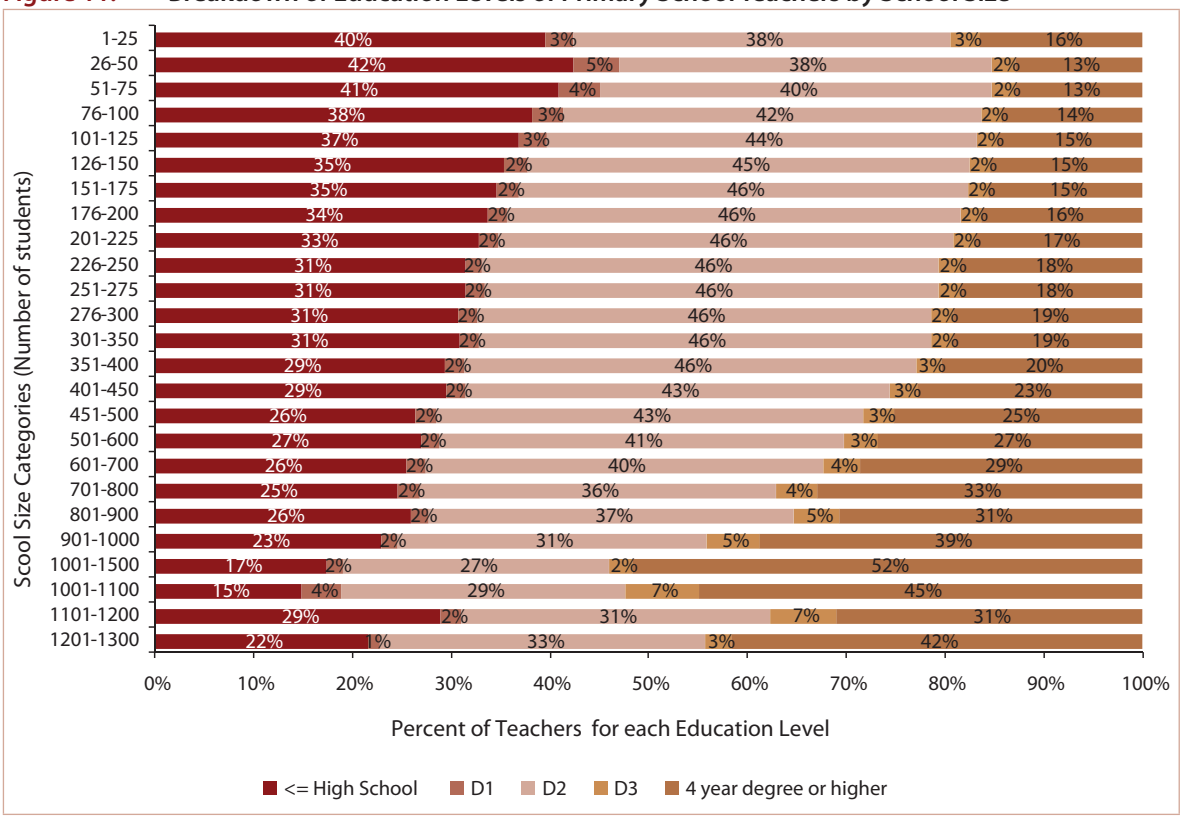
Figure 10. **Map of Indonesia Districts Classified by Primary School STR Ranges**



Source: Map created using data from MONE Teacher Database (SIMPTK), 2006.

Although rural and remote schools tend to have low STRs, teachers at these schools are generally very poorly qualified. Small schools in general tend to have a much lower number of qualified teachers. As shown in figure 11, smaller schools have a much higher proportion of teachers with only a high school diploma or less and a lower proportion of teachers with a four-year degree or higher qualification. There is a direct relationship between school size and the educational level of the teachers, often due to the fact that many teachers in small schools are locally hired individuals, who may not be qualified.

Figure 11. **Breakdown of Education Levels of Primary School Teachers by School Size**



Source: MONE PMPTK Teacher Database (SIMPTK), 2006.

Teacher age

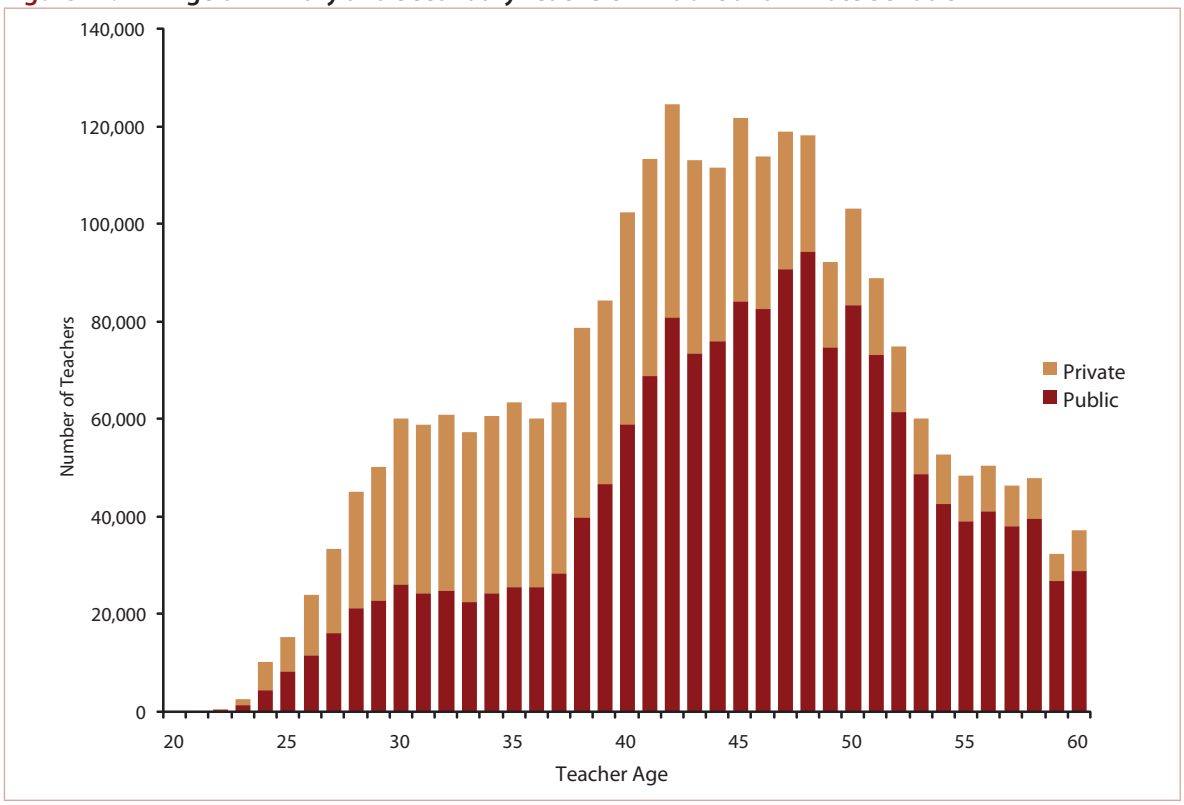
The average age of teachers has been slowly increasing in the country. A significant proportion of teachers are aged between 40 and 50 years, which is largely the result of the campaign to rapidly expand primary schools in the 1980s.

Teachers in public schools tend to be much older than those in private schools. The average age of public school teachers is 45.8 years, compared to 40.5 years among private school teachers. Figure 12 shows that the large majority of teachers over 40 years old are public school teachers. Teachers under the age of 37 are more likely to be private school teachers.

Role of private schools

Private schools play an important role in the Indonesian education system and are significantly supported by the Indonesian government. Private schools have facilitated the expansion of the system, often filling gaps in demand that the public school system has been unable to meet, particularly in poor and rural areas. As a result, the quality of these schools tends to lag behind that of public schools. While the government sees value in these schools, it also recognizes the generally low quality of the education that they provide. Rather than establish public schools that would compete with private schools, the government is instead providing them support in the form of BOS funding. In some cases, it also provides these schools civil servant teachers. The result is a hybrid system that could be classified as a public-private partnership (PPP).

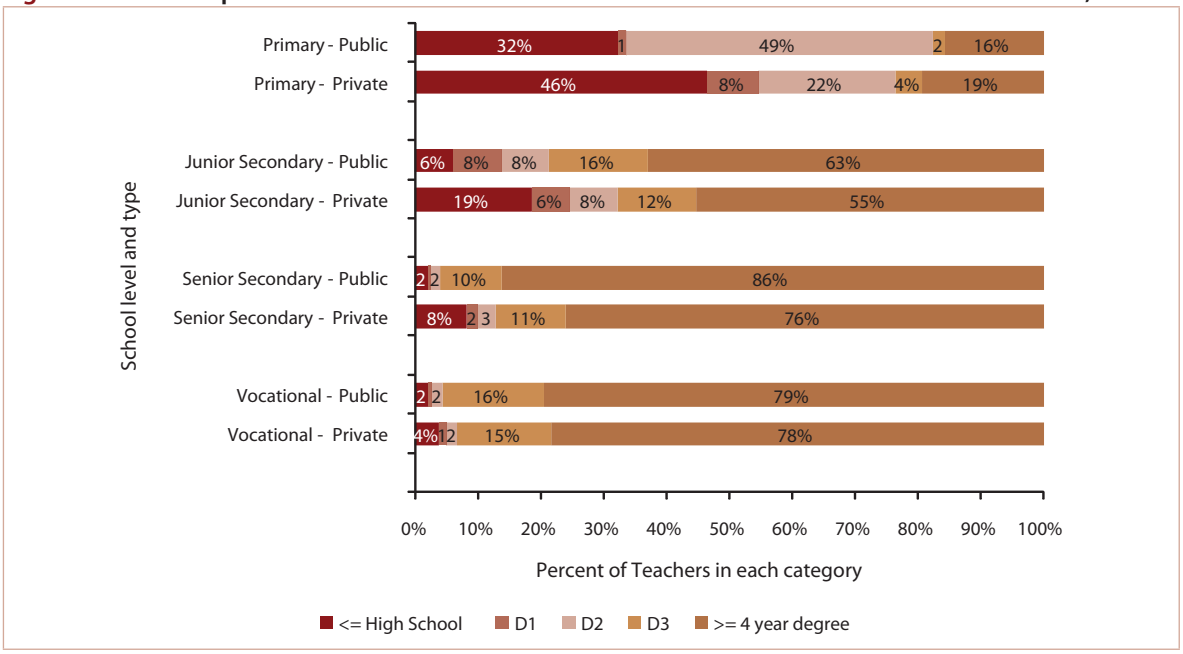
Figure 12. Age of Primary and Secondary Teachers in Public and Private Schools



Source: MONE PMPTK Teacher Database (SIMPTK), 2006.

Private schools can be either very good or very bad. Some elite private schools cater to wealthier families, while others, as noted above, fill gaps in rural and remote areas where public schools are unavailable. The level of educational attainment of public and private teachers is shown in figure 13. In primary schools, the number of teachers with a four-year degree or more is slightly higher in private than in public schools: 19 and 16 percent, respectively. The proportion with a high school diploma or less, however, is higher in private than in public schools (46 to 32 percent). This situation reflects the fact that private schools cater to the upper and lower ends of the income spectrum. In secondary schools, teachers at public schools tend to have higher education levels. Among public junior secondary teachers, 63 percent have a four-year degree or higher, compared to 55 percent in private schools. The figures for senior secondary schools are 86 and 76 percent, respectively.

Figure 13. Comparison of Educational Attainment of Teachers in Public and Private Schools, 2006



Source: MONE PMPTK Teacher Database (SIMPTK), 2006.

Hiring Process

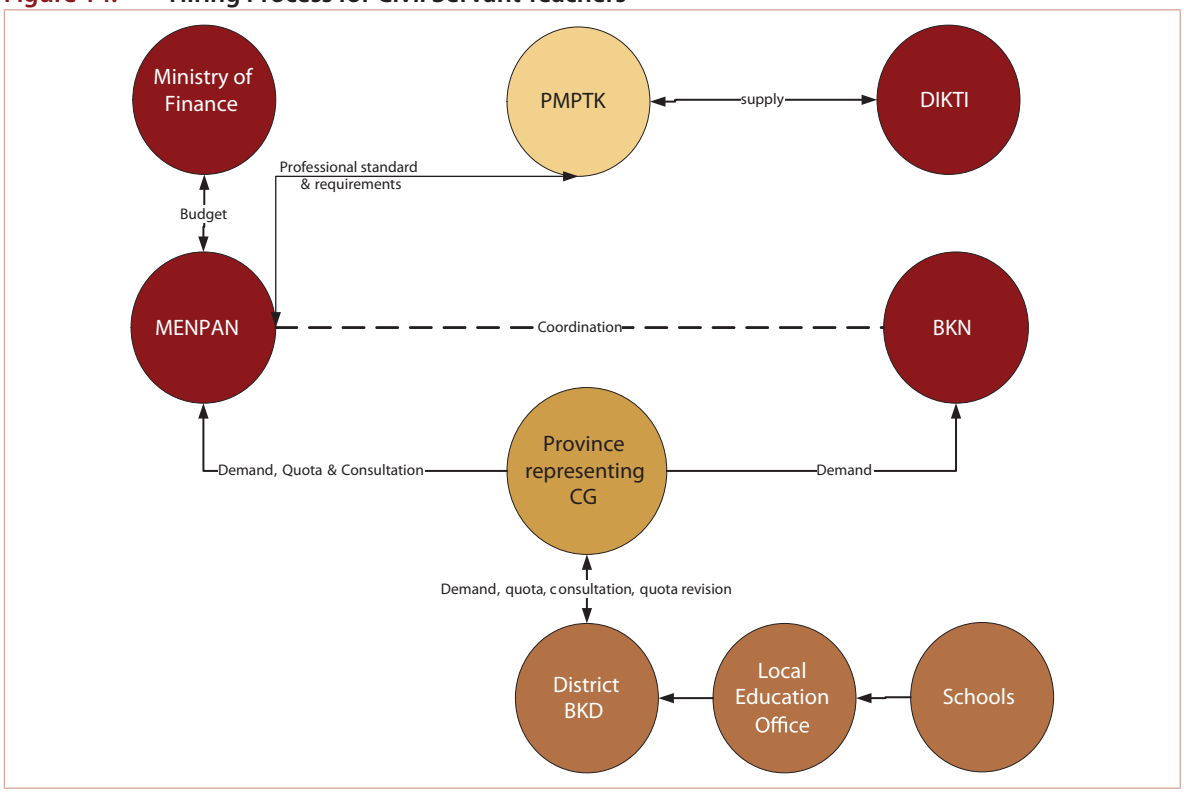
In the era of the centralized education system in Indonesia, teachers in public schools were typically hired as civil servants. Since decentralization, it is now much more common to have teachers hired directly by schools. In the past, teachers have also been hired as contract teachers, both at the central and district levels. During certain periods, these teachers were hired on a large scale.

Hiring of civil servant (PNS) teachers

Before decentralization, the central government was responsible for all aspects of teacher hiring. Now the central government assigns the districts quotas for the number of civil servant teachers that they may hire. The districts then select the teachers. There are two main processes by which civil servant teachers are hired: (1) through the regular PNS recruitment process, which includes a one-year professional pre-service training program offered by the LPTKs, and (2) conversion of contractual or school-hired teachers into civil servant teachers.

Technically, the districts provide the salaries of civil servant teachers. However, these funds are actually transferred from the central government to district governments through a general allocation fund (DAU). In fact, the central government bears the burden of paying these teachers. This process creates inefficiencies. District governments have an incentive to claim a shortage of teachers in order to gain additional resources for which they do not have to pay.

Figure 14. Hiring Process for Civil Servant Teachers



Source: Diagram drawn based on MENPAN description of hiring process, 2008.

The process of hiring teachers involves several central and local government institutions. The following key activities take place when civil servant teachers are hired (see figure 14)**:**

1. Recruitment of PNS teachers is based on an annual *formasi*" or determination of the need for teachers. This includes new posts (vacancies) approved by MENPAN.
2. Each year schools report their demand for teachers to the local Education Office (*Dinas Pendidikan*), which is responsible for providing the necessary teachers. There are various ways of determining the need for teachers; schools do not apply a uniform method.
3. The district BKD (local civil service agency) forwards the district education office request, together with the data on PNS workers required by other local government institutions within the district, to the province, which represents the central government. Teachers are therefore included in the overall formasi of a local government.
4. The provincial government only collects data on required civil servants. In fact, officials in MENPAN confirm that some districts send their requirements directly to them.
5. Once national data on the formasi has been collected, including the demand for new teaching posts, MENPAN seeks technical advice from the BKN in order to determine a quota for each region.

6. Teacher-specific requirements are provided by the PMPTK, including professional standards.
7. In most cases, districts do not receive the number of teachers that they request, since the national budget is limited.
8. Ultimately, the quota for each district is determined by the budget availability specified by the Ministry of Finance (MoF). The MoF provides a ceiling for the national quota and leaves MENPAN to work out the size of the quota for each district.

Unfortunately, this system results in unrealistic requests based on inflated and inaccurate figures. Districts are aware that they will not receive the number of teachers that they request. On the other hand, due to lack of data and poor coordination with MONE, MENPAN is unable to examine and evaluate district requests clearly. Therefore, the districts inflate their requests for new teachers, reportedly up to three times the actual number needed. While MENPAN realizes that this inflation occurs, it doesn't have the information needed to efficiently and equitably determine quotas.

Lack of transparency in the determination of the number of new posts, moreover, results in large-scale nepotism and corruption. MENPAN keeps its formulation of quota allocations secret. It appears to be based on district population numbers and on the figures provided by districts. The lack of transparency is, at least in part, a deliberate policy by MENPAN to protect itself.

Hiring of contract teachers

In recent years, contract teachers have played an important and controversial role in Indonesia's teaching workforce. There was a large influx of contract teachers in 2003–2004. Recruitment of contract staff is allowed by Article 2(3) of Law 43/1999. This article states that in addition to appointing permanent civil servants, an authorized official can appoint part-time employees. However, in 2005, the government indicated that no more contract teachers should be recruited. In addition, existing contract teachers who were paid by the central or district government budget were to be converted to civil servants. The conversions were to take place in batches through 2009.[6] In determining civil servant vacancies, MENPAN allocated a large quota for the conversion of contract teachers. In 2006, of 325,000 vacancies, 315,000 were allocated for these teachers. In 2007, of 300,000 vancacies, 245,000 were reserved for them and only 55,000 for other applicants.

The freeze on hiring contract teachers in 2005 and the promise to convert all such teachers to civil servant status has severely limited this option. The elimination of contract teachers is unfortunate. The system has benefits in terms of flexibility and efficiency in addressing staffing needs. Contract teachers in particular had greater incentives to perform well. Even if the freeze on hiring contract teachers is lifted in the future, there is now an expectation that serving as a contract teacher is an automatic path to acquiring civil servant status.

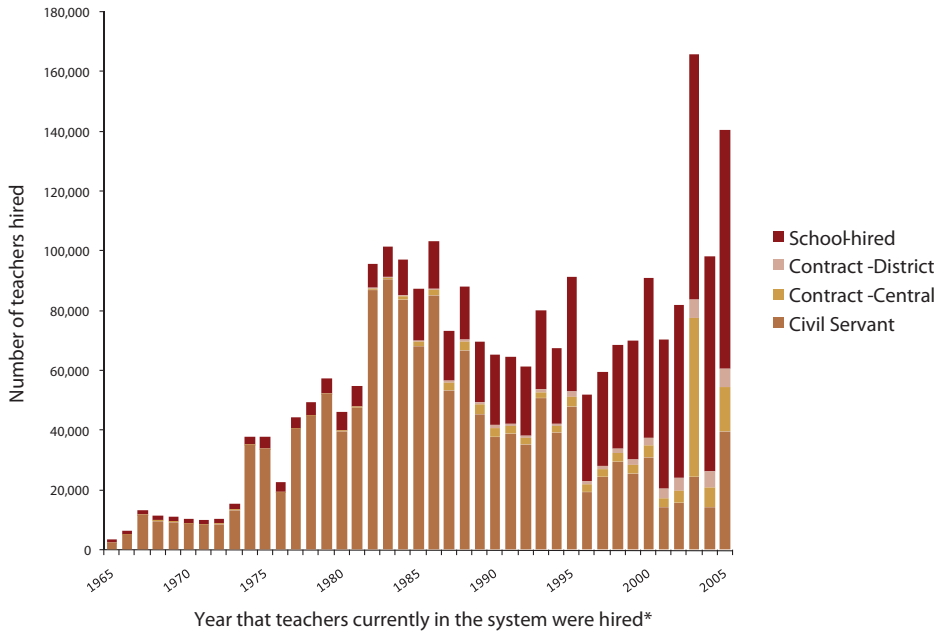
Hiring of teachers by schools

There has been an explosion in the number of teachers hired at the school level since decentralization. This increase is in part the result of schools obtaining additional funds through the BOS grants, of which approximately 30 percent goes to paying teacher salaries. These teachers tend to be paid a minimal salary. Often they are willing to work for low pay in the hope that their service will lead to a permanent civil servant position. In the past, the most common method for hiring teachers was through induction into the civil service, particularly before 1985. In recent years, as can be seen in figure 15, the number of non-civil servant teachers hired has increased dramatically. There has also been a considerable spike in the overall number of teachers hired.

6 Article 6 of PP 48/2005.

District and school decisions can have significant and potentially devastating consequences on the national budget. The spike of teachers hired in the last few years, for example, has dramatic financial implications because the central government pays the professional allowance of certified teachers. Yet the central government has limited ability to control the hiring of teachers by schools.

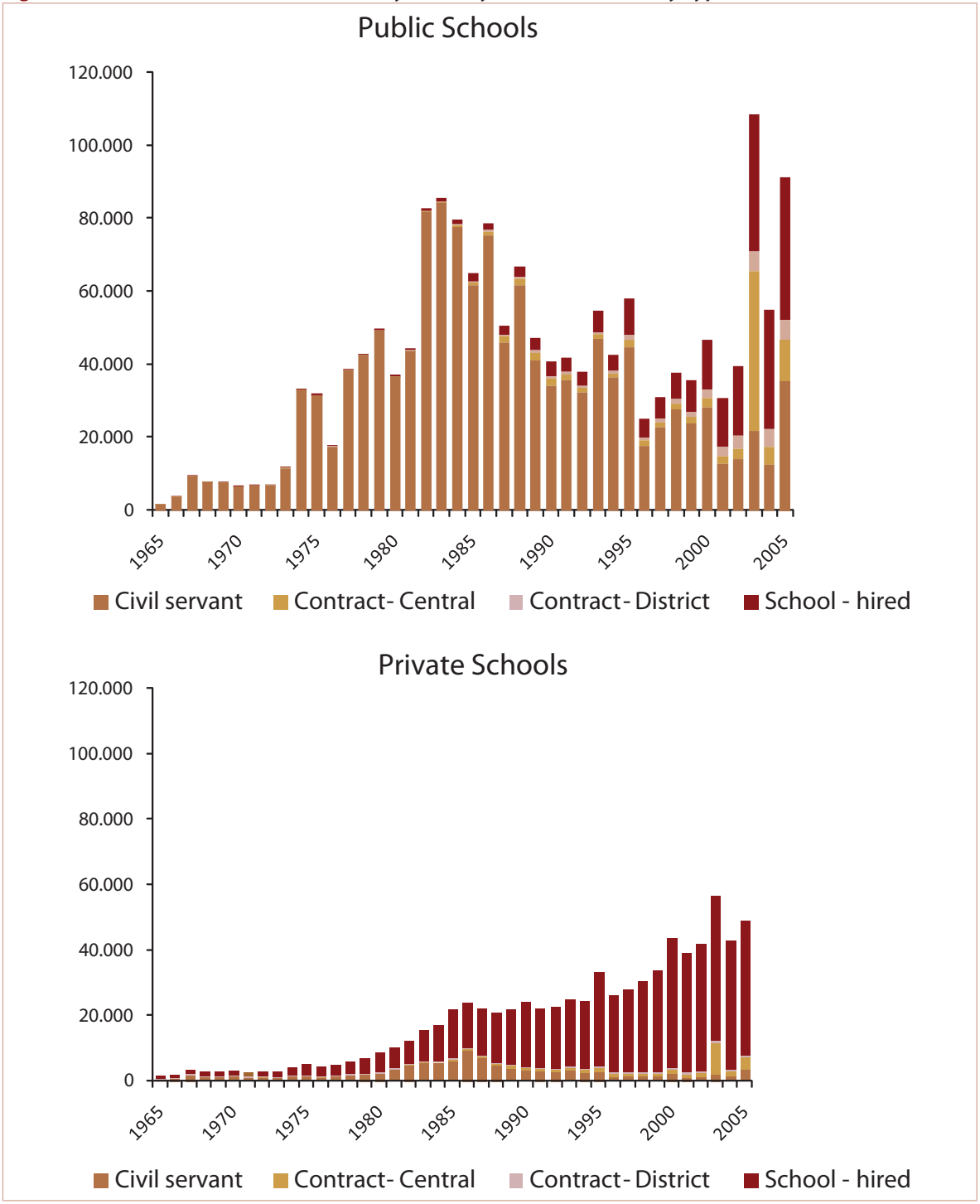
Figure 15. Year that Teachers Currently in the System were Hired



Source: MONE PMPTK Teacher Database (SIMPTK), 2006.
Note: The year that a teacher was hired is a proxy for trends in teacher hiring. However, it is important to keep in mind that this proxy provides only a snapshot of the current teaching workforce. It does not take into account the number of teachers that have quit the profession. For example, a lower than normal number of teachers appears to have been hired in 1996, but it may be that many teachers quit. Also, teachers may change status, particularly teachers that began as school-hired teachers but were later converted to civil servants. This graph cannot capture those changes.

An analysis of the year in which a teacher was hired shows that the spike of 2003–2005 was primarily due to teachers being hired by public schools, even though hiring by private schools also showed a steady increase. It can be seen be in figure 16 that for public school hiring, the number of civil servants has remained fairly steady, but the number of contract and school-hired teachers has increased dramatically. As would be expected, almost all new teachers in private schools are school-hired.

Figure 16. **Year that Teachers Currently in the System were Hired, by Type of School**

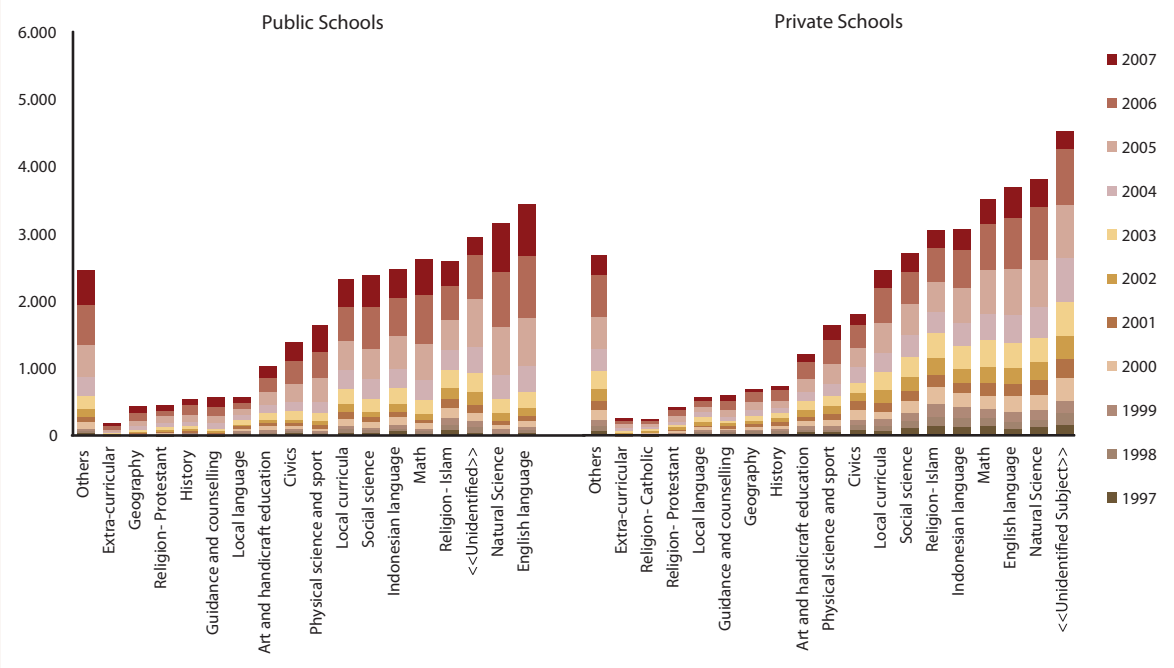


Source: MONE PMPTK Teacher Database (SIMPTK), 2006.
Note: All district and centrally hired contract teachers were due to be converted to civil servant teachers by the end of 2009. Note that the year hired is only a proxy (see note to figure 15).

The motivation of schools for hiring teachers is not always clear and, in some cases, may be suspect. Theoretically, schools are in the ideal position to assess their own needs. They should also be able to identify and hire qualified teacher candidates in an efficient manner. However, it is not always clear that they achieve this goal. As can be seen in figure 17, most teachers seem to be hired in core subjects, such as math, English, natural sciences, and Indonesian. Yet in the majority of hires, there is not a shortage of teachers in these subjects, which raises the question of whether a school is hiring out of need or for other reasons (e.g., favors, providing additional substitute teachers, etc.). For subjects such as local culture, local languages, and religion, however, individual schools are most likely in a much better position to identify and hire teachers, particularly in minority religion areas.

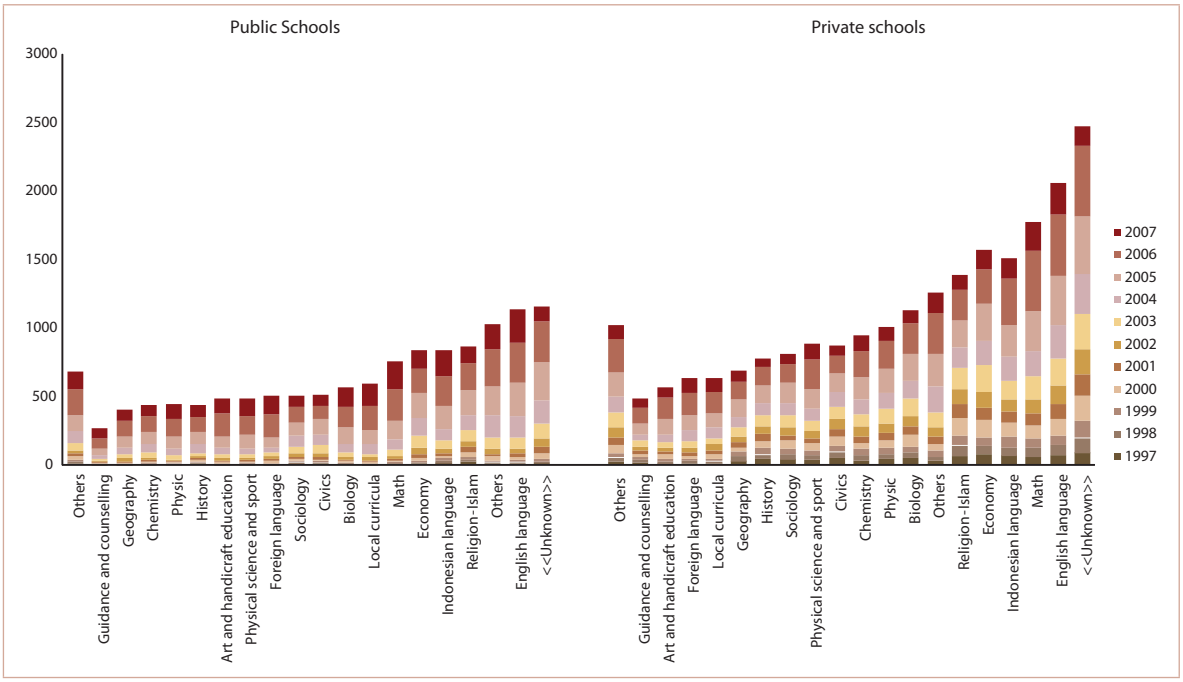
The trend towards school-hired teachers has worrisome implications for educational quality. In recent years, the proportion of civil servant teachers has steadily decreased, while the proportion of school-hired teachers has dramatically increased. Looking at the educational levels of these teachers, a large proportion hold only a high school diploma or lower qualification. The trend towards an increase in the proportion of school-hired teachers also goes against MONE's goal of ensuring that all teachers have a four-year degree and are certified by 2015.

Figure 17. Subjects of School-hired Teachers in Public and Private Junior Secondary Schools, 1997–2007



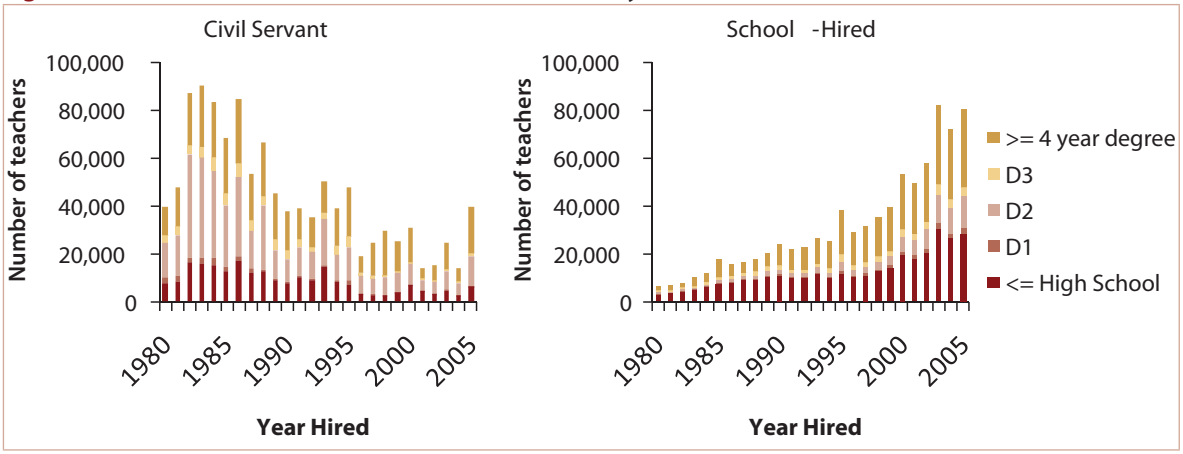
Source: MONE PMPTK Teacher Database (NUPTK), 2007.
Note: This figure documents school-hired teachers only, not civil servant or contract teachers.

Figure 18. **Subjects of School-hired Teachers in Public and Private Senior Secondary Schools, 1997–2007**



Source: MONE PMPTK Teacher Database (NUPTK), 2007.
Note: This figure documents school-hired teachers only, not civil servant or contract teachers.

Figure 19. **Civil Servant vs. School-hired Teachers by Year Hired and Education Level**



Source: MONE PMPTK Teacher Database (SIMPTK), 2006.

Teacher Demand and Supply: Getting the Right People to the Right Places

Photo by: Antara

Key Messages in this Chapter:

Primary and secondary school staffing

- Indonesia's extremely low STRs at the primary school level are largely the result of a staffing formula that mandates a minimum of 9 teachers per primary school, regardless of size.
- At the secondary level, the stipulation that teachers only teach a single subject is intended to ensure quality. However, the country's many small schools make this stipulation inefficient, resulting in many teachers having less than full-time loads.

Current dynamics of supply and demand

- The increase in teacher salaries is the key driver of an increasing supply of teachers.
- Teacher colleges have responded to the increased number of candidates by expanding their programs.
- With increasing enrollment in early childhood programs and junior and senior secondary schools, there is a natural growth in demand for teachers, particularly those with subject-specific skills.
- The MONE policy of reversing the current ratio of general senior secondary enrollment to vocational enrollment (from 30:70 to 70:30) has massive implications for teacher hiring practices.
- BOS grants are used to fund teachers at the school level, with approximately 30 of funds spent on teacher salaries.
- Massive increases in the education budget have reduced the political will to control teacher hiring.

Policy implications

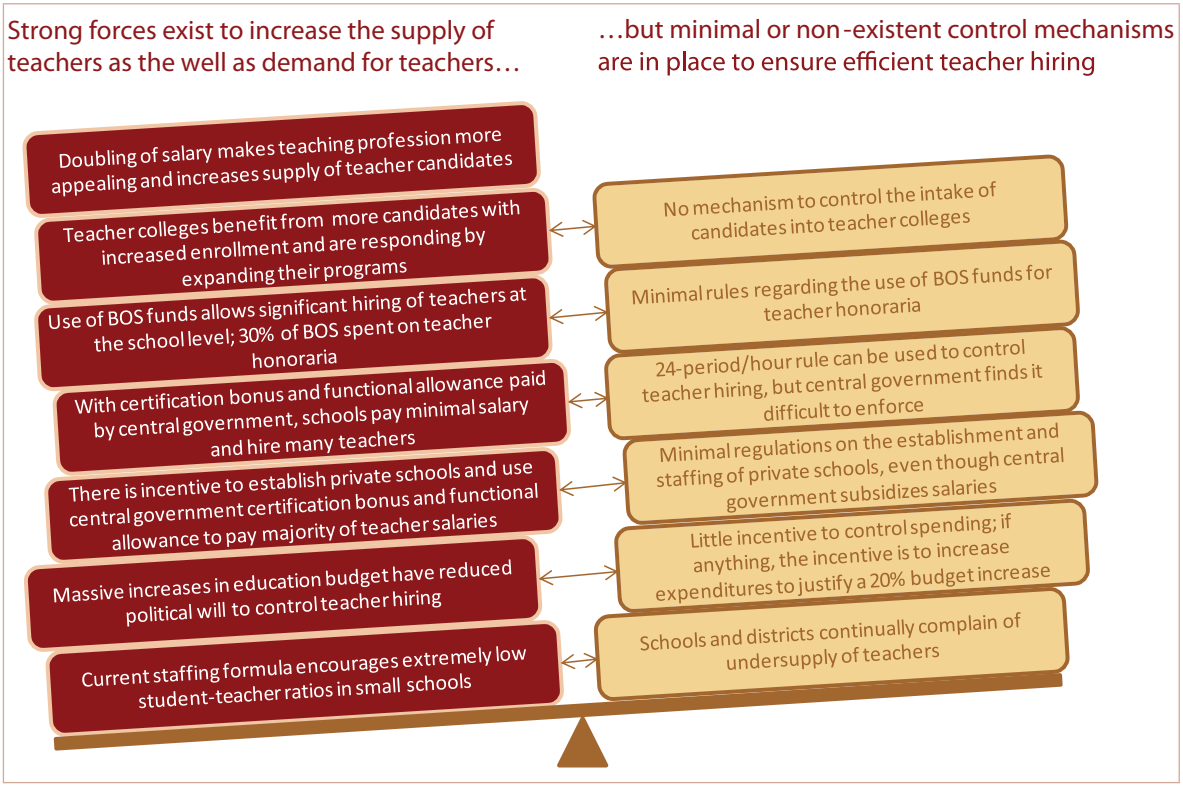
In order to achieve optimal teacher hiring and deployment, it is necessary to consider the following measures:

- adjustment of the school staffing formula to reflect the many small schools in the country
- introduction of multigrade teaching in small primary schools, particularly in difficult-to-staff areas
- development of a system that allows teachers to become accredited in more than one subject and encourages multisubject teachers, particularly in small secondary schools
- enforcement of the 24-period/hour minimum teacher workload
- allocation of DAU funds on the basis of the student or overall population of a district, with districts authorized to both hire and pay teachers
- restricting the use of BOS funds to minimize hiring at the school level
- limiting the number of teachers eligible for the certification allowance so that not all school-hired teachers become automatically eligible for it

Overview

Indonesia already has a significant oversupply of teachers, as seen in its extremely low student-teacher ratios (STRs). Yet STRs in the country will continue to fall. With minimal controls in place to encourage the rational hiring of teachers, there is a large risk that teacher salaries will crowd out other critical education expenditures. If controls are implemented too late in the certification process, there is also a risk of widespread unrest in the teacher community.

Figure 20. **Forces are Increasing Both Demand and Supply, with Few Counteracting Controls in Place**



The teacher reform process creates great opportunities to reshape the composition of the teacher workforce and improve its quality and efficiency. However, if the reform process is not implemented in a rational, efficient manner, there is a great risk of failing to achieve these goals. This chapter first analyzes teacher staffing and distribution in Indonesia. It then explores the various influences driving teacher demand and supply and identifies policy options that may lead to an optimal implementation of teacher reform efforts. Key areas addressed in this chapter include:

1. main determinants of teacher demand and supply, including labor market and institutional factors
2. the impact of new and current policies on these factors
3. system weaknesses and/or potential disconnects
4. ways in which better candidates can be attracted into the teaching profession and deployed effectively
5. ways in which "demand" can be determined and administered under a decentralized management structure

Analysis of Teacher Staffing and Distribution

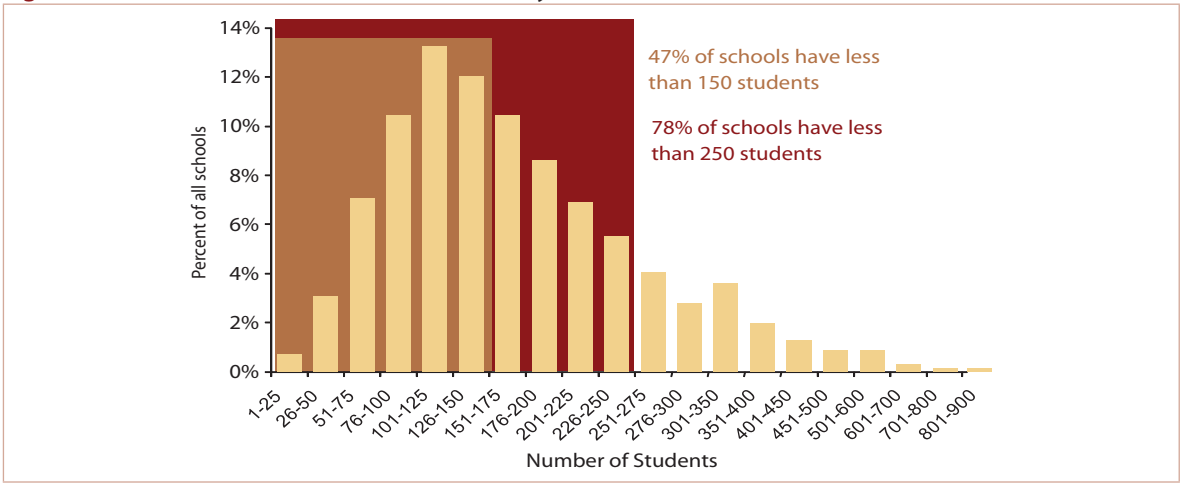
Small schools and staffing at the primary level

Primary schools in Indonesia tend to be very small, which is the greatest cause of teacher staffing inefficiencies. Due to economies of scale, larger schools are easier to staff efficiently than are smaller schools. Although the need to manage small schools efficiently has been recognized, there has not been a focused effort to staff and equip these schools differently. Current policies do not clearly distinguish between small and large schools, a problem that promotes extreme inefficiency in the staffing of the former. Additional policies that recognized the difference in the staffing needs of smaller schools would help increase efficiency. If implemented properly, they could improve educational quality as well.

Indonesia's policy in the Suharto era was to establish primary schools with 240 students, which consisted of six grades (1–6) with 40 students in each grade. If a school expanded beyond this size, a new school was often established. This policy was at times taken to extremes. In some cases where a school had more than 240 students, a new school would be built right next to the existing school. However, it is hard to achieve an exact school size. Even if the established school size was 240, it is likely that demographic changes altered its make-up over time. In fact, the majority of schools are much smaller than the 240-student target. In remote areas, for example, almost all schools have fewer than 100 students.

The majority of Indonesia's primary schools are very small; 78 percent have fewer than 250 students and almost half have fewer than 150 students (see figure 21)**.** Even small schools usually have the traditional model of six grades, with one teacher per class. In a school of 90 students, this means class sizes of 15. With Indonesia's current policy mandating at least 9 teachers for each primary school (one per class plus a religion, sports, and head teacher), the STR becomes only 10:1.

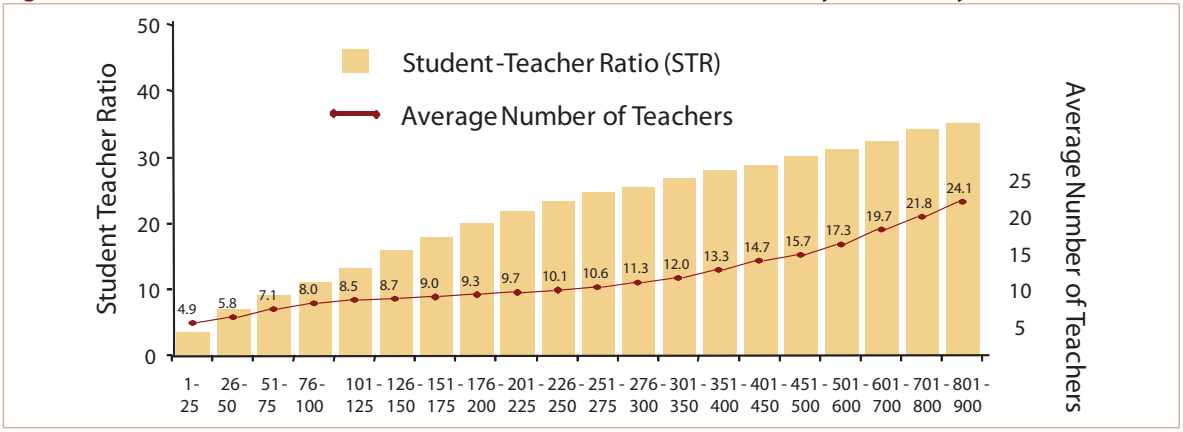
Figure 21. Size of Indonesian Public Primary Schools



Source: MONE PMPTK Teacher Database (SIMPTK), 2006.

STRs for smaller schools are therefore much lower than for larger schools. For example, in schools with 51–75 students, the average number of teachers is 7.1 (see figure 23). This means that the STR in these schools is less than 10:1. Yet if these schools have the traditional six-grade structure, they are considered "understaffed" according to the current staffing policy.

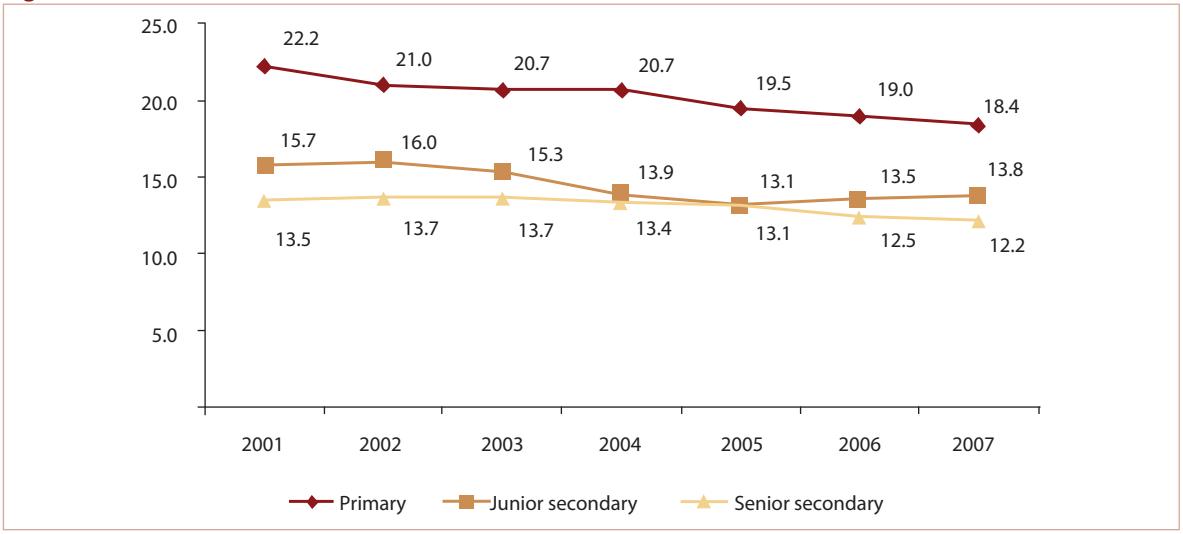
Figure 22. Student -teacher Ratio and Number of Teachers in Primary Schools, by School Size



Source: MONE PMPTK Teacher Database (SIMPTK), 2006.

Since decentralization, moreover, there has been a dramatic *decrease* in STRs, despite the fact that they were already low. This development indicates that the number of teachers is increasing faster than the number of students. As can be seen in figure 23, the STR for primary schools in Indonesia plummeted from 22.2 in 2001 to 18.4 in 2007. At the junior secondary level, it fell from 16.0 to 13.8, and at the senior secondary (general) level, from 13.5 to 12.2.

Figure 23. Student-teacher Ratios in Indonesia, 2001–2007



Source: MONE Balitbang data, 2001–2007.
Note: If the MORA and MONE data for 2007 are combined, overall STRs drop to 17.7 for primary, 12.7 for junior secondary, and 11.0 for senior secondary.

An overall excess of teachers has a major and continuing impact on the cost-effectiveness of the Indonesian educational system. The basic policy option is to set staffing formulae at levels more in keeping with those in similar countries. With teacher salaries currently accounting for some 75 percent of the recurring

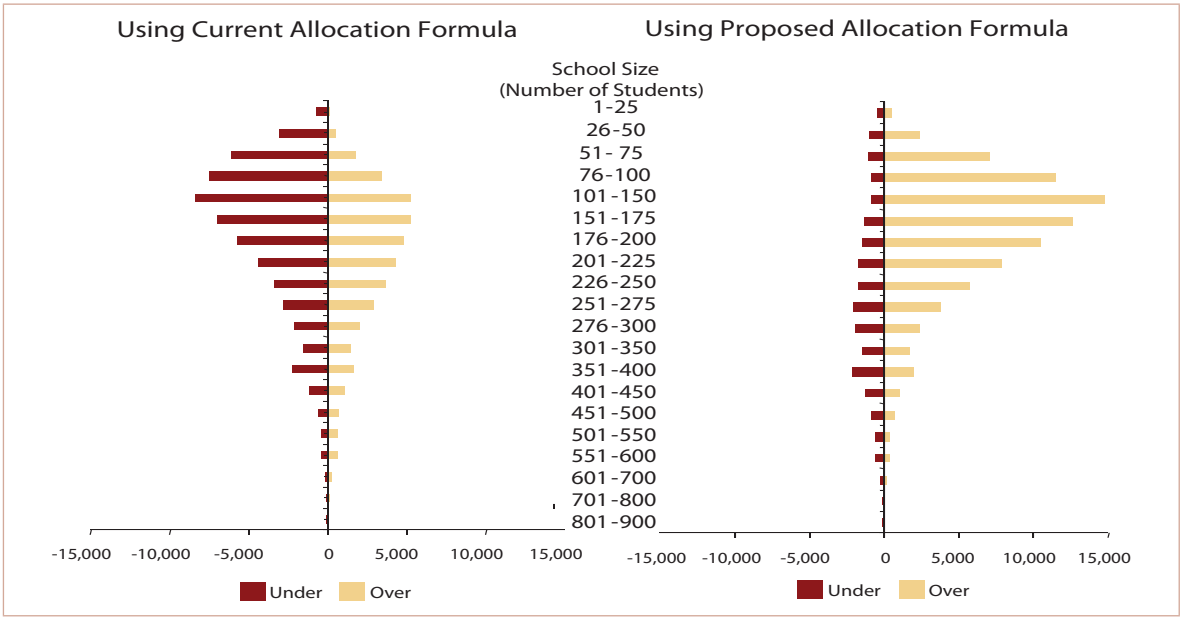
national education budget,[7] more appropriate STRs would free up significant funds that could support quality inputs. Depending on the scale of the reduction, a proportion of these funds could also be used to support the allowances stipulated by the Teacher Law. At the same time, it is essential to recognize that downsizing teaching staff at the primary level will take time. The implementation of an effective transfer policy would also help deploy teachers more equitably.

Specific staffing policy recommendations include:

- deployment of teachers to schools on the basis of the number of students
- staffing regular primary schools on the basis of one teacher for approximately every 30 students, plus a principal, with a minimum of four teachers in every school
- setting a maximum primary class size of 40
- creating multigrade classes when the combined enrollment in any three or more consecutive grades is 25 or less
- creating multigrade classes when the combined enrollment in any two consecutive grades is 35 or less
- weighting the staff allocation for small schools so that no school has fewer than three teachers, plus a principal

The results of changing the current staffing policy from a class-based allocation of one teacher per class plus a sports, religion, and head teacher (i.e., a minimum of 9) to a student-based allocation with a proposed minimum of 4 teachers (3 teachers, plus 1 head teacher) for all schools that have fewer than 90 students, with an additional teacher for each additional 30 students, would dramatically change the national over/undersupply situation.

Figure 24. Comparison of Student-Teacher Ratios by School Size, Using Different Allocation Formulas



Source: MONE PMPTK Teacher Database (SIMPTK), 2006.

7 Estimates based on data from World Bank (2006).

Secondary school staffing challenges

Similar to primary schools, secondary schools in Indonesia tend to be very small, which creates inefficiencies in teacher staffing. In the case of secondary schools, a key constraint is that teachers are expected to teach only in the subject for which they are certified. This stipulation was intended to prevent teachers from teaching subjects for which they were not qualified. In practice, though, the single-subject limitation makes it difficult for teachers to teach a full-time, 24-period/hour workload. This is particularly true for subjects that have a minimal number of hours in the curriculum, such as religion, civics, art, sports, information and communication technology (ICT), and local culture, each of which receive only 2 periods per week (see table 6). This means that a school would need to have 12 class groups (*rombel*) in order to ensure that the relevant subject teacher taught a 24-period/hour workload. Assuming 40 students per class, it would mean at least two class groups would be required for each of grades 7, 8, and 9. This circumstance would only be possible in a school of at least 240 students.

Box 1. Multigrade Teaching Offers Both Quality and Efficiency Benefits

Multigrade teaching has been associated with emergency measures in schools that have a teacher shortage, but international evidence shows that multigrade teaching is in fact extremely effective from a quality perspective. In many cases, student achievement in a multigrade setting even outperforms the traditional grade structure. The best-known example is *Escuela Nueva* in Colombia, where students from poor families in rural areas in multigrade schools actually outperformed their counterparts from wealthier backgrounds who attended traditional single-grade schools in urban areas. A 2000 UNESCO study noted, "Rural schools in Colombia had higher-than-expected outcomes that were above those of the urban schools in that country. This indicates that, even in unfavorable contexts, the application of appropriate and consistent measures ("Escuela Nueva") can significantly improve student outcomes" (Casassus et al., 13). Results from numerous research initiatives and evaluations conducted by national and international organizations since 1980 have confirmed the superior academic, personal, and civic achievements of Escuela Nueva students, in addition to reductions in their dropout and repetition rates.

From the beginning, Escuela Nueva has focused on the school as the place to improve the quality of education. The model stresses an active, participatory methodology that encourages: (a) child-centered, participatory, cooperative, personalized, and self paced learning; (b) a flexible calendar and system of promotion and grading; (c) a relevant curriculum based on life skills and children's daily life; (d) a closer relationship between the school and the community; (e) a new role for the teacher as a facilitator of learning, and (f) improved self esteem and egalitarian and democratic attitudes Flexible promotion eases the boundaries between formal and nonformal education, allowing students to advance from one grade or level to another and complete academic units at their own pace.

Interestingly, some countries such as Australia are now implementing multigrade teaching in large schools, where multigrade teaching is not necessary but is instead deliberately being chosen. Countries such as Nicaragua have adopted a policy to implement multigrade teaching in all schools nationally.

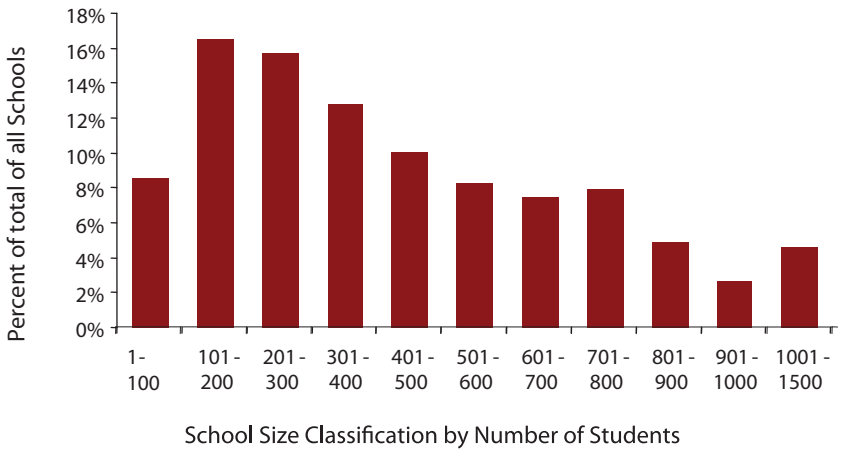
Table 6. Subject Hours Required by Junior Secondary Curriculum

Subject	Required hours
Religion	2
Civics	2
Indonesian language	4
English	4
Math	4
Natural sciences	4
Social science	4
Art	2
Sports	2
ICT	2
Local culture	2
Total	**32**

Source: MONE PMPTK (2006).

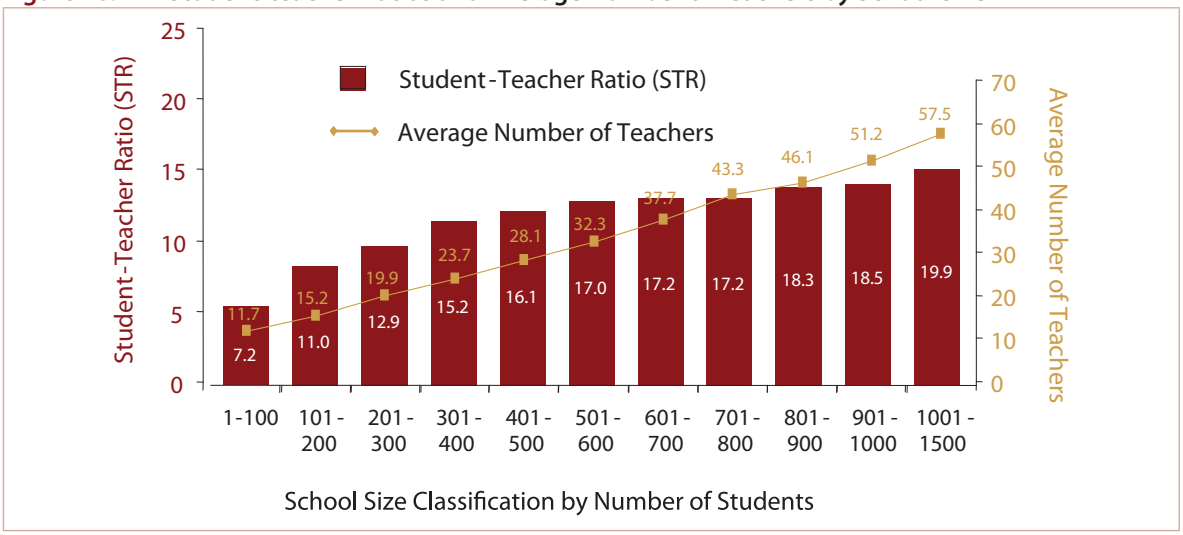
As can be seen in figure 25, **approximately 30 percent of junior secondary schools have fewer than 240 students.** However, if teachers of minor subjects taught more than one subject, they could more easily achieve a full-time workload. If, for example, an art teacher could also teach sports, then he/she would more easily meet the 24-period/hour requirement. The argument could also be made that for certain subjects, such as math at the senior secondary level, in-depth knowledge is required. For certain other subjects, however, less in-depth knowledge may be required. When looking at STRs and the average number of teachers by school size, it can be seen that schools with fewer than 300 students have very low STRs. On average, schools with between 101 and 200 students have an STR of only 11:1.

Figure 25. School Size of Junior Secondary Schools, 2005–2006



Source: MONE PMPTK Teacher Database (SIMPTK) 2006.

Figure 26. **Student-teacher Ratios and Average Number of Teachers by School Size**



Source: MONE PMPTK Teacher Database (SIMPTK) 2006.

Even for larger schools, it is unlikely that there is an exact number of classes to provide the correct number of hours for each teacher. For example, if a school has 16 class groups, then a single art teacher may not be able to handle all classes and a new art teacher would need to be hired. This would mean, however, that each teacher would only have 8 classes to cover and their teaching loads would fall below the required minimum. Thus, an inflexible system in which teachers teach only a single subject creates inefficiencies in staffing for both small and large schools.

The staffing challenge is greater in senior secondary schools, where some subjects, such as geography and history, are taught only one hour per week. Most other subjects are taught for only two hours per week. A history teacher, for example, would need to be in a school with 480 students in order to teach 12 separate classes and thus meet the required 24 period/hours. In addition to the challenge of the required number of classes, it would also be extremely difficult logistically for a teacher to manage 12 (or even 24) separate classes.

Table 7. Subject Hours Required by Senior Secondary Curriculum

Subject	General	Natural science	Social science	Language
Civics	2	2	2	2
Indonesian language	4	4	4	5
English	4	4	4	5
Math	4	4	4	3
Physics	2	4	0	0
Biology	2	4	0	0
Chemistry	2	4	0	0
History	1	1	3	2
Geography	1	0	3	0
Economics	2	0	4	0
Sociology	2	0	3	0
Anthropology	0	0	0	2
Indonesian culture	0	0	0	4
Foreign language	0	0	0	4
Cultural sociology	2	2	2	2
Sports	2	2	2	2
ICT	2	2	2	2
Skills lesson	2	2	2	2
Local curricula	2	2	2	2
Total periods	**36**	**37**	**37**	**37**

Source: MONE PMPTK formula used to perform teacher forecasting, 2008.

While a policy requiring a single subject may be good in theory, in practice schools currently have no choice but to have teachers teach multiple subjects. If a school is unable to hire a geography teacher, then either the subject will not be taught or an existing teacher will teach the class. If a teacher can only be accredited in one subject, then the teacher may simply teach it without having gone through an official certification process that demonstrates knowledge of the subject. If a policy existed to enable a teacher to become accredited in more than one subject, then teachers willing to demonstrate expertise in a second subject could simply undergo a process, such as an examination, to demonstrate mastery of the subject. If a teacher did not yet have mastery of the subject, then he/she could receive the support needed to gain such mastery. This support could involve undertaking coursework and other training. Development of a policy that allowed teachers to teach more than one subject would also encourage improved monitoring and quality control.

Analysis of staffing and the 24-period/hour rule

Among primary and secondary teachers, 46 percent already meet the 24-period minimum, while more than half fall below it. In primary schools, 70 percent of teachers meet the minimum, and another 18 percent have between 13 and 23 periods. The workloads of junior and senior secondary teachers are significantly lower than those of primary school teachers: only 19 percent of junior secondary and 18 percent of senior secondary teachers meet the minimum requirement.

Although the 24-period/hour requirement is critical for controlling teacher hiring, there are both practical and political challenges to its implementation. While the number of PNS (civil servant) teachers can be controlled centrally, school-hired teachers in public schools (GTT) teachers contracted by the districts (*Honor Daerah*) and teachers in private schools (GTY) are not under the direct control of either MONE or MORA. The 24-period/hour requirement thus only indirectly prevents schools from hiring too many teachers. If a school

that is adequately staffed with teachers who are teaching 24 periods a week then hires additional teachers, some teachers would fall below the 24-period/hour threshold, making them ineligible for the professional allowance. This control mechanism is important for all schools, but particularly for private schools, where MONE and MORA have little control over the number of teachers hired.

Among the enforcement challenges is the additional requirement that a school principal provide a letter stating that a newly hired teacher has a workload of at least 24 periods. While this is certainly a useful method, it could be abused. MONE will also need to monitor workloads by analyzing school data. With accurate, up-to-date data from each school, the total number of teaching hours can be determined by the number of classes in the school. The total number of hours assigned to teachers in that school can then be calculated to determine whether the number of teacher hours exceeds the total number of school hours. The teacher census database kept by PMPTK permits such calculations, but there is a year's lag in the collection of data and its entry into the system. However, there are efforts to put the system online, which would enable schools to update their records directly.

Because many teachers do not currently meet the 24-period/hour requirement, considerable pressure could be placed on MONE to ease the policy. Under current central government guidelines, "team teaching" is allowed, which allows two (or more) teachers to work in the same class. Teachers can also gain additional hours through extracurricular activities (e.g., coaching a school soccer team outside of school hours). While exceptions are understandable, particularly during an interim period, there is a danger that the policy will not achieve its intended goals if exceptions become systemic. In the case of team teaching, for example, teachers who are currently under the minimum 24-period/hour requirement could simply be assigned to existing classes. There is also the risk that "team teaching" may in fact become "turn teaching," in which teachers simply take turns teaching a class, so that any potential benefits of increased face time would be lost.

Teacher Supply

The rise in the standard teacher salary and the additional allowances have made the teaching profession much more attractive. Teacher colleges and universities are experiencing considerably increased enrollment in pre-service education and are expanding their programs to accommodate this demand. The candidates entering teacher training programs are also of increasingly higher quality. Many professionals from other occupations are being enticed to change career tracks and enter the teaching profession. These key driving forces are leading to a greater teacher supply.

Salary as a factor in choosing teaching as a profession

In the past, teaching was a less attractive occupation for high-quality candidates. However, the effect of the new Teacher Law is attracting higher-quality candidates to the profession. Labor force survey data indicates that the relative wage rate of teachers and that of the alternative occupations significantly influence the decision of college-educated workers to become a teacher. The large-scale pay increase promised to teachers with a college education by the 2005 Teacher Law will induce college-educated workers to become teachers. It is estimated that the wage rate established by that law will increase the share of teachers from approximately 16 to approximately 30 percent of the entire college-educated labor force. The new government-set wage rate can sustain a pupil-teacher ratio of 24–25 pupils per teacher with a college education, but will require an increase of the teacher salary bill of more than 30 percent.

Before the reforms, the salary levels of teachers and those of other professionals with equivalent education differed in direct proportion to their level of qualification. An analysis of Indonesia's 2004 National Labor Force Survey (SAKERNAS) reveals that the monthly earnings of primary school teachers with

qualifications below the diploma level (approximately 40 percent of teachers) were 16 percent higher than the earnings of other workers with similar qualifications. This differential decreased to six percent for teachers with a first- or second-level diploma (approximately 32 percent of teachers). There was a negative differential for primary teachers with higher education. In particular, teachers with a third-level diploma (approximately 8 percent) or a university degree (approximately 19 percent) earned 21 percent and 35 percent less, respectively, than other workers with equivalent levels of education.

Teachers with relatively low levels of education have been comparatively overpaid, while those with higher levels of education have been relatively underpaid. This situation created a disincentive for underqualified teachers to attain additional education, because their wage relative to that of others with similar qualifications would decrease.

Table 8. Monthly and Hourly Earnings of Primary and Non-primary Teachers Relative to Civil Servants and Other Workers, 2004

Occupation	Monthly earnings		Hourly earnings	
	Relative to other workers	Relative to civil servants (%)	Relative to other workers	Relative to civil servants
Teachers	21% less	26% less		19% less
Teachers primary	6% less	18% less	46.9% more	13% less
Teachers non- primary	33% less	32% less	5% more	23% less
Civil servants (excl. teachers)	24% greater	N/A	46.7% more	N/A

Source: World Bank staff calculations based on SAKERNAS, 2004.
Note: N/A – not available.

Teachers' hourly earnings compare favorably to those of other workers because teachers tend to work fewer hours. According to data from the SAKERNAS 2004 survey, teachers work approximately 34 hours per week. Other paid workers with similar levels of education work 43–46 hours per week. Moreover, teachers have more holidays per year than other paid workers. When these factors are taken into consideration, teachers' hourly earnings are relatively high.

However, their hourly earnings are approximately 20 percent less on average than those of other civil servants. This finding implies that civil servants are either working less than teachers or are paid more per hour. Compared to civil servant colleagues with similar levels of education, primary school teachers earn approximately 13 percent less and non-primary teachers, 23 percent less, per hour.

There are also significant regional differences in teachers' earnings. For example, teachers in East Java earn 23 percent less per month than teachers in West Java. However, other workers in East Java earn 16.5 percent less than workers in West Java. Other locations where teachers earn substantially less than those in West Java are the large area of Central Java (14.7 percent less), Nusa Tenggara Barat (14.1 percent less), and Banten (10.9 percent less). Banten, Riau, and Bangka Belitung are provinces in which teachers earn substantially less than other workers. The same provinces also have large differentials in hourly earnings.

Given the recent reforms to the educational system, it is important to specifically examine the occupational choices of working cohorts with a college education. The National Labor Force Survey for the years 2001–2008 provides a sample of 40,019 workers with a college education. Overall, only around 3 percent of respondents 20 years old and above were able to attain this level of education. The proportion increased over that period, but at a very slow pace (see table 9). The data also show that teaching is a popular job choice for college graduates. Between 2001 and 2008, around one-fifth to one-quarter of college graduates chose the teaching profession.

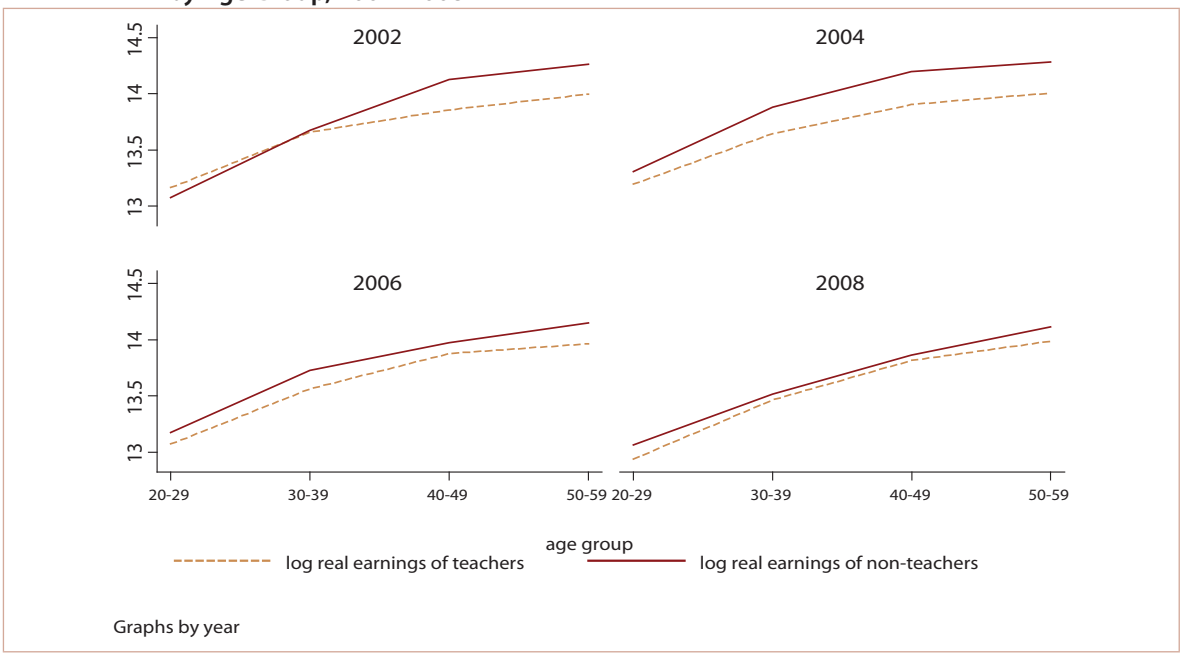
Table 9. **Composition of Workers with a College Education, 2001–2008**

Year	Non-teachers	Teachers	Total	% of college graduates who are teachers	% of college-educated population aged 20 and above
2001	2,414	333	2,747	12%	3.0%
2002	3,729	687	4,416	16%	2.7%
2003	4,750	846	5,596	15%	3.1%
2004	4,979	982	5,961	16%	3.3%
2005	3,411	911	4,322	21%	2.8%
2006	4,363	972	5,335	18%	3.2%
2007	4,683	954	5,637	17%	3.3%
2008	5,160	845	6,005	14%	3.6%
Total	33,489	6,530	40,019	16%	3.1%

Source: Central Bureau of Statistics (BPS), SAKERNAS, 2001–2008.

Teachers' earnings have been below those of other workers for the past few years. However, the real earnings gap is narrowing. Figure 27 shows relative earnings for teacher and non-teacher college graduates by age group. Of note, teachers' real earnings have increased faster than those of non-teachers in recent years. A closer look reveals that teachers' real earnings have been mostly constant over the years, while those of non-teachers have been eroded by inflation over time.

Figure 27. **Log Real Earnings of Teachers and Non-teachers with a College Education in Indonesia, by Age Group, 2002–2008**



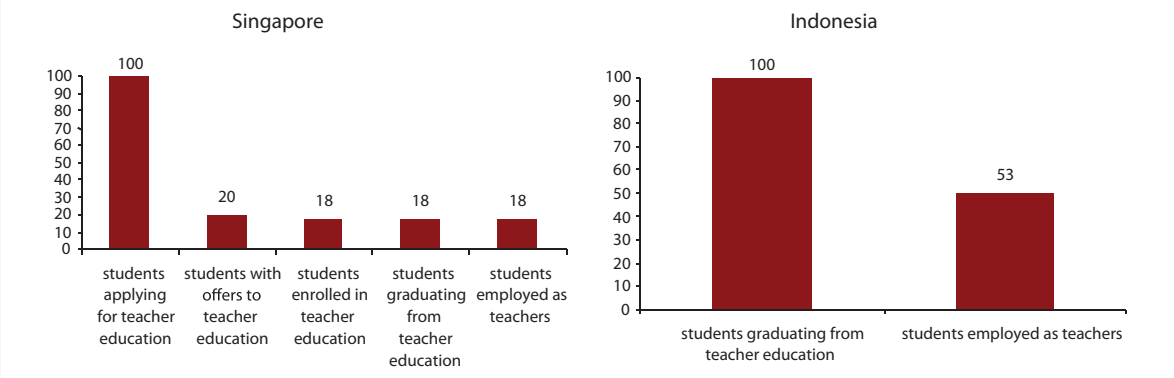
Source: Central Bureau of Statistics (BPS), SAKERNAS, 2002, 2004, 2006, 2008.

Producing teacher candidates: Teacher colleges and universities

The teacher colleges do not have strict entry requirements. Apart from enforcement of minimum requirements, there is little attempt to control the number of students entering their programs. Allowing the laws of supply and demand to drive the number of candidates entering teacher colleges has many advantages. In the long term, market forces should ensure that the correct number of teachers required by the system is produced. In Indonesia's current situation, however, more candidates are entering the system than are required. In recent years, there has been an attempt to forecast teacher requirements so that colleges can identify which types of teachers are required and adjust their programs accordingly. This information is now provided by PMPTK to the Directorate General of Higher Education (DGHE) and universities in the country. While the data does not dictate candidate selection or curricula, it may in the future assist universities to produce the teachers most needed.

An effective selection process can assist teacher colleges in identifying higher-caliber candidates and reducing inefficiencies by discouraging students who are not able to enter the teaching profession. International evidence shows that top-performing countries select appropriate individuals for the teaching profession before they start their training. Their systems limit places in training programs to this group only. By comparison, Indonesia and many other countries leave the selection process until after prospective teachers have graduated from teacher training programs. Teachers are then selected for employment from this larger group. This lack of focus is costly in terms of resources. Figure 28 illustrates the two models, comparing the selection process in Singapore with that in Indonesia.

Figure 28. Comparison of Teacher Selection Processes in Singapore and Indonesia



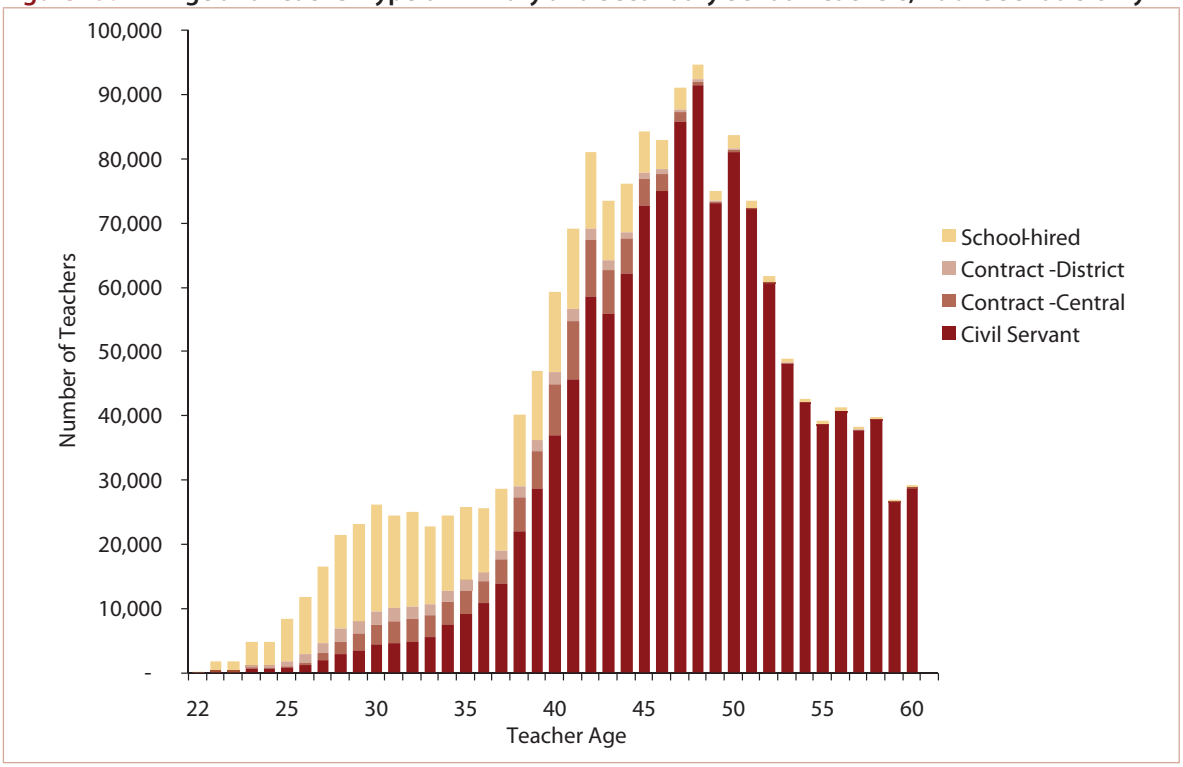
Source: Singapore data from Barber and Mourshed (2007); Indonesia data based on World Bank staff calculations.

Age and the retirement wave

Indonesia is fast approaching a period where a large number of teachers will be retiring, particularly from primary schools, which presents a unique opportunity to improve efficiency in the educational system, both in terms of distribution and supply. A breakdown of the teaching force by age reveals that a large proportion of teachers falls into the 40–50-year-old age group. Given a retirement age of 60, this age structure has major implications for the reform process. As teachers leave the system, posts in already oversupplied areas can be eliminated and new teachers can be posted in areas with teacher shortages. The bulk of the current teacher oversupply is in primary schools, so the retirement wave creates an opportunity to move to multigrade teaching in smaller primary schools. In order for these goals to be accomplished, however, a strategy must be developed, policies must be put in place to direct the proper outcomes, and key decision makers must adhere closely to the strategy.

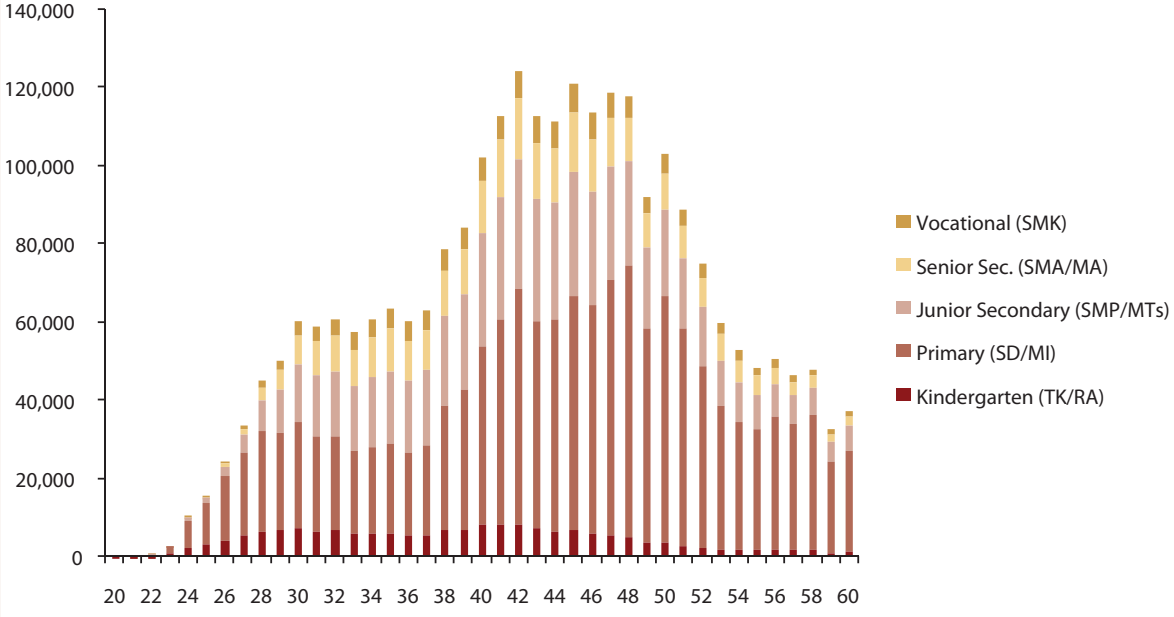
Among public school teachers, almost all teachers over age 45 are civil servants. The majority of teachers under age 35 are school-hired teachers. The fact that there are relatively few civil servant (PNS) teachers under 35 is in part due to the fact that fewer PNS teachers have been hired in recent years. Often, PNS teachers who have been hired had already been in the system for many years, either as contract or school-hired teachers, and are therefore older. The age distribution also reflects the decentralization of the education system and the greater role that schools now play in the hiring of teachers.

Figure 29. Age and Teacher Type of Primary and Secondary School Teachers, Public Schools Only



Source: MONE PMPTK Teacher Database (SIMPTK), 2006.
Notes: Because the data is from 2006, teacher ages were increased by two years to reflect 2008 estimates. *Centrally hired contract teachers are currently being converted to civil servant teachers, a process that is expected to be completed by 2009.*

Figure 30. **Teacher Age and School Level, Public and Private Schools**



Source: MONE PMPTK Teacher Database (SIMPTK), 2006.
Note: Because the data is from 2006, teacher ages were increased by two years to reflect 2008 estimates.

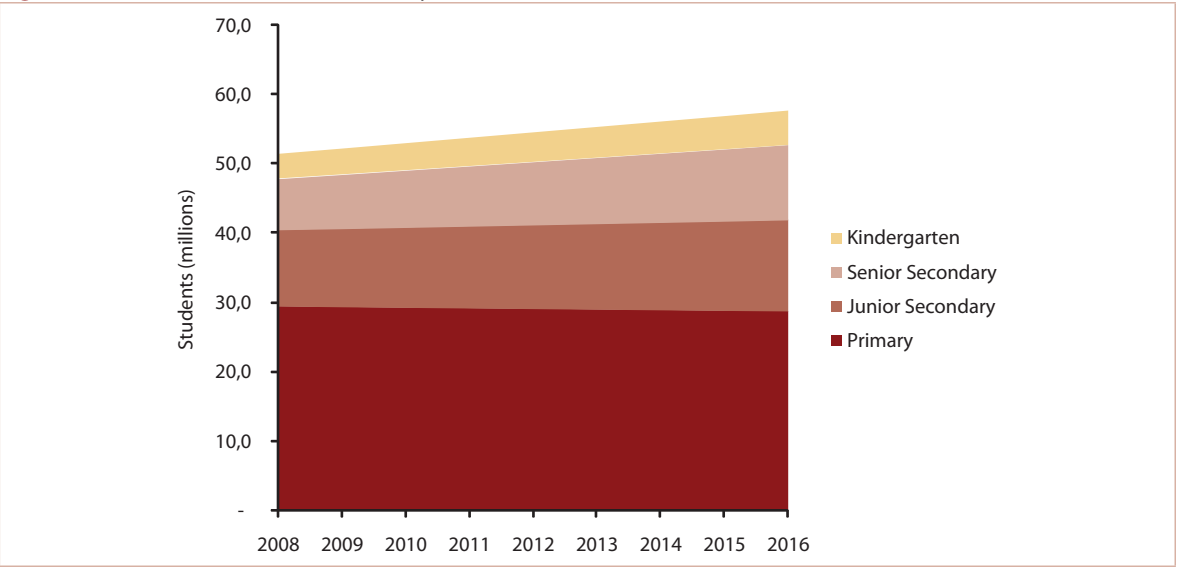
Teacher Demand

Three major systemic failures of the current teacher hiring system are exacerbating the teacher oversupply problem:

1. District governments hire civil servant teachers, but the central government pays for them.
2. Schools are able to hire teachers, often using BOS funds. When certified, these teachers qualify for a certification allowance from the central government.
3. Private school teachers are eligible for teacher certification and associated benefits paid by the central government.

Increased demand for teachers is partly driven by increased enrollment in secondary school. Figure 31 shows the estimated number of students by level of education using Indonesia's targets for both the Millennium Development Goals (MDGs) and Education for All (EFA) objectives. Enrollment in primary school will remain flat due to a gross enrollment rate that currently exceeds 110 percent; in junior secondary school there will be a slight increase, and in senior secondary and kindergarten, there will be significant growth.

Figure 31. Forecast of Students by Level of Education, 2008–2016



Source: World Bank estimates based on population projections and target enrollment rates.

The inefficiency reflected in Indonesia's extremely low STRs will become more costly as more teachers become certified and begin receiving the professional allowance. The requirement that teachers work a minimum of 24 period/hours should reduce this inefficiency. The three scenarios presented in table 10 below, and presented graphically in figure 32, are based on whether there is no efficiency gain (STRs remain the same), a slight efficiency gain (STRs increase slightly), or a big efficiency gain (STRs approach the world average of 31:1 in primary school and 24:1 in secondary school) over the coming years.

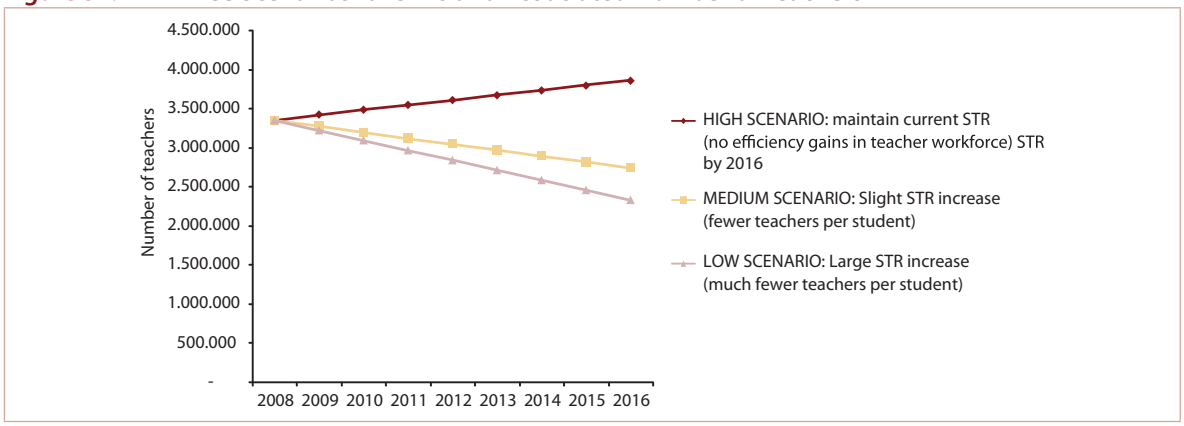
Table 10. Future STRs: Three Scenarios

School level	Current STR	Slight efficiency gain	Large efficiency gain	World average
Primary	17.7	24.0	28.0	31.0
Junior secondary	12.7	22.0	25.0	24.0
Senior secondary	11.0	16.0	20.0	24.0

Source: World average from Edstats online education database of the World Bank 2007; current STRs from MONE PMPTK; other data are World Bank estimates.

Based on the scenarios outlined above, the total number of teachers in the system by 2014 could range from 2.9 million to 3.9 million.

Figure 32. **Three Scenarios for STRs and Associated Number of Teachers**



Source: World Bank calculations.

Demand driven by the changing education system

The differing subject specialties of secondary teachers must be taken into account when examining demand. The expansion of secondary education adds complexity to the hiring process because of the multiple subject areas required by the secondary curriculum. For example, with the advent of information and communication technology (ICT), there is now a large need for teachers in this area in which relatively few teachers are qualified. As can be seen in table 11, MONE's calculation of the need for teachers shows an extreme oversupply in subjects such as civics, sciences, and math, but extreme shortages in subjects such ad computer science and guidance counseling. The shortage of teachers qualified to teach computer skills highlights the difficulty in meeting demand for new subject areas.

Table 11. **MONE Calculations of Civil Service Teacher Requirements in Junior Secondary School, by Subject**

Junior secondary subjects	Existing number of teachers	Teachers needed	Over-/ Undersupply (number)	Over-/ Undersupply (%)
Civics	21,070	14,965	6,105	41%
Religion	20,392	14,965	5,427	36%
Social science	40,399	29,939	10,460	35%
Natural science	38,421	29,939	8,482	28%
Mathematics	37,662	29,939	7,723	26%
Indonesian language	33,859	29,939	3,920	13%
English	28,956	29,939	-983	-3%
Local culture	13,696	14,965	-1,269	-8%
General culture	11,081	14,965	-3,884	-26%
Physical education	10,938	14,965	-4,027	-27%
Guidance counseling	16,686	35,411	-18,725	-53%
Computers	2,983	14,965	-11,982	-80%

Source: PMPTK estimates, 2009.
Note: Approximately 30 percent of junior secondary teachers are not included in this calculation because they are not civil service teachers or they teach other subjects.

The policy of MONE to reverse the current 70:30 ratio of general senior secondary to vocational enrollees has massive implications for teacher hiring. It is not easy to recruit new teachers with specific vocational knowledge. According to MONE, there is already a shortage of 24,000 teachers in vocational schools.[8] These schools are relying on a variety of solutions to overcome the shortage. One solution is to use nonpermanent teachers for general subjects, such as mathematics, English, and science. Another is to collaborate with related industries.

Some experts say that the increase in the number of teachers in vocational schools needs to take place gradually and in stages. Vocational education typically focuses on specialized skills, the demand for which will change as Indonesia's labor market changes. This creates the challenge of maintaining a flexible workforce that is able to adjust to the market's constantly changing needs.

Demand driven by staffing norms

Staffing allocation formulas play a critical role in defining the demand for teachers (see the section entitled, "Analysis of Teacher Staffing and Distribution" earlier in this chapter.) If these norms are not established in a manner that assigns teachers on the basis of rational, realistic need, it will create inefficiency or artificial demand. As explored earlier, the staffing formula for primary schools mandates a minimum of nine teachers per school. At the secondary level, the rule that teachers can only be certified to teach a single subject prevents many teachers from having full workloads. Allowing teachers to become accredited to teach in more than one subject would help reduce this artificial demand.

Demand driven by the perverse incentive of DAU funds

Districts have a perverse incentive to hire as many civil servants as possible because the central government pays their salaries. A reformulation of the DAU funds could help eliminate this poor practice. However, such change must be implemented carefully in order to ensure that there are minimal negative side effects.

The responsibility for hiring teachers has been separated from the responsibility for paying them. As explained earlier in this paper, BKN and MENPAN determine the annual allocation of civil servants that the districts may hire. However, the districts determine the number of teachers that they require. In the case of district civil servants, their salary is passed through the DAU. Because the costs of such employees are not borne by the districts, almost every district inflates the numbers of new civil servants that it requires. The BKN then has to try to determine whether the number submitted by the district is accurate or needs to be adjusted, often resorting to population data and other factors to determine how many civil servants should be allocated to each district. It is not conducive to good management for different agencies to resort to these opaque methods.

There are benefits to having the central government control civil servant hiring. If it had this control, the central government would be able to enforce standards, such as ensuring that all teachers had a four-year degree (S1 or D4). However, attempts to control the hiring process could create undue rigidity in the system. Districts complain that after submitting a request to the central government, they have to wait three or more years to have a vacant post filled. While it doesn't make sense for the central government to make decisions about how to fill specific posts, it should be involved in overall teacher allocation.

Effect of BOS grants on the demand for teachers

As noted previously, approximately 30 percent of BOS funds are spent by schools on teachers. While

8 "Jumlah Guru Jadi Kendala," ***Kompas*** newspaper, June 24, 2009, 12.

some of this amount is spent on already hired teachers, much goes to hiring additional teachers. In addition, there is a market incentive to establish private schools and hire as many teachers as possible for them.

It is important to evaluate the possible outcomes of the new allowances, professional and functional, that are paid to all certified teachers in private and public schools. For civil servant teachers, the professional allowance is equivalent to a teacher's base salary. For non-civil servant teachers, the amount of the allowance is determined by performing the equivalent of a civil servant assessment of a teacher, based on characteristics such as age, years of experience, number of publications, and other factors. The teacher is then given an equivalent civil servant rank, with a professional allowance equal to the base salary of that rank. Shrewd principals of private schools understand that as a result of certification and a civil service assessment, teachers may receive close to twice their previous salaries in allowances, giving the principals an incentive to reduce the teacher salaries paid by the school. In an extreme case, a school could pay a teacher no salary and have the teacher receive only the professional and functional allowances, which would still amount to twice what the teacher previously earned.

Alternative possible outcomes of teacher hiring in a typical private school are shown in table 12. The ***current situation*** is one in which the school hires teachers and pays their salaries, with no central government allowances available to the teachers.

Scenario 1 is the intended outcome of the professional and functional allowances, in which private schools continue to pay teacher salaries for existing teachers and no additional teachers are hired in schools that are already adequately staffed. Scenarios 2 through 4 show the unintended outcomes that could arise, particularly if government policy does not require teachers to work full-time.

In ***scenario 2,*** the school simply reduces the amount it pays teachers and instead relies on the allowances to cover the majority of teacher income. If teachers were willing to work for IDR 14 million before the reform, and now receive IDR 25 million in allowances, it is likely that schools could reduce their salaries and the teachers would still be willing to work. In this case the central government would pay the same amount, but money would be reallocated from teachers to the school.

In ***scenario 3,*** an additional step is taken by the school. Instead of simply reducing salaries, the school uses the additional available funds to hire more teachers. If salaries are cut in half, then the school could hire double the number of teachers without paying more teacher salaries than it currently does. The central government, however, would have to pay allowances for each additional teacher hired (assuming that all teachers are certified).

Scenario 4 is the extreme case in which private schools simply do not pay salaries and rely completely on allowances to compensate their teachers. This scenario requires that teachers be willing to work for IDR 25 million, but since many teachers were willing to work for less prior to the reforms, it is likely that there would be a pool of teachers willing to take an unpaid position if it would allow them to qualify for the central government teacher allowances. In theory, then, teachers become a free good to schools and they will hire as many as possible. In the example shown in table 12, an additional 20 teachers are hired and the average hours worked per teacher drops to only 7.

If the 24-period/hour minimum policy is enforced, the outcome will either be scenario 1 (intended outcome) or 2 (the school reduces the amount that it pays teachers). Scenarios 3 and 4 would not be possible if the policy is enforced, because a school with an already adequate number of teachers would not be able to hire additional teachers without taking away hours from its current teachers. However, this outcome requires that MONE monitor schools and identify cases where the total amount of teacher hours is greater than the possible number of hours for a given school. Using game theory logic, schools would see the allowances as subsidies of teacher salaries and lower teacher salaries, either immediately or over time. While this is not the intended outcome of the allowances, it could be argued that if funding is redistributed to other school inputs, such as books or other resources, it could result in positive developments.

Table 12. Scenarios for Teacher Hiring by Private Schools Resulting From Professional and Functional Allowances

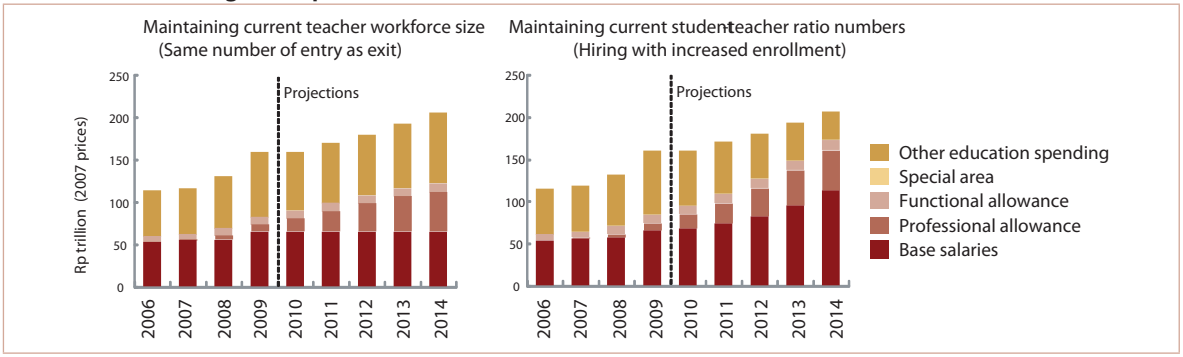
Scenario	School pays teacher salary; allowances not yet paid	Intended outcome: School continues to pay same salary and teachers receive allowances from central government	School reduces teacher salaries by half and teachers receive allowances from central government	School reduces salary by half and hires 9 more teachers; all new and existing teachers receive central gov't allowances	School eliminates salaries completely and hires 20 more teachers; all new and existing teachers receive central gov't allowances
(a) Number of teachers	9	9	9	18	29
(b) Average annual salary paid by school	14,000,000	14,000,000	7,000,000	7,000,000	N/A
(c) Total cost to school (a*b)	126,000,000	126,000,000	63,000,000	126,000,000	N/A
(d) Average allowance from central government	N/A	25,000,000	25,000,000	25,000,000	25,000,000
(e) Total cost to central gov't (a*d)	N/A	225,000,000	225,000,000	450,000,000	725,000,000
(f) Total salary & allowance (c+e)	126,000,000	351,000,000	288,000,000	576,000,000	725,000,000
(g) Average teacher income (f/a)	14,000,000	39,000,000	32,000,000	32,000,000	25,000,000
(h) Total class hours in school (6 class groups*32)	192	192	192	192	192
(i) Average working hours of class teachers (h/i)	24	24	24	11	7
Results by stakeholder					
School	Current	(no change) School continues to pay existing salary amount	(++) School saves money by paying only one-half of previous salaries	(++) School spends same amount of money as before, but doubles the number of teachers	(+++) School doesn't spend any money on teacher salaries
Teachers	Current	(+++) Teachers receive large increase in salary	(++) Teachers receive more than double their previous income	(++) Teachers still receive more than double their previous income, but 18% less than expected (i.e., less than scenario 1)	(+) Teachers' salaries still increase by 180% and they only work 7 hours/ week
Central government	Current	(neutral—expected outcome) Central government pays allowances to current teachers in system	(neutral) Central government pays current teachers via allowances	(- -) Central government must pay twice as many teachers in the system	(- - -) Central government must pay massive additional amounts due to the hiring of 20 additional teachers

Note: Stakeholder ratings range from the most positive (+++) to the most negative (- - -). In the scenarios above, some stakeholders may benefit to the detriment of others. Since the school is the controlling stakeholder in terms of hiring teachers, game theory suggests that if left uncontrolled, the scenario chosen will that which most benefits the school.

Education budget increases have reduced the political will to control teacher hiring in the short term

Many stakeholders within the government, including MONE, the National Development Planning Agency (Bappenas), and the MOF, understand the long-term cost implications of certification and the new allowances. Since the teacher reform began in 2006, these items have increased spending on teacher salaries by an estimated IDR 47 trillion (at constant 2007 prices), although the burden of this increase has been cushioned by a substantial increase in the overall education budget during this period. Even assuming no change in teacher numbers, spending on these professional incentives will continue to gradually increase over the medium term (i.e., through 2014), as more teachers become certified. Spending on functional and special-area allowances will also continue to increase, albeit modestly, since these incentives have largely already been implemented. Additional spending on the three allowances could amount to an estimated IDR 172 trillion over the next five years, equivalent to around 19 percent of the total education budget in this period.

Figure 33. Teacher Salaries as a Proportion of Budget with No Increase in the Teacher Workforce vs. Hiring in Proportion to Enrollment Increases



Source: World Bank estimates.

If the current workforce size is maintained, so that the number of teachers entering the system equals the number exiting, then the salary increase will be absorbed by the projected budget increase. In this scenario, the projected increase in spending on salaries over the next five years would see total spending on teacher salaries reach around 60 percent of the annual education budget by 2014.[9] If, however, teacher hiring continues uncontrolled at its current pace, then teacher salaries could make up over 80 percent of the education budget by 2014, which will certainly crowd out many core education programs.

Summary

This chapter has explored the forces driving teacher supply and demand, highlighting both key issues and system deficiencies. **In order to achieve efficiencies in the area of teacher hiring and deployment, it is necessary to consider the following measures:**

- adjustment of school staffing formulas to reflect the many small schools in Indonesia;
- introduction of multigrade teaching in small primary schools, particularly in difficult-to-staff areas;
- development of a system that allows teachers to become accredited in more than one subject and encourages multisubject teachers, particularly in small secondary schools; and

9 Estimates from World Bank (2009).

- enforcement of the 24-period/hour minimum teacher workload.

In addition, existing systemic weaknesses must be addressed to control teacher hiring. Potential options include:

- a system that allocates DAU funds on the basis of either student number or the overall population of a district and authorizes districts to both hire and pay teachers;
- restricting the use of BOS funds to minimize the amount of hiring at the school level; and
- serious consideration of limiting eligibility for the certification allowance, so that not all school-hired teachers become automatically eligible for it.

Teachers at Work: Ensuring that Teachers are Motivated, Supported, and Perform Well

Photo by Hafid Alatas

Key Messages in this Chapter:

Teacher motivation, behavior, and effort

- The absentee rate for Indonesian teachers has improved dramatically, falling from 19 percent in 2002 to 14.1 percent in 2008. Still, remote-area teachers have absenteeism rates of 23.3 percent, and principals in these areas, 20.4 percent.
- A 2007 video study provided the following key insights into teacher behavior in the classroom:
    - The traditional teaching method of rote learning, which is used extensively in Indonesia, tends to have a negative relationship with TIMSS test scores.
    - Many teaching techniques that had a positive relationship with test scores (e.g., review, using procedures, problem solving) were used less in Indonesia than in comparison countries.
    - Indonesian students tend to have less group interaction than students in other countries.
    - Classes with higher student involvement (i.e., student presentations, teacher-student interaction, students solving problems) had higher test scores, regardless of lesson structures.
    - Key activities, such as lesson planning, had a strong positive relationship with student outcomes.
    - Teacher characteristics have a strong relationship with student outcomes, with education level, experience, and a positive attitude having a positive relationship, and civil servant status, a negative relationship.

Teacher quality improvements

- Student outcomes in Indonesia are still relatively low for a middle-income country; evidence suggests that the quality of teaching is the main reason for variations in student learning.
- The Government of Indonesia recognized that professional competency and performance play a central role in improving the quality of education when it passed the Law on Teachers and Lecturers in December 2005.
- If implemented properly, the upgrading of the education of incumbent teachers to a four-year degree can have a significant positive impact on the educational system.
- The certification system will be a useful tool for improving teacher quality, but additional steps are needed to ensure that teachers are well supported, accountable, and perform well in the classroom.

System improvements

- Lack of regular, ongoing professional development and inadequate mentoring by experienced teachers negatively impact the motivation and skill development of classroom teachers.
- Professional development and support reforms should include:
    - performance appraisals with increased accountability
    - an induction program for new teachers
    - creation of a progressive promotion system based on merit rather than seniority
    - expansion of distance learning
    - strengthening of teacher training agencies
- Indonesia's system of teacher clusters will play a critical role in future teacher professional development efforts because:
    - teachers feel they benefit more through local cluster work than traditional training
    - cluster work is able to focus better on practical, relevant, real-life situations than does traditional training, which tends to be theoretical
    - in a country as big and diverse as Indonesia, the cluster system is a cost-effective, contextual professional development mechanism

Overview

The quality of the Indonesian school system still needs to be improved. International benchmark tests show that student outcomes in Indonesia are lower than those in neighboring countries. For example, in 2007, Indonesia ranked 36 out of 49 countries in the Trends in International Mathematics and Science Study (TIMSS) test. In science, it ranked 35. In the 2006 Program for International Student Assessment (PISA), which uses a methodology that focuses on how well 15-year-olds are prepared for real-world situations, Indonesia ranked 48 out of 56 countries in reading, 52 in science, and 51 in mathematics.

The government's immediate task is to manage the transformation of the teaching service. Following implementation of the 2005 Teacher Law, MONE has sought to strengthen the mechanism for delivering upgraded training to teachers at the local level (i.e., to the respective cluster working groups of primary and secondary school teachers, or KKG and MGMP[10]). To facilitate upgraded training, it will be necessary to improve the capacity of the institutions that provide training for teachers, including the LPTKs[11] (teacher institutes), the education quality assurance institutes (LPMPs[12]), and the centers for the development and capacity building of teachers and education personnel (P4TK[13]). A system of scholarships for teachers also needs to be developed.

The certification initiative presents an unprecedented opportunity to enhance the quality of the professional development and training provided to teachers. The government intends to create a culture of teaching that centers on instructional excellence and has a systemwide impact. Ultimately, this culture will affect every school and every teacher in the nation. This process of cultural change focuses on the experience of teachers in the classroom, as well as their level of training. All new teachers entering the service will be required to meet the established educational standard. The introduction of the certification process for a workforce of more than 3 million teachers is significant—it is an unprecedented reform in the developing world. To succeed, a clear focus on what constitutes effective teaching and what strategies will promote such teaching is required.

The reform of the educational system in Indonesia has important implications for education policy makers around the world. The identification and development of appropriate instruments of teacher certification, the involvement of a wide range of stakeholders in the reform, and the commitment of the government to the reform represents a comprehensive approach to teacher quality improvement. As the process is extended throughout the education service, it is being modified to ensure its ongoing effectiveness. Important new policies are being implemented that relate to teacher induction, systems for the professional observation of teachers in the classroom, in-school supervision of teachers by principals and external school supervisors, and new teacher training standards. Teachers will also be encouraged and motivated by new opportunities to gain salary increments through promotion and career advancement.

Certification: The Cornerstone of the Reform Effort

The initial years of teacher certification have provided insights on successful measures and identified areas that need improvement. Many skeptics questioned whether certification would even become a reality. The fact that MONE has been able to put structures in place and orchestrate various stakeholders—including universities, provincial and district education offices, schools, and teachers—in such a diverse and complex country is a major feat in and of itself. The initial years of implementation have involved both political and operational compromise in order to get the process started. Still, the certification process is neither static nor set

10 KKG – Kelompok Kerja Guru, or primary teachers working group; MGMP – Musyawarah Guru Mata Pelajaran, or secondary teachers working group.
11 Lembaga Pendidikan Tenaga Kependidikan.
12 Lembaga Penjamin Mutu Pendidikan.
13 Pusat Pengembangan dan Pemberdayaan Pendidik dan Tenaga Kependidikan.

in stone; the purpose and process must continue to be revisited to ensure that certification evolves into a more effective mechanism for quality improvement.

The current certification process relies only on a portfolio review to assess teacher quality. The original design of the certification process included strict competency measures, which included objective exams in specific teacher subjects and classroom observation to evaluate teaching skills. Due to political pressure and the view of some stakeholders that certification should primarily be a mechanism to improve teacher welfare (because it doubles teacher salaries), the quality aspect of certification was relegated to a secondary role. A portfolio review has certain benefits, as teachers are able to demonstrate their accomplishments over their careers through awards, training certificates, and other accomplishments. The design of the portfolio review even attempts to provide an objective measure of such accomplishments through a point system in key areas specified by the Teacher Law. While the portfolio can be a useful complement to other assessment instruments, however, it cannot function on its own.

The portfolio review is generally recognized as insufficient for identifying high- and low-competency teachers. Education policy makers have begun to evaluate how to improve certification, both in terms of enhancing the evaluation instruments and strengthening the process itself. Key deficiencies include:

1. The portfolio evaluation on its own cannot effectively measure competency.
2. Certification is a one-time process in which teachers who become certified do not need to undergo periodic re-certification or demonstrate performance in order to maintain their certification status.
3. The portfolio process can be potentially manipulated by teachers (a black market industry for forged certificates and other necessary portfolio items is already prevalent).
4. The certification process itself has been left entirely to the university sector, creating issues in terms of standardization and corruption.
5. Teacher certification currently lacks the support of an accompanying quality assurance and accountability framework.

Looking ahead, before the teacher certification initiative can be judged effective in improving student learning outcomes and, ultimately, educational quality in Indonesia, a range of questions needs to be answered. These questions include: Can increased teacher compensation attract university graduates—still a small cohort among Indonesia's total labor force—to become teachers? How can pre-service training better select and prepare future teachers so that the additional training period is not a waste? How can the enhanced qualification of teachers be translated into better-quality education in the Indonesian context, if at all? How can existing teachers' qualifications be better upgraded without sacrificing certification standards or teacher morale? How can incentives for better teaching performance be created and maintained, particularly after certification? Will tight fiscal constraints delay the payment of teacher allowances and thus break the promises of the reform? How can teacher quality be better linked with the responsibility for teacher hiring and firing, as well as school financing? The subsequent sections analyze these issues.

Teacher Performance

Teaching skill constitutes the ability of classroom teachers to engage students in the learning process. Good teachers are able to motivate students by stimulating their interest in the subject matter and increase their willingness to participate fully in learning activities. This goal may be achieved in ways related to the particular methodology adopted, the relevance of the content to the lives of the students, the interest in the topic that the teacher can generate among students, and many other factors related to personality and training. The manner in which a teacher delivers lessons can have a remarkable impact on the concentration span and learning rate of students. In turn, teacher delivery has an impact on the test scores that students can achieve. A skilled teacher

can usually stimulate interest in even the most difficult material by their mode of instruction, commitment to the students, and management of the class.

International assessment results can be used to investigate how various characteristics of Indonesian teachers affect student learning. Such characteristics include educational background, teaching experience, and the quality and intensity of in-service teacher training. However, there are many other factors that affect student learning, such as in-school management of teachers, salary payments, and other incentives and conditions of service. Further research is necessary to identify the determinants of the value added by teachers to student learning. Variables such as teacher effort (as measured by teacher attendance) and teachers' general aptitude and subject knowledge (as measured by test scores) require thorough analysis.

Indonesian teachers face challenges in reaching the teaching skill levels of benchmark countries. As shown by a video study of teachers in 2007 (Government of Indonesia 2008), Indonesian teachers tend to have less education and experience than teachers in counterpart countries that conducted similar video studies. Their lessons were also significantly longer, taxing the concentration of students. In spite of their length, these lessons spent relatively less time on mathematics, as well as less time reviewing previous lessons to ensure student mastery. The materials presented to students were, moreover, often not sufficiently challenging. Furthermore, few problems were given to students that required proof and application, with more emphasis given to rote learning. In addition, homework was more limited in Indonesia and teachers provided less guidance on how to complete it. These findings indicate some of the main constraints to improving student learning in the classroom.

Lack of regular, ongoing professional development, together with inadequate mentoring by experienced teachers, has a negative impact on the skills and motivation of classroom teachers. Informal observations indicate that teacher-centered lessons and large group instruction are common in Indonesian classrooms. Teaching often involves copying from the blackboard and an authoritarian approach by the teacher. Teachers focus more on memorization of material than on problem solving. Instruction also tends to be more theoretical and didactic than practical and experiential, making it more likely that students remain disengaged from the task of learning.

Good communication between teachers and parents is essential. Parents see teachers as responsible for their child's learning and development and expect to be able to discuss their child with a caring teacher. They expect teachers to be engaged in the education process with their children. Parents believe that a good teacher is motivated by the desire to assist children to grow in knowledge and will strive to engage parents to achieve this goal. Good-quality education therefore depends on employing teachers who are able and willing to give such service.

Dimensions of Teacher Performance

Many factors have an impact on the quality of teacher performance, including a teacher's personality and ability to motivate students; his or her intrinsic desire to build and improve society; feedback on student achievement; the extent of a teacher's training and mastery of the subjects that he or she teaches; age and experience; work effort and commitment to teaching; salary and salary differentials; adequacy of infrastructure and teaching materials; in-service training and opportunities for professional growth and advancement based on merit; community recognition and prestige; and available pensions and benefits.

Selection of pre-service trainees

The quality of the teaching workforce is influenced by the selection of appropriate people for the profession; continuous training of those in the workforce to improve and update their knowledge and skills; and the ability to discharge teachers who do not perform well. Selecting the right candidates for the teaching profession is critical to superior performance. For example, the top-performing education systems

worldwide recruit teachers from the top one-third of each secondary school graduation class. In South Korea, teachers are recruited from the top 5 percent of such graduates; in Finland, the top 10 percent; and in Singapore and Hong Kong, the top 30 percent. In the United States, studies show that "a teacher's level of literacy, as measured by vocabulary and other standardized tests, affects students achievements more than any other measures" (Walsh and Tracy 2004, 8).

Effective selection places a strong emphasis on the academic achievements of candidates, as well as their communication skills and motivation for teaching. It is anticipated that the recent improvement in teacher remuneration in Indonesia will attract more candidates of higher caliber to the school system. However, if the system does not establish a rigorous standard of selection at entry, there will be no change in this variable. At present there has not been any research to investigate the competency of the teacher training intake process in Indonesia.

Teacher absenteeism and effort

Attendance is widely recognized as one measure of teacher effort. In 2002–2003 in Indonesia, the national average for teacher absences from school during unannounced visits by survey teams was 19.6 percent (SMERU 2008b), a rate lower than that of India, but much higher than that of Peru or Ecuador (Chaudhury et al. 2006). Low pay has been cited as a reason for teacher absences. Due to their low salaries, many teachers hold outside jobs to support their families. Given the increased remuneration now available to teachers certified according to the Teacher Law of 2005, it is expected that there will be some improvement in this rate. In 2008, using a similar methodology, the SMERU Research Institute (Jakarta) noted an overall reduction in teacher absences from 19.6 to 14.1 percent (SMERU 2008b), as shown in table 13.

Table 13. Teacher Absence as a Measure of Effort, 2002–2003 to 2008

	2002–2003	2008
Teacher absence (all schools)	19.6%	14.1%
Panel schools (39 non-remote schools)	22.7%	12.2%
Remote schools	-	23.3%
Employment status: Civil servant	18.8%	12.5%
Contract teacher	29.6%	19.4%
Role: Principal	25.1%	20.2%
Classroom teacher	19.3%	14.0%

Sources: SMERU (2008b); World Bank (2008).

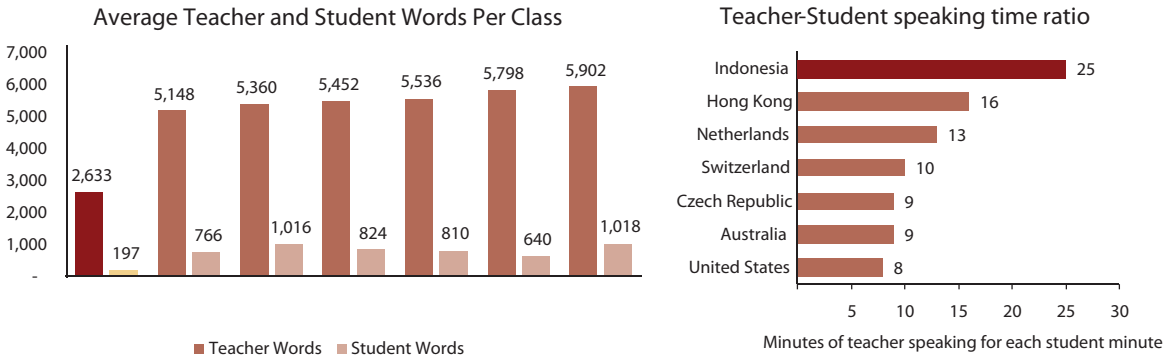
The new remote-area allowance introduced by the Teacher Law of 2005 is designed to attract better-quality teachers to remote schools. The allowance was also intended to provide additional motivation for these teachers and encourage them to devote more effort to their schoolwork. The program includes 199 districts with remote areas or areas affected by conflict or natural disaster. A survey of a sample of teachers receiving the allowance in remote areas was undertaken in 2008 to assess its effect on teacher effort.

The resulting overall reduction in teacher absences suggests districts are managing education better. The reduction is due to more regular supervision of schools, higher remuneration, and increased wealth in general. However, teacher absentee rates in remote schools remain high. The remuneration allowance does not appear to have reduced absences in these areas. Continued absenteeism surveys are planned on a regular basis to determine the long-run impact of the allowance.

Pedagogical practice

Indonesian teachers spend less lesson time on new content and put less emphasis on reasoning and problem solving than teachers in seven comparator countries (Australia, Czech Republic, Hong Kong, Japan, Netherlands, Switzerland, and United States). In 2007, the abovementioned video study was undertaken in a sample of grade 8 mathematics classes in Indonesia to relate classroom teaching-learning behavior with student achievements on the TIMSS test, as well as to determine which teaching methodologies appeared to be most effective. The data gathered by the study was then used to compare teaching behavior in Indonesia with classroom characteristics in seven other countries, which identified weaknesses in the pedagogical practices of Indonesian teachers. The study showed that there is little quality student-teacher interaction in the Indonesian classroom, as seen in figure 34, which illustrates the amount of teacher-student interaction measured by the number of words spoken during a typical lesson.

Figure 34. Instructional Process: Teacher-student Interaction in Indonesian 8th-grade Mathematics Class



Source: Government of Indonesia (2008b).
Note: Lessons tend to be didactic and top-down often with inadequate interactive student participation.

The left-hand graph in figure 34 shows that, **on average, Indonesian teachers in the video study spoke 2,633 words to students during a lesson, while the number of words spoken by teachers in the seven comparator countries ranged from 5,148 (lowest) to 5,902 (highest)**. At the same time, Indonesian students spoke 197 words, while the number of words spoken by students in the seven other countries ranged from 640 (lowest) to 1,018 (highest). The student-to-teacher word ratio is shown on the right-hand side of the graph. It ranged from 1:25 for Indonesian students and from 1:8 (lowest) to 1:16 (highest) among the seven comparator countries.

This data illustrates the low level of student-teacher verbal interaction in Indonesian classrooms. Further, qualitative data shows that when students do talk, it is when they are solving problems in front of the class. Overall, the data show that students do not experience enough student-centered learning and that teachers do not respond to the individual interests of students. These findings mean that lessons are didactic and top-down, rather than being focused on the needs of students and engaging them.

The study results also included a regression analysis to determine what teaching techniques have a statistically significant relationship with student results on the TIMSS exam. After controlling for various home, student, school, and teacher characteristics, **the amount of time dedicated to reviewing previous class topics, public interaction that involved more student participation** (e.g., through student presentations)**, and problem solving** (e.g., investigation and practical work) **had a positive relationship with TIMSS test scores**, while the amount of time dedicated to practice (often involving students working individually on a problem), private

interaction, and problem solving through discussion had a statistically significant negative relationship with test scores. **Overall, the study indicated that Indonesian teachers could possibly improve student outcomes by:**

- applying better time management to teach relevant content more effectively;
- placing more emphasis on higher-order thinking in instructional delivery;
- dedicating more time to public interaction and less to individual, or private, interaction;
- providing more class time for review of topics from previous class lessons;
- splitting class hours from the current 70 minutes (on average) into two separate classes of 35 minutes in order to maintain students' attention;
- reducing the time spent on math organization and increasing the time spent actually teaching math;
- applying more content overlap to what is taught and what is tested;
- ensuring that the level and amount of content covered are equal to the level and amount understood by students; and
- creating an environment of enjoyable learning to maintain student engagement, involvement, and attention.

Data indicates that Indonesian teacher competency and teaching strategies should be evaluated regularly and improved intensively, both through pre-service and in-service training. This improvement should involve a program of continuous professional development. The video study emphasized that the combination of both the experience of teachers and their educational backgrounds had a strong influence on student achievement. Teachers with strong academic backgrounds but little experience, or teachers with extensive experience but weak academic backgrounds, do not necessarily positively influence student test scores. This finding highlights the importance of implementing an induction program for new teachers during their probationary period.

Professional Development and Support

Using the teacher probationary year more effectively: Induction programs and evaluations

The probationary period in Indonesia could be more effectively used to evaluate teachers. In most occupations, a probationary period is intended to be a trial period, during which a meaningful evaluation is made. During this trial, the employer can evaluate whether an employee is suited to a job or requires additional contextual training before being confirmed in the position on a permanent basis. The period is not intended to confer automatic permanent tenure. MONE is currently working to develop policies and procedures for the induction of new teachers, as well as programs for new principals and school supervisors.

The formality of teacher induction programs and the type of strategies employed varied widely among the countries in a 1995 APEC study (see table 24). The programs ranged from a formal pre-service orientation to mentoring through networking to in-service training at the provincial and school level to an informal welcome by principals. Strategies employed include workshops, orientations, teacher meetings, observation of model classrooms, mentoring, distribution of handbooks, internships, peer probation, training, and evaluation.

Table 14. Teacher Induction Programs in APEC Member Countries

Member	Where implemented	Formal or informal	Feature
Australia	Nearly all schools in nearly all states	Both	Orientation, mentoring, in-service training, and probation
Brunei Darussalam	All schools	Informal	Orientation
Canada	Some schools in some provinces	Both	Probation and mentoring
Japan	All schools	Formal	Mentoring and training
Indonesia	None	None	N/A
Republic of Korea	All schools	Formal	Pre-appointment orientation
New Zealand	All schools	Formal	Probation and program of advice and guidance (mentoring)
Papua New Guinea	All schools	Both	Mentoring meetings and "inspection"
Singapore	All schools	Both	Mentoring, seminars, and national handbooks
Chinese Taipei	All schools	Formal	Internships
United States	Most schools in one-half of the states	Formal	Mentoring and assessment

Source: APEC (1997).

Increasingly, school systems have begun to mandate teacher induction programs. For example, the induction guideline of the Department of Education of the U.S. state of Massachusetts states, "All school districts are required to provide an induction program for teachers in their first year of practice. Induction programs provide the structure that maximizes beginning teacher learning in the context of classroom experience" (Massachusetts Department of Education 2001, section 7.2.1). In the busy atmosphere of a large school, it is easy to overlook the uncertainties and insecurities faced by a beginning teacher. An effective induction program is probably the single most important training experience for new teachers and can have a significant effect on their future careers. Even though well-prepared by pre-service training, the beginning teacher may approach a class of challenging students with trepidation. Support at this point can make a difference in shaping his or her attitudes and motivation.

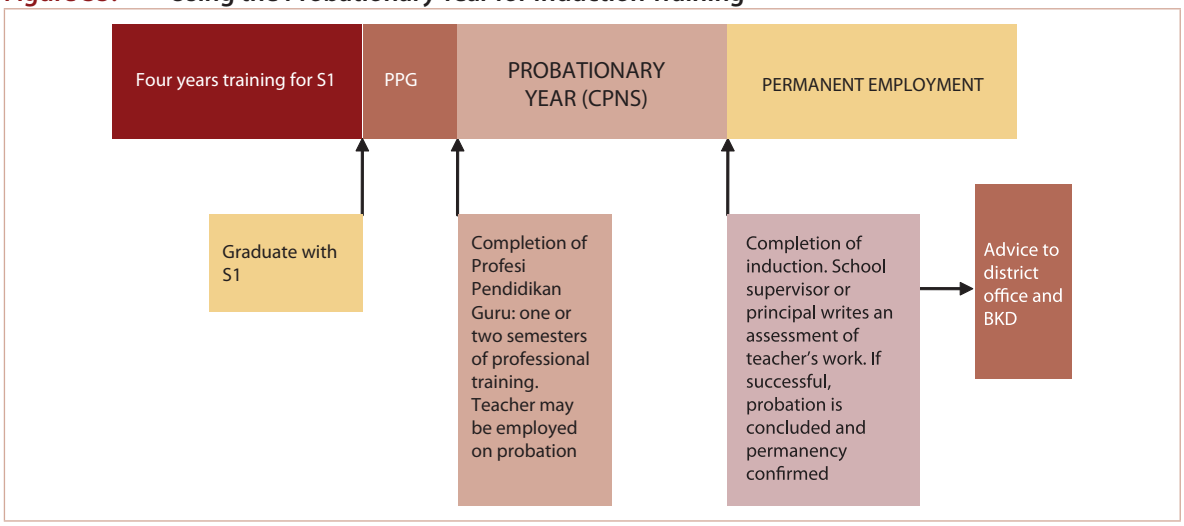
The teacher certification process should be a shared responsibility, with school principals having an opportunity to formally assess the performance of new teachers at the end of their probationary year. LPTKs are responsible for the academic standard of their graduates. However, the school principal is responsible for evaluating the work of new teachers. A report by the principal on a teacher's work at the end of the probationary year could be forwarded to the relevant LPTK, which would then have the responsibility of issuing the certification. Such a balanced review would ensure that new teachers understand the importance of performing well in the classroom. Certification would then emphasize that a teachers earn the benefit of the professional allowance only by performing well during their apprenticeship.

At present, Indonesian civil servants almost always receive tenure after their probation period. All Indonesian civil servants are placed on probation for one to two years before their appointment is confirmed.[14] The law provides for the termination of staff during this period if their work is found to be unsatisfactory. In practice, however, confirmation of permanent employment and progression within the Indonesian civil service are virtually automatic. **This process should be strengthened to ensure that it serves as an effective workplace**

14 Probationary civil servants are termed ***calon pegawai negeri*** (CPNS) because they are "candidates," rather than full PNS employees.

training process. It should also be used to weed out less effective and nonperforming teachers. The link between induction training and the probationary year process is shown in figure 35.

Figure 35. Using the Probationary Year for Induction Training



At present, teachers are subject to a evaluation and test (largely pro forma) at the end of their probationary year. During this period, all civil servants, including teachers, receive only 80 percent of their starting salary. Teachers are not supposed to receive the professional allowance during the probation period. As is true for all civil servants, teachers are presently subject to a test at the end of their probationary period and a generic performance evaluation (the DP3 Form). If unable to perform satisfactorily, their probation may be extended for up to two years.

The test and DP3 requirement should be replaced with an assessment report written by the school supervisor or principal. If the report is satisfactory, probation would be completed after one year. Having passed, the teacher would then receive the full salary. However, if the report is unsatisfactory, the teacher could have his/her probation period extended for another year. Tenure and the payment of the professional allowance would be deferred until the end of the additional period. Failure to attain the required standard after the second year might then require special action, such as a further extension of probation (not currently possible under current civil service rules), redeployment to another area of the civil service, retraining for another occupation, remedial training as a teacher, or, as a last resort, discharge from the teaching service.

Local structures to improve teacher performance

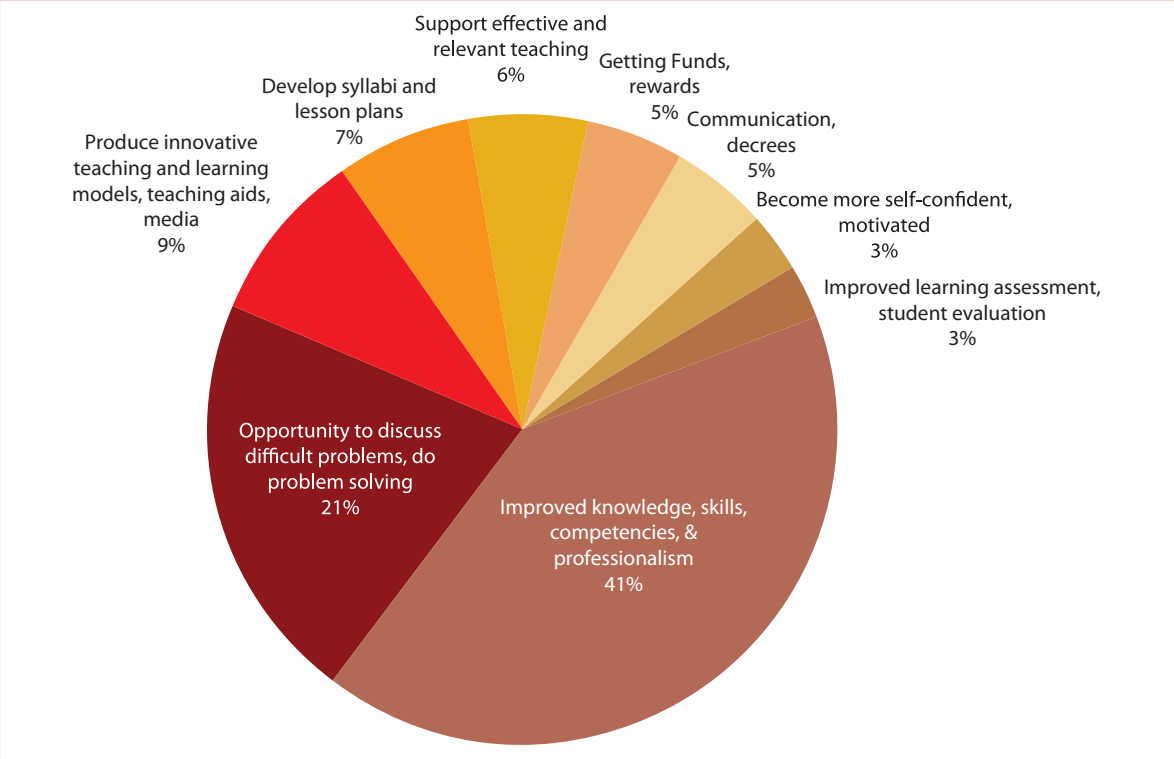
Some education experts believe that interaction with and training of teachers is more effective in improving their skills than the often theoretical training provided by universities or formal in-service training programs. In Indonesia, the KKG (*Kelompok Kerja Guru)*, or elementary school teacher clusters, and the MGMP (*Musyawarah Guru Mata Pelajaran*), or secondary school subject teacher clusters, are widespread and have a history spanning 30 years (World Bank 2007c). Teachers work together in these clusters to prepare and deliver training and self-improvement activities at the school level. It is estimated that there could be approximately 20,000 primary school teacher clusters and 15,000 secondary school clusters organized on a subject basis (the most common being mathematics, natural science, social science, Indonesian, and English). With a workforce of 3 million teachers, the clusters make up one of the biggest teacher networks in the world.

Clusters are based on the concept that self-help is one of the best forms of support for the professional development of teachers at the local level. These clusters focus on practical rather than theoretical knowledge,

including topics that relate to the local context; offer grassroots support; and have the capacity for ongoing consultation and discussion. These characteristics give the professional development offered by clusters a distinctive character that distinguishes it from traditional off-site in-service courses conducted at the district or provincial level.

Teachers in Indonesia find clusters very beneficial. In an open-ended survey question, by far the most common response of teachers was that clusters improved their knowledge, skills, competencies, and professionalism**.** Teachers also said that clusters were an ideal forum in which to discuss difficult problems and seek solutions. Problems addressed by the groups span how to teach a difficult topic to dealing with issues faced in a specific class (see figure 36).

Figure 36. Three Biggest Benefits of Cluster Activities, according to Teacher Survey

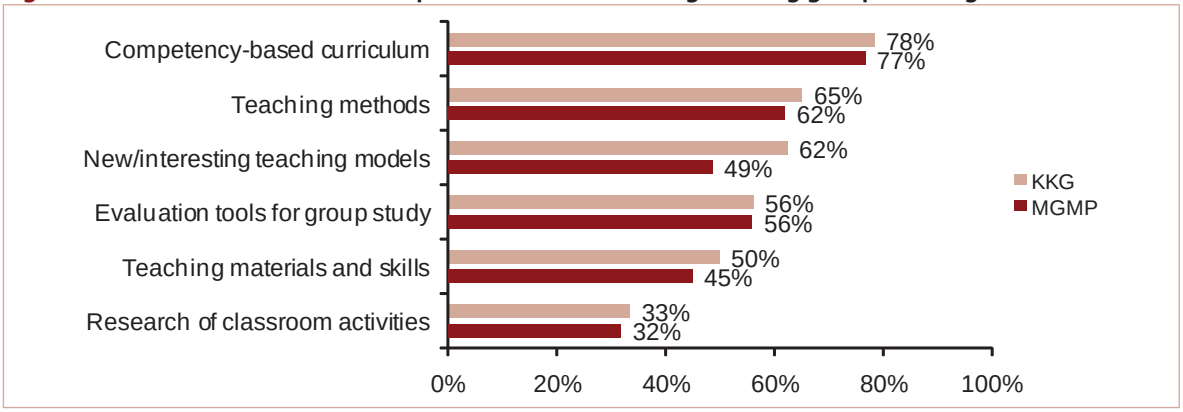


Source: Ragatz, A., and R. Kesuma. (2009)

Clusters are demand rather than supply driven. Teachers use cluster sessions to develop innovative teaching and learning models, as well as to create and share teaching aids and other media for use in classes. When teachers were asked to identify areas where working group activities assisted them to develop professionally, the top-ranked answer was in developing their syllabus guide and lesson plans.[15] The clusters were also seen as an opportunity to develop teaching and learning materials, models, and aids, as well as a place to practice these techniques together. Training was often mentioned, indicating that teachers see clusters as a mechanism for receiving training, intensive capacity building, and guidance. Clusters can also be a useful mechanism for disseminating information, such as new education policies.

15 Current policy in Indonesia requires each teacher to develop his or her own curriculum (as opposed to having a standard curriculum), so clusters have become a forum for teachers to work on teaching plans that benefit from what other teachers are doing.

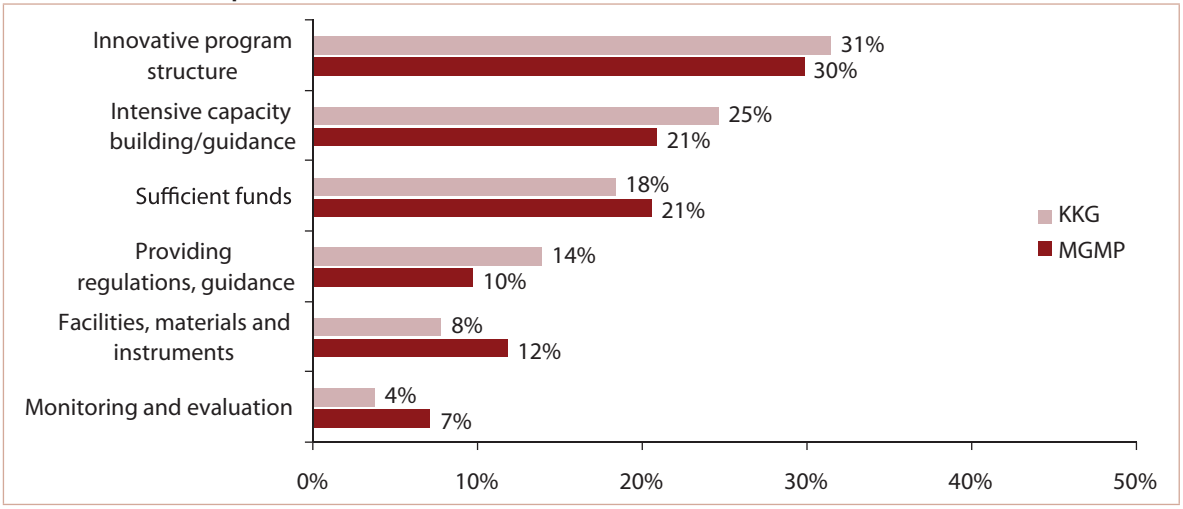
Figure 37. What teachers develop as a result of attending working group meetings



Source: Ragatz, A., and R. Kesuma. (2009)

Cluster facilitators who were interviewed felt that lack of an innovative program structure was the biggest constraint on cluster effectiveness. They also pointed to the need for more intensive capacity building, guidance, and sufficient funds. In addition, facilitators noted a need for more regulation, including specific policies for attending meetings, evaluating working group results, establishing policies on receiving credit for working group activities, and upgrading basic equipment and facilities.

Figure 38. Instructional Development Team's Opinion on How to Increase Cluster Effectiveness (% of respondents)



Source: Ragatz, A., and R. Kesuma. (2009)

Nominally, the number of teacher clusters is large. However, only a small number are active at any one time. Much depends on the availability of funding and the motivation of local teachers in organizing programs and managing activities. The need for teachers to upgrade their training for accreditation in order to become certified has generated a search for training activities. The Government's Better Education through Reformed Management and Universal Teacher Upgrading (BERMUTU) project will build on the strengths of an existing grants process and make available modular training materials. These materials will be based on strategies

suggested by a range of donor programs.[16] However, it will be necessary for district administrations to take the lead in activating clusters to ensure that they have the knowledge and skills to provide training that is of direct benefit to teachers in the classroom.

Clusters could be strengthened by training their management committees. As a result of additional training, cluster coordinators, treasurers, and other cluster committee members would gain additional knowledge and skills in organizing and evaluating local courses. Management of the financial and administrative aspects of these activities would result in more effective training programs. Project funding could also provide for outreach by instructors from the Institutes of Educational Quality Assurance (LPMPs) and the Centers for Development and Empowerment of Teachers and Education Personnel (P4TKs). In cooperation with provincial and district authorities, consultants could visit local clusters to rejuvenate inactive groups or encourage their formation in new areas. This mechanism could also foster cooperation between provincial and district offices. In the longer term, this mechanism could facilitate the continuous professional development of teachers on a self-sustained basis.

Regional structures to improve teacher performance

The LPMPs and the P4TKs are both responsible for supporting the improvement of schools and teacher quality. Both agencies are decentralized, but centrally managed. Recently, the function of the LPMPs was changed from teacher training to teacher quality assurance (Government of Indonesia 2007b). A second regulation re-affirmed the role of the P4TKs as the national teacher training provider (Government of Indonesia 2007c).

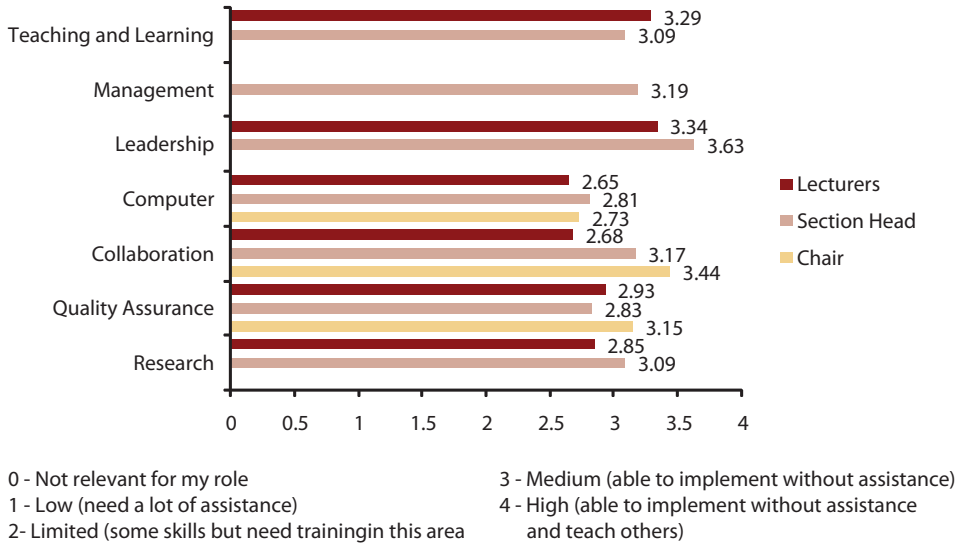
The LPMPs will now conduct quality assurance reviews of schools. There are 30 LPMPs, one in each province. These organizations will now provide trained teams to undertake quality assurance reviews of schools. The LPMPs will also administer the funding of training activities offered through teacher clusters and monitor and evaluate the programs for which funding is distributed. These bodies could also supply officers to assist in training activities conducted through clusters.

As training agencies, each of the 12 P4TKs has a specialized vocational or subject focus. These organizations play a lead role in training teachers, particularly expert teachers (or *guru inti*) who are the key trainers in school clusters. The P4TKs also train members of teacher working group committees in program and financial management and provide train-the-trainer courses for improving teacher quality at the provincial and district level. Their decentralized location put them in an ideal position to support teacher training and school improvement. However, the recent change in the role of the LPMPs and the size of the in-service training task have raised questions about their capacity to undertake these tasks.

Functional LPMP staff evaluated their own skill levels as *limited* to *medium* in a recent review. The review asked 467 staff members of the 30 LPMPs to rate their level of skills in eight areas critical to their new role (AusAID 2007). The limited rating was defined as "some skills, but need training in this area." In general, Section Heads rated their skills only slightly higher. As frontline staff who are required to deliver quality assurance and teacher training, this self-evaluation indicates the need for a concerted training effort.

16 These programs include UNICEF's Creating Learning Communities for Children (CLCC) program, USAID's Managing Basic Education (MBE) and Decentralized Basic Education (DBE 1, 2, and 3) programs, and AusAID's Whole School and District Development program.

Figure 39. Self-rated Skill Levels of LPMP Staff Lecturers



Source: AusAID (2007).

Overall the review concluded that, while:

> . . . capacity development initiatives for P4TK staff should focus on new approaches to competency improvement and capacity development, the situation for LPMP was more challenging and complex as the change from in-service training provider to quality assurance provider will necessitate extensive retraining of staff, development of new organizational structures, and the implementation of significantly different programs. (AusAID 2007, iii)

It is therefore critical that staff members of these institutions receive training for their new roles. In particular, the LPMPs should be provided with additional staff skilled in quality assurance processes and monitoring and evaluation in general. Furthermore, it is necessary to ensure that the P4TK staff used to train teachers are skilled in new, student-focused teaching techniques.

Teacher training agencies

The teacher training institutes (the LPTKs)—both public and private—remain the key teacher training agencies. The enactment of the Teacher Law of 2005 gave these bodies additional obligations. Previous policies raised the minimum qualifications of teachers. Now, however, all LPTKs are required to provide the new four-year course for pre-service teachers that leads to the S1 qualification. A post-graduate course that qualifies participants for certification will also be implemented by these institutes,[17] which are under significant pressure to adopt the new courses and ensure quality learning.

In order to achieve accreditation in the future, the LPTK will be required to facilitate qualitative changes in the content and delivery of their teacher training courses. Kraft (2006) suggests that the LPTK:

17 New teachers complete the post-graduate program for specialist subject knowledge, as well as for age-specific pedagogical knowledge and practice, to gain certification before commencing work as teachers.

- incorporate new student-centered learning and interactive classroom methodologies into their study programs;
- demonstrate international best practice in teacher internships and practicum training, such as ensuring that lecturers are experienced, practicing teachers who can demonstrate and model best practice to teachers in the classroom, teach in schools for part of each year as part of their employment contract, and have close links with model or demonstration schools;
- develop and deliver packaged learning materials on both subject content and teaching methodologies, using workshop, experiential, and on-the-job training components at the school cluster level to fully engage teachers (who continue to teach while upgrading and improving their skills);
- recognize and measure the prior learning of teachers in the classroom to ensure that they receive value-added training as they upgrade their qualifications to the S1 level and receive due credit for what they have learned about their profession on the job;
- provide highly skilled lecturing staff to work with teachers and schools, supervisors, other district office staff, and local communities to facilitate the assessment of teachers; and
- franchise training courses to private universities and other providers to facilitate their geographic availability, then monitor the quality of the teaching of these courses.

Expansion of distance learning: The Open University

The Open University (UT)

The Open University (Universitas Terbuka, or UT) has provided an important pathway for teachers who need to upgrade their training. Some 80 percent of students at the Open University are teachers who are undertaking additional training. Thus, the institution provides an important pathway for teachers, particularly those located in remote areas, to meet certification requirements. In August 2006, the UT had 37 regional offices in 26 provinces, with 225,000 active, enrolled students, of which half were funded by districts or regional governments and the other half were self-financed. The UT has an extensive network and depends on harmonious working relationships with provincial universities.

The UT offers a degree program for both primary and secondary teachers. It also provides a five-semester course for teachers who wish to upgrade from the diploma level for approximately IDR 2 million ($220) per year. The program uses paper-based materials in combination with face-to-face tutorials and multimedia. The distribution and production of materials are straightforward and consists of one package that covers the complete course. Even with the exemption of some coursework, the distribution of the entire package is very cost-efficient; it also provides a teacher with materials in subject areas on which they will not be tested.

The UT has well-established collaborative relationships with provincial universities, which provide tutors for examinations, assessments, and face-to-face workshop instruction. Students can sit for an examination (paper-based assessment) four times a year in any of 360 district locations. The UT has a simple management and administrative structure due to the uniformity of its course delivery system. Registration is easy (the local post office) and the cost is low.

The UT is currently piloting a Recognition of Prior Learning (RPL) system. Under this system, teachers may receive credits on the basis of teaching experience that exempts them from repeating certain coursework.

UT teaching methods may be suboptimal, as they place too much emphasis on academic and paper-based learning. UT student assessments, moreover, do not involve observation of pedagogical, personal, or social skills (three of the four main competencies required by the Teacher Law of 2005)**.** The university has begun to review its curriculum and course duration to accommodate the need for training within the defined 10-year period, a process expected to take up to 2 years. It is also in the process of developing an online system for testing and examinations. The curriculum and course duration review poses a major challenge because revisions to either have implications for both the cost of courses and the training of tutors and staff.

It may be possible to dramatically expand UT enrollment. The university has the potential to provide excellent support to teachers who wish to upgrade their qualifications to the S1 level. With donor assistance, it may be possible to expand its enrollment from the current level of 225,000 to 350,000. This growth could be facilitated by simplified, streamlined delivery. UT uses provincial universities extensively to provide interactive workshops for teachers undertaking its courses. Collaboration with a larger number of universities would thus facilitate expansion. Expansion could also be assisted by the development of an online testing system.

Overseas experience shows that external teachers often produce better academic results among teachers than internal teachers because of their age and maturity. Furthermore, as most students are already practicing teachers, they can apply their learning on a day-to-day basis in the classroom. Consequently, the results of their practicum assessments are also often of a higher order.

LPTK Consortium

The use of electronic media may facilitate greater access to training by teachers who seek to upgrade their qualification levels. Trials involving electronic media have already been undertaken. The HYLITE Program, for example, is a teacher training program designed for elementary school teachers to raise their qualifications from the D2 to S1 level. The program is conducted through open and distance learning modes. This new strategy is being funded by the BERMUTU program. A consortium of ten LPTKs has worked to develop the audiovisual materials, print resources, test items, and tutorial plans that form the basis of the HYLITE Program. The learning model also includes Web-based course materials, in addition to face-to-face meetings with residential and twenty three visiting tutors. Universities are involved in delivering the program. At present, some 7,600 students are undertaking the course using Information and Communication Technology (ICT) facilities at the district level or as part of their local elementary teacher cluster (KKG) activities.

The HYLITE Program combines distance learning with residential periods. A residential period is required for one month at the beginning of every semester. During this period, students are engaged in various tutorial activities. They also sit for an examination on material from the previous semester. After each residential period, students return home and study independently, using available learning resources. These resources include print and audiovisual materials, together with Web-based courses accessible through the ICT Centers or any Internet cafe. The student learning process is facilitated through face-to-face tutorial sessions during tutors' visits to the student's study center, online interactions, and/or synchronous interaction in the form of teleconferences.

The program represents an innovative means to expand the availability of training for in-service teachers in Indonesia. The HYLITE program increases training delivery modes and is the first distance-learning program delivered through electronic means. It was developed by means of cooperative program design and preparation among a numbers of key LPTKs and has been accepted by 23 more LPTKs, which have agreed to the content, delivery system, and the level of credits awarded to students. It should be noted, however, that the program itself is comparatively expensive. Each enrollment costs approximately IDR 11 million per year, compared to IDR 2 million for the UT program. The HYLITE fee covers a wide range of costs: books, marking of tests and assignments by the LPTKs, transport to residential venues, and students' residential accommodation for one month.

Scholarships

The government has expanded its scholarship program to assist teachers in upgrading their qualifications. A limited number of full-time scholarships is being provided; most are for distance learning and cover the fees for Open University courses or trial distance-education courses through other universities. At present, 1,455,242 teachers need to upgrade their training. In 2006, 18,754 scholarships were funded. This number increased to 170,000 in 2007 and 270,000 in 2008. Funding projections indicate that more than IDR 5 trillion will be spent on the initiative over the next eight years.[18]

18 Figures made available by Directorate of Education Profession of the PMPTK (PROFESI), MONE, June 2008.

Teachers over the age of 50 who have 20 years of work experience or more will receive the highest priority in the upgrading process. As a reward for their longstanding service, these teachers will have the opportunity to upgrade their educational requirements in two stages. This process was expected to be finalized by year-end 2009. However, teachers under 50 years of age represent the great bulk of the upgrading target. Those with a D3 qualification will finish in two stages; those with a D2 will finish in four stages and those with a D1 or less, in up to six stages.

Upgrading targets will stretch the capacity of the LPTKs and the Open University. Care must be taken that the pressure of certification does not impact the quality of teachers' learning experiences at the two institutions. The education required by the certification process offers a critical opportunity to qualitatively improve teachers' knowledge and skills. The nature of their learning experience is intended to improve that of the current generation of students. The fact that many of these teachers are located in remote areas emphasizes the need for effective distance-education courses. It also emphasizes the need for effective cluster-based courses at the school level, where teachers can participate in workshops conducted by lecturers and expert teachers.

Teacher Motivation

Progression and promotion

Teachers will be required to seek training on a continuous basis if they are to retain their certification as teachers. There is some concern that teachers, once certified, will not actively continue to improve their skills. To prevent this outcome, the 2005 law requires that all teachers seek training on a continuous basis in order to retain their certification. However, this requirement will place additional demands on the education system's ability to deliver this training. The principle of continuous professional development implies the implementation of various policies, including:

- continued strong support and funding for teacher clusters as the key local delivery mechanism for in-service teacher training;
- further refinement of the competency framework for teachers, principals, and school supervisors;
- linking the competency framework to a ladder of progressive training and development programs (from entry-level to middle-tier and senior posts);
- identification of a funding and resource strategy to maintain these programs on a continuing basis;
- development of a matrix of programs for teachers (from those in initial training to those in positions of responsibility and school management) and the ability to deliver these programs at the provincial, district, or school cluster level, as well as via distance-learning modes;
- adoption of a modular training program for school supervisors and school principals; and
- development of programs and links with universities and other training providers and institutions, including the P4TKs, for improving the quality of teachers and upgrading their qualifications for various career steps.

With assistance of funds from the BERMUTU Program, the structure and mechanisms for continuous professional teacher development are being developed. Instruction modules now being written to train teachers at the local school cluster level will be accredited towards a university qualification. These modules will be linked with four progressive teacher profiles and count towards a progression on the teacher salary scale in future years (see table 15). This process will ensure that teachers have an ongoing in-service training structure that is linked to their long-term career development and advancement. The process is expected to be driven by the incentive of increased financial rewards.

The creation of a promotions structure within Indonesian schools is critical. At present, the only executive positions within the school system are those of the principal, elected coordinators, and expert teachers (*guru inti*, who are shared between schools). International best practice usually involves a hierarchy of at least four positions (profiles) above the regular classroom teacher. These positions may include principal, deputy principal, master teacher (or subject head, who manages groups of teachers), and advanced-skills teachers. Standards for each of the levels shown in table 15 will be developed for the Indonesian educational system, with guidelines established to assess the readiness of teachers to progress to each level. Classroom performance assessments, teacher interviews, submission of a portfolio, or some combination there of may used to meet the standards. Teacher progression and promotion will be linked to these profiles. However, linking the profiles to the existing PNS salary scale may be difficult. To achieve the flexibility desired, it may be necessary for the Government of Indonesia to legislate a new and separate Teaching Services Act to cover the unique working conditions of teachers.

Table 15. Teacher Profiles and Continuous Professional Development

Salary (PNS scale)	Level Title	Standards to be developed for each level	Training modules linked to standards
4d and 4e	Utama (Master)	School Supervisor, Master Teacher, Principal	School-based management and leadership
4a and 4c	Madya (Senior)	Fully professional level	Instructional leadership
3c and 3d	Muda (Junior)	Capable teaching level	Class action research
3a and 3b	Pertama (Novice)	Formative teaching level	Class action research
	Induction (probation)	Beginning teacher level	Good teaching practice

Source: Government of Indonesia (2007a).

Appointment to the positions shown in table 15 should be based on merit. As a recent workshop of the Directorate of the Teaching Profession of MONE noted,

> Using merit as a guiding employment principle means that an appointment is made through fair and open competition solely on the basis of the person's capacity to perform the tasks of a given role as specified in the selection criteria to the highest standard. Merit is defined as the extent to which each applicant has qualifications, skills, knowledge, aptitude, and experience relevant to the requirements of the position. (Government of Indonesia 2008a)

The four positions to be created will be paid at higher rates than those of regular teachers, whose maximum salary scale will be below the lowest promotion position. This structure will result in competition for higher positions and greater effort on the part of those aspiring to them. It also means that there will be a core of skilled and motivated higher-level teachers to manage schools and drive school improvements together with the principal.

Teachers will have to master defined areas of knowledge and skill to be promoted to a higher level. Unless teachers are promoted on merit and unless promoted teachers are paid a salary higher than that of regular teachers, there may be insufficient incentives to induce these changes. Policies linking the four teacher levels with differentiated salaries will create an incentive structure to reward teachers who participate in continuous professional development, meet the merit requirements of each level, and drive teacher quality improvement.

The Ministry of National Education must develop the certification system to ensure that teachers continue to improve their skill sets throughout their careers. The professional allowance represents a significant increase in teachers' remuneration. It will encourage many underqualified teachers to undertake the necessary training to upgrade their educational qualifications to the S1/D4 level. However, it is important to ensure that once they are certified and receive the allowance, they continue to improve their skills and qualifications. Lack of a performance-based salary system does not encourage teachers to work to their maximum potential.

Dealing with underperforming teachers

Students have a right to be taught by competent teachers. It is the principal's responsibility to identify inefficient teachers. In consultation with such teachers, the principal should devise a program of improvement for each individual. Principals should also be aware of the difficulties experienced by staff and maintain a vigilant attitude towards their efficiency, assessing their staff on a regular basis. In some countries, this process is linked to the salary incremental scale, which is in accordance with international best practice. For example, the NSW Teachers' Handbook in Australia states that teachers:

> … shall be entitled to progress along or be maintained on the common incremental scale or the salary level for a promotions position after each 12 months of service, subject to the officer demonstrating by means of an annual review, continual efficiency in teaching practice, satisfactory performance, and professional growth. (Government of New South Wales 2000, section 6.1, 6)

Principals will provide the district government office with data on teachers' performance. The district office can deal with this information by ensuring that:

- a teacher in an improvement program does not progress along the common civil service salary incremental scale;
- principals either provide support to poorly performing teachers, with regular observation and counseling, or recommend action for their redeployment or discharge;
- principals support an annual review of all teachers through regular conferences with each one, classroom observation, review of teacher documentation (e.g., lesson planning, lesson material, student work), and student assessment records; and
- in implementing the annual review, principals take into account the level of experience of each teacher (so that less experienced teachers are given greater attention).

A principal should work collaboratively with teachers who do not receive positive assessments to develop a plan of action for improvement. This plan must commence with agreement on which areas of the teacher's work need attention. Examples of poor performance should be enumerated. To improve each deficiency, the principal must agree on the type of assistance to be given to the teacher. In many cases, this process will involve the input of other experienced staff members who work alongside the weaker teacher. A timeline and a series of targets should be set and meetings scheduled. The principal should conduct periodic conferences to discuss the teacher's progress towards successful completion of the plan. All actions taken and support given should be carefully documented. The teacher should be provided with copies of the documentation. In the event that redeployment or dismissal is considered, the decision must be justified with documented evidence.

A decision to place a teacher on an improvement plan usually occurs after a number of warnings. Effective implementation of such a plan is often time-consuming and difficult in terms of interpersonal relationships. However, the identification of the needs of such teachers and the provision of effective support for their improvement are critical roles of principals. Failure to deal with such a situation can negatively impact school morale, the learning of many other students, and school relationships with the local community.

Performance appraisal

The DP3 form is used throughout the Indonesian civil service, irrespective of division, and covers all categories of personnel. Using this form, supervisors assess personnel on eight elements: loyalty, work achievement, responsibility, compliance, honesty, cooperation, initiative, and leadership.[19] While the DP3 form embodies the requirements of the existing process, appraisal systems in schools and education systems usually adopt a more cyclical approach that is closely linked to school and teacher objectives. This process results in constructive supervision and improved results.

In many education systems, principals interview teachers at the beginning of each year and agree on a number of goals with them. The year's goals are listed on an appraisal record sheet to which both teacher and principal agree. A record is also made of any advice or support the school may be able to provide the teacher throughout the year to help him or her achieve these goals. Objectives may be set in a number of professional areas, including lesson presentation, curriculum preparation, community involvement, student welfare, or other areas of growth and improvement. The process may involve provisions for a good teacher to support a weaker teacher. A face-to-face progress review is held between the principal and the teacher at mid-year and the end of the year. The appraisal instrument provides space for progress to be recorded at these reviews. Following completion of the annual report on the teacher's achievements, goals can be set for the following year, which may include completion of activities from the previous year. The process as a whole establishes an appraisal cycle of goal setting, support, appraisal, reporting, and further goal setting.

Reports on a teacher's achievements can be used for a variety of purposes, including identification of areas for improvement. Because teacher goals are linked to a school's development plan, teacher achievements have an impact on the whole school. With practice, this beneficial cycle becomes embedded in the school's management structure. The appraisal cycle can also be linked to targeted professional development, as part of a continuous professional development strategy.

By receiving regular feedback on their performance, teachers gain insight into areas where they need improvement. Performance appraisals generate professional dialogue between teachers and their supervisors. This type of performance appraisal system can change the culture of a school, focusing teachers on self-appraisal and improvement. Teachers welcome recognition of their work and seek further opportunities to participate in the school. Weaker teachers may well appreciate the support and advice of an experienced teacher, particularly as this assistance will facilitate their career development. The process also creates commitment to quality in schools.

Accountability Issues

Accountability of principals

Many principals in Indonesia do not have adequate training or knowledge of modern school management. They are often selected on the basis of an examination or nominated by a district education officer; rarely are they selected through a formal merit process. They also receive little training for the task. The professional development of principals as school leaders often consists of little more than a briefing on policy documents issued by the district office. Most principals are poorly paid and have little authority over the teachers whom they supervise. Consequently, few adopt a pro-active supervisory and developmental role towards teaching staff.

The mandated system of school-based management makes the principal the key decision maker in Indonesian schools. As a result of Ministerial Regulation 44/2002, principals now play an effective role in a

19 Government Regulation No 10/1979 on Civil Servant (PNS) Performance Review defines the eight elements that form the basis of the form.

range of areas, including school planning, curriculum development, school finances and budgeting, staff management, and community involvement. In fact, the principal is the center of a devolved system of school-based management. Principals in Indonesia, however, need greater skills to manage these processes more effectively.

School principals should be selected on a merit basis following an assessment of their leadership skills. In order to ensure management quality and motivate commitment, the appointment of principals should be on a limited tenure (5-year) contractual basis, with renewal subject to a performance review. In addition, principal salaries should be significantly higher. The knowledge and skills of principals should also be improved through extensive district training courses, supported by mentoring in the workplace by school supervisors. Principals also need to be trained in techniques of classroom observation, as well as strategies for fostering community involvement and awareness of school activities and educational issues.

In time, school principals should take a more active role in the management of their schools in terms of the efficient and effective use of resources. Principals should also become instructional leaders who take a positive role in improving the quality of instruction at their schools, as reflected in improved student scores.

Accountability of teachers

Teachers must be accountable for the quality of their performance. Teacher accountability in Indonesia is monitored by the school principal, who reports to the district office responsible for teacher remuneration. Teachers are also directly accountable to the parents and community for the quality of the education that they provide. With the decentralization of the education system, greater responsibility for teacher management has been placed with the school principal and local district government officers, particularly the school supervisor. Increasingly, teacher management decisions have become school based. In general, local school officers have not been well equipped to accept this responsibility, including holding teachers accountable for the quality of their work. The Ministry of National Education is working to to rectify this position.

International experience shows that in order to improve the quality of teaching, individual teachers need to:

- become aware of specific weakness in their own practice; in most cases, this process involves building an awareness of not only what they do, but the mindset underlying their performance;
- gain an understanding of specific best practices, preferably through demonstration of such practices in an authentic setting; and
- be motivated to make necessary improvements.

In general, improving teacher performance requires a deeper change in motivation that cannot be achieved simply by changing material incentives. Such change comes about when teachers have high expectations, a shared sense of purpose, and above all, a collective belief in their common ability to make a difference in the education of the children whom they serve.

Accountability of school supervisors

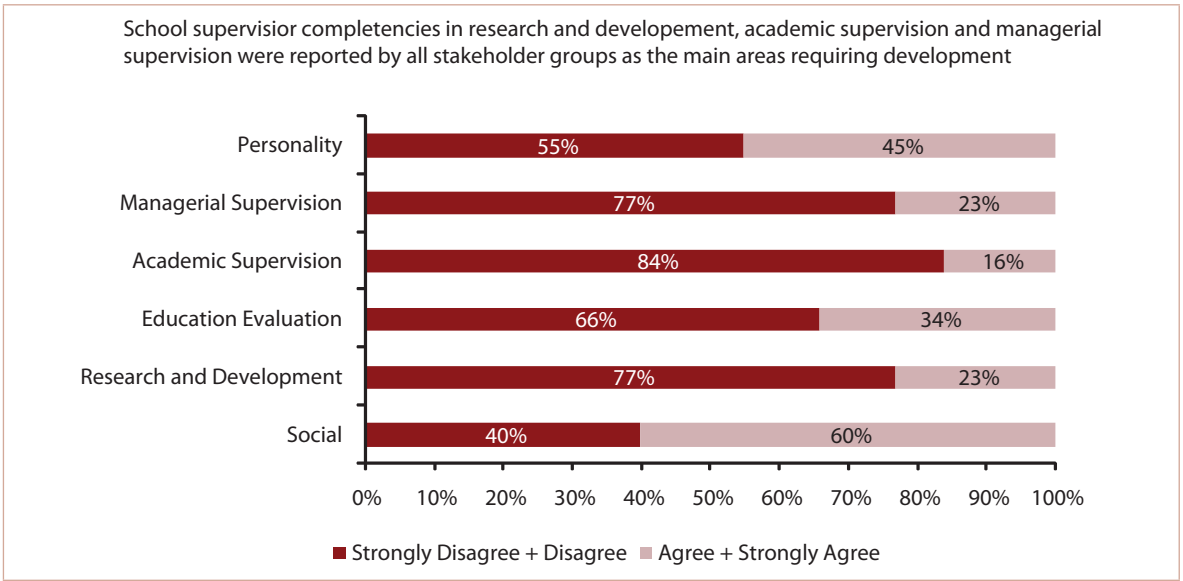
The school supervisor (*pengawas*) employed by the district offices visits schools to ensure the accountability of school principals and district government offices. Supervisors may have a range of tasks, including collecting and analyzing reports and providing information about curriculum implementation and school effectiveness to the district office. Unfortunately, following the decentralization of the education system, the nature of the supervisor role now varies widely from district to district and usually focuses more on administrative issues than on the improvement of teacher classroom performance. A recent review of the capacity of school supervisors concluded:

School principals, teachers, and school committee members regard the position of school supervisor as a low status position rather than an attractive career pathway. School supervisors reported that they have limited access to training and development opportunities and as a consequence, school principals and teachers often have prior knowledge of information or prior access to skill development. (Australia-Indonesia Basic Education Project 2007, 1)

School supervisors have the potential to be significant change agents. A well-trained school supervisor can be a significant change agent across a number of schools. Freed of many administrative tasks and equipped with the knowledge and skills of a modern instructional leader, a school supervisor can effectively mentor and coach principals. He/she can also arrange workshops and seminars for teachers in new teaching methodologies during visits to each school. This role is a significant one. It needs continual strengthening through training and the selection of capable officers with good qualifications and extensive experience.

A recent decree (Government of Indonesia 2007a) recognized the potential of school supervisors to change the face of Indonesian education. The decree defines the competencies required of school supervisors in six dimensions: personal competence, managerial supervision, academic supervision, education evaluation, research and development, and social. However, a recent review identified a large number of deficiencies in the knowledge and skills of school supervisors, which impact their ability to undertake their newly defined tasks (see figure 40).

Figure 40. Perceptions of Principals and Teachers on Supervisors' Competency Levels in Specific Skills



Source: Australia-Indonesia Basic Education Project (2007), 21.

Data from a recent review of the capacity of school supervisors (Australia-Indonesia Basic Education Project 2007) **indicates a generally low perception of school supervisor competencies**, as reported in interviews and focus group discussions. Clearly, this result points to a need for more professional development of school supervisors, a training gap that the Ministry of National Education claims to be addressing (Government of Indonesia 2009).

Indonesia has an important opportunity to replace more than 40 percent of all school supervisors over the next five years. It is an opportunity to create a new elite workforce of key personnel to drive improvements in the educational system. Data from the Directorate of Educational Personnel indicate that among 21,627 school supervisors in the government system, 35 percent will reach retirement age within the next five years. Among the 7,060 school supervisors within the Ministry of Religious Affairs, 67 percent will retire during the same period.

The selection of a new cadre of school supervisors should focus on changing the function and culture of their role to include:

- a greater role in direct classroom assessment of teachers, including the identification and support of poorly performing teachers;
- instructional leadership in teaching methodologies and pedagogy, including student-centered teaching, classroom management, and the measurement of student achievement;
- a leadership role in curriculum development and management;
- a significant role in the training of principals in educational management, including mentoring and coaching their decision making and supporting their school leadership;
- a thorough grounding in school-based management;
- commitment to facilitating elementary and secondary school teacher cluster management committees to provide continuous professional development programs; and,
- a key role in training new teachers in induction programs.

Accountability of districts for effective school and teacher management

The district office plays a key role in education management in Indonesia. The district office is often responsible for 2,000 or more schools in a number of subdistricts. It is responsible for the administration of education, including the selection and appointment of staff, the quality of student learning (including examination scores), teacher training programs, and the socialization and implementation of new policies (e.g., the certification process). Since the education system was decentralized, the willingness and ability of districts to take up their full responsibilities has varied widely. Engagement at the district level is one of the areas that needs most attention in order to improve the quality of education in Indonesia.

Teacher certification has placed important demands on the district office. Following the socialization of the certification process, districts must select teachers to fill their annual certification quota. They are also required to ensure that principals and school supervisors have the necessary skills to conduct teacher performance assessments. Other new responsibilities include monitoring the progress of candidate teachers who fail and need to complete the nine-day re-training program. To conduct teacher training upgrading, district offices also need to activate local teacher clusters and provide resources to facilitate their operation.

District education officers and school supervisors are also responsible for developing the leadership of school principals and holding them accountable for the performance of their teachers. In turn, there is a need to hold districts and schools accountable for the quality of the education that they provide. Data on the educational results of students needs to be regularly analyzed and strategies for increasing their achievement identified. The quality of teachers should be monitored to ensure improved performance and student achievement. Employment policy must be consistently applied to maintain realistic student-teacher ratios in individual schools. Teacher transfer policies must be implemented to ensure effective use of resources and the minimum teacher load of 24 period/hours per week must be enforced.

Policy Options

Photo by Hafid Alatas

This chapter focuses on policy options that may assist Indonesia in improving its education system, making it more effective and efficient. Its intention is to set out options for policy makers.

Balancing Teacher Supply and Demand

School staffing

School staffing formulas and policies related to teaching individual subjects must be adjusted to fit the realities of Indonesia's education system, which has an inordinately large proportion of small schools.

Specific staffing policy recommendations include:

Primary Schools

- Deploy teachers to schools on the basis of the number of students.
- Weight the staff allocation for small schools such that no school will have fewer than three teachers plus a principal.
- Staff regular primary schools on the basis of one teacher for approximately every 30 students, plus a principal (with a minimum of four teachers per school).
- Create multigrade classes when the combined enrollment in any three or more consecutive grades is 25 or less, or when combined enrollment in any two consecutive grades is 35 or less.

Secondary Schools

- Deploy teachers to schools on the basis of the number of students, with a target student-teacher ratio of 24:1 for junior secondary school and 22:1 for senior secondary school.
- Require teachers to teach a full workload in order to receive the professional certification allowance, but continue to allow part-time teaching by teachers who are willing to work without receiving the professional allowance.
- Accredit teachers to teach more than one subject, particularly in small schools where workloads are not sufficient for a single subject.

In addition, two key supporting policies are required to make the revised staffing norms effective:

- promotion of multigrade teaching in primary schools; and
- allowing dual- and multisubject teachers in secondary schools.

These policies are not simple. In fact, they require a significant number of drivers and necessary conditions, as well as the support of multiple stakeholders. The complexities of the policies are explored in detail in tables 16–19.

Table 16. Policy Exploration 1: Introduce Multigrade Teaching in Small Primary Schools, Particularly in Difficult-to-staff Areas

Drivers and necessary conditions:
o ***Retirement wave:*** A critical piece of this policy is to avoid a "flip-the-switch" approach and force schools to automatically become multigrade. Rather, it is recommended that schools use the natural process of teacher retirement to allow the system to evolve over time. Indonesia's massive retirement wave creates a unique opportunity to introduce multigrade teaching in a phased approach.
o ***District capacity:*** The districts will be influential in making a multigrade policy work, particularly since they are responsible for hiring and the distribution of resources. The district must have the capacity to develop a plan that (1) identifies schools that are understaffed, (2) identifies schools that are currently overstaffed, but can eventually become multigrade schools, and (3) includes a hiring and distribution plan to slowly implement multigrade teaching in a phased approach.
o ***Establishing a policy at the central government level*:** The new 2010–2014 Medium-term Development Plan for Education already specifies multigrade teaching as a key policy strategy. This strategy is an important signal that multigrade teaching is an endorsed and supported method for staffing small schools, so that other conditions can be met.
o ***Training of teachers*:** The worst implementation approach would be to simply convert teachers to a multigrade approach without training. This oversight would frustrate teachers and reduce rather than improve educational quality. Incumbent teachers must undergo intensive initial training in order to feel comfortable and confident in taking on the new teaching approach. Pre-service programs should also develop multigrade courses to produce teachers with specialized skills.
o ***Development of materials*:** One challenge for the multigrade teacher will be the preparation of multiple activities for various student levels in a class. Without support, this task could be overwhelming. The founder of the Colombia multigrade model, *Escuela Nueva,* stresses the importance of providing materials to multigrade teachers, including many pre-prepared activities, in order to reduce their preparation time and allow them to multitask and better manage their classroom time.
o ***Socialization of the benefits of multigrade teaching*:** Key stakeholders (e.g., parents, teachers, principals, and district officials) must be convinced of the benefits of multigrade teaching if it is to take hold and flourish.
o ***Piloting of multigrade models*:** Indonesia already has successful models of multigrade teaching. Sharing good practices from these models to establish new multigrade schools is an effective way to spread the approach.
o ***Bonuses for multigrade teachers*:** Although not critical, one way to incentivize the adoption of the new approach is to encourage and reward multigrade teachers.
o ***Support system:*** If teachers are converted to multigrade teaching, it would be invaluable to have them share their experiences with the new approach. Indonesia currently has a unique support system of teacher clusters that can provide a forum for support through (1) learning modules, (2) internet forums, (3) links to experts, and (4) cyclical, periodic training.

Table 17. Policy Exploration 1: Challenges of Multigrade Teaching

Challenges	Ways to address
1. Initial resistance from teachers and parents.	Socialization of benefits, with a particular stress on the fact that educational quality doesn't decrease. In fact, it can increase (use the example of Colombia). Demonstration models are critical so that a "seeing-is-believing" approach can be taken.
2. Many schools that should be multigrade are currently overstaffed.	Used a phased implementation approach, first working with understaffed schools (particularly in remote areas), then using the retirement wave to identify schools that could be converted.
3. Districts will need to support implementation of the policy.	Districts must be socialized on the benefits of multigrade teaching and be given technical assistance to develop the capacity to plan and forecast future teacher staffing needs for multigrade schools.
4. Schools have BOS funds that can be used to hire additional, and possibly unnecessary, teachers.	If schools are convinced of the benefits of multigrade teaching, they will hopefully not hire additional teachers. However, restrictions on the use of BOS funds (see "Links to other policies" below) may also be required, as will enforcement of the 24-period/hour rule.
5. Lack of a support system or other infrastructure for multigrade teaching.	Put in place a strategy to develop multigrade training materials, create "multigrade experts" through specialized training, and develop multigrade tracks in pre-service training.

Steps and targets	
Short term: 1. Develop central government policy to promote multigrade teaching and lay the foundation for developing a supportive environment. 2. Develop materials. 3. Create a core expert team. 4. Develop multigrade courses in the pre-service curriculum. 5. Socialize the benefits of multigrade teaching among key stakeholders, identify champions of multigrade teaching. 6. Establish demonstration models. 7. Strengthen district capacity to develop staffing strategies.	**Long term:** 1. Strictly enforce staffing norms based on student-teacher ratios. 2. Establish target primary school STR of 30:1.
Links to other policies	
• Modify staffing norms to eliminate the 9-teacher minimum in primary schools. • Restrict use of BOS funds for hiring teachers at school level. • Allocate DAU funds to districts.	

Box 2. Case Study: Implementing Multigrade Teaching in Small Schools

The district of Pacitan had continuing difficulties in staffing its many small schools in rural and remote areas. Many of the schools had a small number of students—often less than 10 students per grade. Staffing these schools with a teacher for each grade was inefficient and/or unfeasible. The solution, developed with assistance from the USAID Managing Basic Education (MBE) program, was to create 36 multigrade schools to make better use of staff and facilities.

What is multigrade teaching? A common misperception of multigrade teaching is that it simply means teaching two classes in shifts, or teaching the classes at the same time, but separating students by grade and teaching different topics to each (with the teacher trying to "run" from one classroom to the next). In fact, multigrade teaching means making a program for the combined class, using different activities that cater to different levels of ability. For example, if there are 6 students in grade 1 and 10 students in grade 2, all 16 students would be together in the same classroom in a multigrade setting, but when necessary, students from the two grades would perform activities suited to their respective levels, particularly in skills areas such as mathematics and literacy-related subjects. Other areas, such as culture and arts-based subjects, may not require such differentiation.

Does multigrade teaching sacrifice educational quality? One concern about multigrade teaching is that educational quality might be sacrificed. In fact, if properly implemented, multigrade teaching has been found to be as or even more effective than single-grade teaching in terms of increasing student learning outcomes.

Training for principals and teachers is essential when implementing multigrade teaching. Key training areas include: (1) structuring and organizing multigrade schools; (2) organizing and planning multigrade classrooms; and (3) using appropriate teaching strategies for multigrade classrooms—traditional teaching methods of lecturing and rote learning are not suitable. Effective multigrade teaching requires that the teacher use a more participatory approach, with students actively working on learning tasks.

As the Pacitan district discovered, creating a support system helps ensure the success of multigrade schools. Examples include: (1) creating special multigrade facilitators; (2) holding special meetings of teacher clusters for multigrade schools, supported by district facilitators; (3) involving not only teachers, but also principals and supervisors in multigrade teacher training, so that the concepts are understood by all stakeholders; (4) arranging field visits between multigrade schools so that teachers can see various methods of multigrade teaching in action; (5) providing additional learning materials and special facilities, such as learning centers, so students have a place to go and materials to use when they have finished their assigned work or during group activities.

The district of Pacitan is addressing its teacher management challenges in small schools with an approach that is efficient and effective. And students are not the only ones benefiting. Teachers have found that it is not as difficult to implement multigrade concepts as they first imagined and that it makes their teaching tasks easier and more rewarding. Teachers who were overworked by attempting to teach each grade in separate shifts are now able to use their time more effectively.

Source: Information gathered through interviews and review of USAID documentation on the MBE program. Further information can be found on the USIAID Indonesia Managing Basic Education website, http://www.mbeproject.net/ (accessed November 2009).

Table 18. Policy Exploration 2: Allow Dual- and Multisubject Teachers in Secondary Schools

Drivers and necessary conditions:
o ***Policy modification at the central level*:** Current law stipulates that teachers can only teach one subject in secondary schools. This policy would need to be revised in order to allow for dual- and multisubject teachers. o ***Accreditation process:*** The original intent of the policy was to have teachers focus on only one subject as Indonesia has a significant "mismatch" between existing teachers and the demand for subjects in which these teachers are qualified. This practice can be detrimental to educational quality. Training of dual- and multisubject teachers would assist in eliminating this type of mismatch. Teachers should be required to demonstrate competency in each subject area through an accreditation process. Accreditation could be done through the current certification process, which requires teachers to provide a portfolio, but should also be accompanied by a competency exam. This exam could be managed by the Centre of Research and Development for Assessment Systems (PUSPENDIK) or the Directorate General for Quality Improvement of Teacher and Education Personnel (PMPTK). o ***Training of teachers*:** If teachers are to be encouraged to teach more than one subject, training methods should be made available to. • ***incumbent teachers:*** The already existing distance-learning training option provides the necessary infrastructure. Some courses could be tailored to specifically focus on accrediting teachers in a specific subject. For example, there is a shortage of computer teachers. Creating courses that would assist existing teachers to master the fundamentals of computers would help address this shortage. Another method of training could be through teacher clusters (the KKG and MGMP), where teachers could work together on modules that would allow them to master a subject. • ***students in pre-service training:*** The curriculum for this training could be tailored to allow and even encourage teachers to pursue a major and minor subject. o ***Bonus allowance*:** Teachers in most countries are rewarded for becoming dual- or multisubject teachers. Providing a bonus allowance would encourage teachers to master more than one subject. The bonus generally applies to all subjects. Alternatively, it could be used to encourage skills in subjects for which there is a teacher shortage. o ***System tracking*:** The PMPTK needs to revise its database to track the subject specialties of teachers. o ***Credits or competency demonstration?*** One question is whether to base accreditation on credits awarded for completing modules and/or courses or on competency, as measured by an exam.

Table 19. Exploration 2: Challenges of Dual- and Multisubject Teachers in Secondary Schools

Challenges	Ways to address
1. Resistance by parliament and the teachers' association to assessing teacher proficiency through competency exams.	While certification is a requirement for all teachers, assessment for accreditation in a second subject should be voluntary, reducing resistance.
2. Expense and logistics of establishing a teacher accreditation system.	The current certification process has established a foundation for assessing teachers and could be built upon. The cost of undergoing an assessment should be borne by a teacher (if the teacher is then able to receive additional pay), the school (which will benefit by having a teacher who can cover more than one subject), or the district (which will benefit by having a more flexible workforce).
3. Institutional resistance by universities to "accreditation" through a competency exam.	If the option of accrediting teachers through a competency exam is followed, it would most likely run into resistance from universities. In order to address this problem, universities could be involved in developing the exam or an independent accreditation body could be established.
4. Revising the curriculum of pre-service training.	Work with the LPTKs on curriculum revision; use international practices of multisubject teaching for guidance.
5. Need to strengthen the support system for incumbent teachers to upgrade their skills.	Build on distance-learning infrastructure (Open University) and the new distance-learning programs being developed by other universities. Develop modules to be used in teacher clusters.

Steps and targets	
Short term:	**Long term:**
1. Revise regulations that prohibit teaching more than one subject. 2. Establish on accreditation mechanism. 3. Revise the pre-service curriculum to allow and encourage a major and minor. 4. Create incentives that encourage teachers to teach multiple subjects. 5. Develop courses and/or modules to facilitate the upgrading of teacher skills.	1. Create an independent accreditation body that is integrated into the certification process. 2. Reward multisubject teachers in the progression and promotion system. 3. Restructure requirements for teacher certification to include two subjects.

Other policies that affect staffing

Encourage the establishment of larger schools. Past policies of giving grants to each individual school, regardless of the number of students, encouraged the formation of small schools. Larger schools provide economies of scale and make staffing much easier and more efficient. In rural and remote areas, however, larger schools simply may not be possible because school size is driven by village populations. Yet in urban areas there are significant opportunities for increased economies of scale.

Enforce the 24-period/hour rule or revise the certification allowance for part-time teachers. Teachers have very low workloads in Indonesian schools, particularly in secondary schools, where 80 percent of teachers do not fulfill the minimum workload required to qualify for the professional allowance. There is certainly nothing

wrong with part-time teachers. However, it is reasonable to expect teachers who receive the large certification allowance to work full-time.

MONE is currently facing political pressure regarding this rule. Teachers who work in overstaffed schools are unhappy because they aren't able to meet the requirement. There are cases of some teachers "selling" their class hours to other teachers so that the latter meet the 24-period/hour requirement. The PMPTK is finding it difficult to monitor individual teaching hours in order to enforce the rule. Such negative consequences have created difficulties for MONE in the short term. After an adjustment period, however, it is likely that effective implementation will lead to improved efficiencies.

One alternative would be to allow certified teachers to teach part-time, but to adjust their professional allowance accordingly. For example, a teacher working 24 period/hours would receive the full allowance, while a teacher working 12 period/hours would receive only half the allowance. Unfortunately, however, complex policies generally fail in implementation. This was the main reason for not attempting to vary the amount of the allowance in the first place. Varying the allowance based on hours worked would require an accurate, up-to-date record of hours worked by each individual teacher. PMPTK's new teacher database (NUPTK) is a strong step towards capturing this data, but it currently presents information only for the previous year. The database is now online and in theory could be updated by school principals or district education officials in real time, but the system for doing so has not yet been fully established.

Develop capacity in the area of teacher management at both the district and school level. Because of decentralization and the shift of responsibilities to the local level, effective management of teachers will ultimately be driven by the capacity of districts and schools. Districts require support in how to hire and manage teachers, including the forecasting of teacher needs, the optimal placement and distribution of teachers, and working with schools to manage teachers. Best practice examples from districts such as Gorontalo and Tanah Datar provide models that demonstrate the power of effective teacher management. Schools need training in school-based management, including teacher management, in order to harness their increased role in the hiring and managing of teachers.

Take advantage of the retirement wave. The retirement wave, in which over 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 retire from schools that are already overstaffed should not be replaced. This step is a natural and relatively painless method for dealing with Indonesia's problems of supply and distribution, but will require careful forecasting of teacher needs, including by subject area. It will also require careful coordination with districts and schools, a process that ties into the capacity development proposal mentioned above.

Development of new teachers (supply)

The increased remuneration of teachers has generated a lot of enthusiasm for the teaching profession among students entering college. Any policy related to the development of the teaching force must take advantage of this increased interest. At the same time, there is currently an oversupply of teachers in the education system. If the system doesn't have the capacity to absorb new teachers, it would be wise to at least partially control the intake of candidates by pre-service programs. Currently such controls are minimal.

The success of the latest teacher law and certification process will ultimately be determined by their impact on the quality of new teachers who come into the profession. In this sense, Indonesia is now at a critical point in reforming its teacher training programs. The effectiveness of pre-service training can be improved through: (1) effective screening of teacher trainees; (2) relevant training content and modality delivery to ensure closer links between university courses and practical classroom teaching in schools; and (3) collaboration with schools to help new teachers adapt well to their new jobs.

Selection of teacher trainees should occur at an early stage, using adequate screening tools and processes. The most rigorous selection should occur before candidate teachers enter postgraduate teacher training. Scholarships can be used to attract high-quality entrants, with a commitment on their part to be deployed to remote and disadvantaged schools.

Box 3. A Model of District Teacher Management

The district of Gorontalo provides an interesting case study of how improvements in teacher management can lead to drastic improvements in educational quality in a short period of time. The district Education Office realized that its current distribution of teachers was inefficient and undertook an extensive analysis to determine where there was an undersupply and oversupply of teachers. As a result, 634 of 5,000 teachers (13 percent) were redeployed.

Many new policies were introduced to support the initiative, including a "deployment before employment" policy. The policy involved an eight-year binding contract between a candidate teacher and the government. The contract specifies that only teachers who agree to be posted in a school requiring their qualifications will be employed and commits teachers to being deployed at government-designated schools. Special incentives were given to remote schools and multigrade teaching was introduced in schools with fewer than 90 students. School mergers were also affected for certain schools that had small numbers of students. Finally, the Gorontalo district developed a systematic teacher distribution initiative that involved building consensus among stakeholders.

Source: Firdaus (2008).

Pre-service training must respond to the staffing needs of schools. A regular tracer study of the career paths of teacher training institute (LPTK) graduates should be carried out to better link coursework and teaching skills with success in real classrooms. Emphasis should also to be placed on the role of LPTKs as training centers (or "clinics") that provide continuous professional development for in-service teachers, thus ensuring that the quality of the teaching workforce is maintained and improved through up-to-date teaching methodologies and skills building. As "after-sales" service centers, the LPTKs could also have closer professional links to schools through district government offices and local teacher networks.

Strengthening the curriculum and delivery of primary school teacher training (the S1 or PGSD—equivalent of a Bachelor's degree), as well as post-degree teacher professional training (PPG), is the key to qualified teachers in the future. Efforts should focus on restructuring current diploma training programs for primary schools teachers by strengthening subject and pedagogical knowledge, thus laying a solid foundation for post-degree professional training that focuses on practical teaching skills. Reforms should concentrate in particular on introducing knowledge and skills that would significantly benefit the quality of teaching and learning over the long term, such as multigrade teaching. The reform process is a critical opportunity for selecting high-caliber candidates and providing them essential teaching skills through coaching and classroom practice. New practices, such as the requirement that secondary teachers be able to teach a minimum of two subjects, together with group- and student-centered teaching and other proven new teaching techniques, can be introduced during this period.

Hiring of teachers (demand)

In many ways, the trend towards hiring more teachers at the district and school levels is positive. This process is more flexible in the case of non-civil servant teachers and better addresses actual needs, since schools and local governments know best what their needs are. However, the problem is that central government pays the salaries of civil servants through the DAU allocation, as well as the professional allowances of all teachers—both public and private. The hiring and payment of teachers must therefore be realigned so that the true costs of hiring an additional teacher are considered at the time of hire. Options for addressing these existing market failures include:

- Basing the transfer of central government funds to districts (DAU) on the student population of each district. Districts would then be responsible for both hiring and paying teachers.
- Managing the expenditure of BOS funds on the hiring of new teachers by:
    - *In the short-term*: minimizing the amount of BOS funds that can be used to hire and pay teachers at the school level;
    - *In the long-term:* incorporating teacher salary amounts into BOS school allocations and then allowing schools to hire and pay the full salary of all teachers, including bonuses.
- If the central government continues to pay teachers' functional and professional allowances, it may be necessary to control which teachers become eligible for them. In other words, not all school-hired teachers will automatically receive this bonus, a policy change that might cause resentment and resistance.

Teacher Quality and Support

Indonesia has made significant strides in its teacher reform effort. However, reform is an evolutionary process and successes must be built on while deficiencies are addressed. The following policy options focus on establishing a quality assurance framework that would clearly define the roles and responsibilities of key stakeholders, as well as provide a foundation for future reforms.

Quality assurance framework: The foundation of reform

Overall teacher management needs an effective quality assurance system that has well-defined functions for each stakeholder. Such a system should also employ specific strategies as well as instruments that measure and hold individuals and institutions accountable for both how well teachers perform and students learn. In general, a quality assurance framework has the following key aspects: (1) performance standards; (2) performance assessments; (3) performance reporting; (4) impact evaluations of policies and programs; (5) operational requirements; (6) adequate and equitable resources; (7) autonomy, intervention, and support; and (8) accountability and consequences for poor performance. Currently, the teacher management effort in Indonesia is still largely based on standards, requirements, and, to some extent, teacher certification; the other aspects have not yet received enough attention.

How the framework is defined will largely depend on whether or not Indonesia decides in favor of a centralized or decentralized education system. The policy since 2001 has been decentralization of the education system. Many recent steps have moved the system in this direction, including the BOS allocation to schools and the greater role of districts in selecting and managing civil servant teachers. Still, in many respects Indonesia is straddling two systems: one that is centralized and one that is decentralized. The proposed framework assumes that Indonesia continues to move towards decentralization and that the central government continues to play an important role in quality assurance and standards, but that the schools and districts are at the center of teacher management.

Schools must be put at the center of the debate in order to address deficiencies in teacher quality assurance. The school is the front line—the place where the demand for teachers is generated, a teacher's performance can be observed, and teaching and learning results can be measured. In many countries, giving schools the power to hire and fire teachers has ultimately proved effective in improving teacher performance and accountability. However, a comprehensive quality assurance framework needs to be put in place in Indonesia to support effective decentralized decision making. The principal reforms needed to institute such a framework are summarized in table 20.

Table 20. Quality Assurance Framework: Future Reform Agenda

	Schools	Local government	Central government	Teacher Training Institutes
Performance standards			Establish what students should know and are able to do at the end of each grade Establish a teacher career ladder, including what they should know and be able to teach at each level	Design and improve curriculum for teacher training
Performance assessments	Assess teacher performance according to standards	Supervisors support schools in assessments	Design instruments and methodologies; develop a framework for diagnosis and accountability	Select high-caliber trainees and prepare qualified teachers
Performance reporting	Distribute assessment reports to local government and communities	Make teacher performance data part of EMIS	Collect national teacher data for policy and research	
Impact evaluations			Continue to investigate whether, how, and at what cost teacher certification works	
Operational requirements			Revise staffing norms; formalize multigrade and multisubject teaching	
Adequate and equitable resources	Receive resources to hire teachers	Allocate grants to schools for hiring and managing teachers	Revise DAU formula	
Autonomy, intervention, and support	Receive power to hire and manage teachers	Provide support to low-performance schools to improve	Support low-performance districts through focused technical assistance	
Accountability and consequences	Reward and sanction teacher performance	Reward and sanction school performance	Civil service reform to make teachers employees of schools	Answer school and local government needs for good teachers

"School power": The key to holding teachers accountable

The long-term solution for improving teacher management is to move the power to hire and fire teachers to schools. BOS funding has already begun the process of school-hired teachers, even though salaries are not explicitly an eligible expenditure item according to official BOS guidelines. The BOS allocation could be expanded in the future to include both a salary and non-salary component, based on a school's need. Even though a majority of public schools does not presently have much experience in managing teachers, they can learn much from the private schools which represent a large share of basic education service provision in Indonesia.

School-based teacher management requires the strong professional leadership of the principal, under the oversight of a school committee. As a result of Ministerial Regulation 44/2002, principals are expected to provide leadership in a range of areas, including school planning, curriculum development, school financing and budgeting, staff management, and community involvement. Consequently, principals in Indonesia need to develop greater skills to play their crucial role in the overall quality assurance framework. This framework requires them to help manage teacher induction, performance assessments, and appraisals; the mentoring, promoting, and sanctioning of teachers; the dissemination of teacher performance information to the local community and local government, and, finally, to be accountable for overall school performance.

Local government: Differentiated support to schools

Local governments in Indonesia already have a mandate to play a role in setting district education policy, including sector planning, financing, curriculum development, infrastructure and facilities development, management of educational personnel, and quality assurance (PP No. 38/2007).

A special school staff monitoring unit (SSMU) could be established in districts to support the continuous re-assessment of teacher requirements. This unit should, among other tasks, establish the teacher staffing needs of each school, review and update school- and district-level STRs, monitor student enrollment trends and projections of teacher demand, review teacher workloads, and liaise with the LPTKs about teacher demand, especially regarding subject specialist needs. This unit could also have an audit role that is, it could monitor the qualifications of teachers employed at schools, particularly to avoid mismatches and overstaffing.

A key challenge for local governments is providing differentiated support to schools. A large proportion of available resources will need to be spent on the lowest-performing, or neediest, schools, with the district's strong support and close oversight. Existing disparities within districts are huge in terms of learning outcomes, school facilities, and teacher quality, as well as students' socioeconomic backgrounds. Low-performing or needy schools must be targeted in order to obtain additional support from the districts, in alignment with each district's obligation to assist schools in meeting the minimum educational service standard. Top-down assignment of teachers by district is likely to continue in the medium term in these schools in order to ensure teacher quality and availability.

Central government: Fundamental institutional and policy reforms

Giving schools more power in teacher management means a wider scope of institutional reform, that is, deepening decentralization, letting go of remaining nominal central control, and, most importantly, establishing an enabling regulatory and policy framework to provide guidance and support to school-level decision making.

First, the formula for the General Allocation Fund (DAU) needs to be revised, followed by an abolishment of the central BKN "quota" system. Revision of the DAU should remove the implicit principle of "the more one hires, the more budget allocation one gets." The teacher salary component of the DAU should be given to districts

as "block grants" proportional to each district's school-age population. Remote and disadvantaged districts can be allocated additional funds for their specialized needs, including teacher incentives. In addition, the teacher professional allowance should become part of the DAU and thus go through the districts to the schools.

In the long run, the teaching profession should be delinked from the civil service, with a separate professional performance appraisal system and career track established for teachers. One key performance benchmark of the new performance appraisal system should be student learning outcomes. The system should also stipulate the major steps for entering the profession (probation and induction), professional development (progression from beginner to master teacher), and performance appraisal (reward or retraining). Implementation of such a system will require regular reporting on the effectiveness of all teachers; identification of failing teachers and the adoption of practices for their improvement; and the definition of mechanisms for the management of underperforming teachers and the reward of outstanding teachers.

System improvements

Accompanying the quality framework outlined above, specific policy steps in the area of teacher quality, management, and support should . . .

- Enhance teacher certification:
  - Use the certification process to identify good, competent teachers and weed out incompetent ones. Currently the pass rate for new teachers is nearly 100 percent. If higher standards were set, it would not only ensure higher-quality teachers, it would also reduce costs related to their professional allowances.
  - Revise the instruments of certification. The portfolio review is an insufficient mechanism for identifying good and competent teachers; additional activities, such as an impartial subject matter competency test, are required.
  - Require periodic re-certification. Certification should not be a one-time process, but rather require that teachers either undergo periodic re-certification or demonstrate good performance in order to maintain certification.
  - Involve professional educators in the schools. In particular, certification should involve school principals in the assessment of the effectiveness of teachers in his or her workplace.
- Link performance incentives to student outcomes.
- Use teacher induction programs during the probationary year to improve the effectiveness of beginning teachers.
- Implement an effective teacher performance appraisal system. This system should involve a policy that requires annual confirmation of the efficiency of all school staff.
- Improve the accountability and performance of teachers through:
  - regular reporting on the efficiency of all teachers;
  - identification of failing teachers and the adoption of programs for their improvement; and
  - progression and promotion based on merit, linking salary increments to teacher performance, and ensuring that the most effective teachers are promoted to management roles.

Improve teachers' in-service support, performance incentives, and professional development opportunities. Teachers presently teach few hours. They often lack knowledge of the material they teach and do not engage in appropriate approaches to learning. One reason for these conditions is lack of constructive feedback and mentoring in an authentic setting. Investments in teacher training will be wasted without effective systems to support the continuous learning and development of teachers.

Development of standards for teachers and principals by the National Education Standards Agency (BSNP) will provide a significant foundation for rigorous supervision and support of teachers. However, these standards must be verified in practice. Guidelines also need to developed for principals and head teachers to help them in their roles as instructional leaders of individual schools.

Address the weak and/or missing elements of the emerging system for continuous teacher learning and development by:

- providing guidance, training, and support to principals and senior teachers to enable them to assess teachers and provide feedback and incentives that help teachers improve their performance;
- focusing on learning outcomes in the assessment of teacher performance, including the use tools that incorporate learning diagnostics for the children whom they teach;
- selecting principals on the basis of merit (instead of experience) and giving them increased input into teacher placement and performance evaluation;
- instituting systematic processes for identifying unsatisfactory teachers and defining procedures to either help them improve their performance or remove them if they continue to fail after intensive support; and,
- introducing systemic monitoring of the level and quality of learning outcomes, with associated mechanisms to act upon findings.

Improving the Effectiveness of the Teacher Law as an Instrument for Teacher Quality Improvement

The Teacher Law provides a sound framework for the improvement of teacher quality in Indonesia. There are a number of areas where its scope can be extended.

- The certification process itself has been left entirely to the university sector. In the future, all teachers seeking entry into the teaching service must already be certified. The certification process does not, however, involve the employer in determining the required standard for employees. Professional educators in the schools, in particular, school principals, should be involved in assessing the effectiveness of teachers in the workplace as part of the process. Thus, certification should take place after a principal or school supervisor has written a report on a teacher at the end of their probationary year. Certification would then become a partnership between the university and the employer.
- The law does not provide for a progression or promotion system based on teacher profiles (or levels), with merit barriers and a differential salary scale. Such a system is common in other countries and provides a predictable career path for teachers, based on continuous improvement of their skills and rewarded by financial incentives linked to promotion.
- The original concept of mandating a minimum amount of professional development (6 hours per year) in order to maintain certification has been removed from the relevant regulation.
- The law provides no effective mechanism for managing underperforming teachers, nor does it provide a new performance appraisal scheme for teachers to replace the inadequate generic DP3 form common to the rest of the civil service. Such a scheme would enable school principals to link teacher performance goals to both a school's performance goals and a teacher's own personal improvement goals. Furthermore, there is no requirement that teachers participate in an induction training program as part of their probationary year, with a report on their performance at the end of the year.

Teacher induction during the probationary year

Well-planned induction programs for beginning teachers have now become common in overseas countries. Such programs usually consist of four elements:

(1) a brief orientation to the local school community;

(2) an instructional program of workshops, seminars, in-service training, meetings, and external training activities conducted over the full year;

(3) appointment of a mentor or experienced teacher to offer guidance and support on a regular, ongoing basis; and

(4) a classroom assessment of the beginning teacher at the end of the year, with a recommendation for confirmation of his or her appointment.

An induction program can be undertaken by beginning teachers as a requirement of their probationary year, at the end of which they should be evaluated by a school supervisor or principal to determine whether or not they meet the required teaching standard. The strength of such programs is the opportunity that they provide young teachers to undertake workplace learning in the real world, as a complement to the more academic education of teacher training institutes.

The probationary period could be used more effectively to control the quality of school employees. The 2005 Teacher Law provides for termination of staff during a probationary period if their work is found unsatisfactory. In practice, however, confirmation of permanency and progression within the Indonesian civil service are virtually automatic.

Teacher performance appraisal

International best practice links teacher performance appraisals to school and individual objectives. This type of appraisal enables more constructive supervision of teachers and produces better results than the current DP3 form used in the Indonesian civil service. By linking an annual assessment of a teacher's performance with objectives and goals agreed with the teacher at the beginning of each year, a more effective dynamic for continuous, self-sustained improvement becomes established.

The cycle commences each year when the principal interviews teachers and they agree on a number of goals that the teacher and the school has in a range of areas. The year's goals are negotiated and recorded on an appraisal record sheet signed by both teacher and principal. A record is also made of any advice or support that the school may be able to provide throughout the year to assist the teacher achieve these goals.

Underperforming teachers

Principals are expected to provide teacher performance data to the district education office. The district office can deal with this information by ensuring that:

- teachers in an improvement program don't progress along the common civil service salary incremental scale;
- principals provide support to poorly performing teachers, with regular observation and counseling, or recommend action for their redeployment or discharge;
- principals support an annual review of all teachers through regular conferences with each teacher, classroom observation, review of documentation (e.g., lesson plans, lesson materials, and student work), and student assessment records; and

- when implementing an annual review, principals take into account the level of experience of each teacher so that less experienced teachers are given greater attention.

Principals should work collaboratively with underperforming teachers to develop a plan of action for improvement. Such a plan must commence with agreement on the areas in which the teacher's work needs attention. Examples of poor performance should be enumerated. To improve each deficiency, the principal must agree on the type of assistance to be given. In many cases, this will involve the input of other experienced staff members, who will work alongside a weaker teacher. A timeline and a series of targets should be set and meetings scheduled. Principals should then conduct periodic conferences to discuss teachers' progress towards successful completion of their plans. All actions taken and support given should be carefully documented, with the teacher provided copies of all documentation. In the event that redeployment or dismissal is considered, the decision must be justified with documented evidence.

A decision to place a teacher on an improvement plan will usually occur after a number of warnings. Effective implementation of such a plan is often time-consuming and difficult on interpersonal relationships. However, the identification of the needs of underperforming teachers and the provision of effective support for their improvement is a critical role of principals. Failure to deal with such situations can negatively impact school morale, the learning of many students, and school relationships with the local community.

Progression and promotion based on merit

At present, progress in a teaching career is marked by series of small salary increments with few merit barriers. There are very few executive positions within schools to which good teachers can aspire. Preliminary work on a set of four teacher profiles has been completed in Indonesia. This work now needs further support and extension. These profiles are critical for the development of a career structure for teachers, along with a mechanism for promoting the best teachers into school management positions. Such a framework will provide enhanced career opportunities for teachers within a professional, merit-based structure and act as an incentive for teachers to sustain and improve their performance. Development of criteria for the gradation of teaching levels (with intermediate steps)—or profiles—will encourage teachers to seek professional growth, compete for senor positions, and receive salary increases.

Policy Recommendations: Conclusion

Indonesia has embarked on an ambitious teacher reform effort and many positive steps have already been taken. As this report highlights, however, new challenges have arisen and numerous steps remain before the goals of this reform are met. The policies pursued at this critical juncture of the reform process will define the future teacher workforce and shape the quality of the education system as a whole. The budget implications of this reform cannot be overstated, as system inefficiencies threaten to crowd out other critical education programs. The right steps, especially creating a teacher appraisal framework and elaborating a merit-based system of progression and promotion, will allow Indonesia to create a high-quality, motivated teacher workforce that works in an efficient, effective education system, benefiting the youth of Indonesia and the country as a whole for years to come.

Table 21. Teacher Supply and Demand: Policy Summary Table

POLICY AREA 1: Improving the efficiency of school staffing	
1.1	Staffing policy: Deploy teachers to schools on the basis of the number of students rather than the number of classes.
1.2	Create a policy and support structure to promote the conversion to multigrade teaching at the primary level.
1.3	Create a policy and supporting mechanisms to allow dual- (or multiple-) subject teachers in secondary schools, where teachers have a major and, as necessary, a minor subject.
POLICY AREA 2: Increasing the teacher management capacity of districts and schools	
2.1	Provide districts a structured program on capacity development.
2.2	Implement annual local capacity assessments.
2.3	Conduct capacity development for school-based management, including teacher management.
POLICY AREA 3: Managing the intake and distribution of teachers	
3.1	Establish mechanisms to enforce the minimum workload of 24-period/hours in order to influence the supply of teachers toward understaffed schools. OR, if political pressure makes this policy infeasible, base the professional allowance on the number of hours worked, rather than the current policy of paying all teachers the equivalent of a full-time base salary upon certification.
3.2	Revise the DAU to eliminate the perverse incentive for districts to over-request teachers.
3.3	Have districts cover some of the teacher allowance costs, such as the functional allowance, so that they take on part of the financial burden of hiring additional teachers.
3.4	Manage the expenditure of BOS funding on teachers by: • *in the short-term*: minimizing the amount of BOS funds that can be used for hiring teachers at the school level; • *in the long-term:* incorporating teacher salaries into school BOS allocations and requiring schools to hire teachers and pay their full salaries, including bonuses.
3.5	Develop a strategy and supporting policies to take advantage of the retirement wave.
3.6	In the long term, perhaps move towards a system where civil servant teacher positions are abolished and a new system is instead elaborated for the teaching force.

Table 22. Teacher Quality and Support: Policy Summary Table

POLICY AREA 1: Improving the accountability and performance of teachers	
1.1	Establish policy for regular reporting on the efficiency of all teachers.
1.2	Establish policy to identify and manage underperforming teachers.
1.3	Establish policy to require all new teachers to demonstrate effectiveness in the classroom before they are made permanent employees.
1.4	Establish policy to select teachers on merit.
1.5	Establish policy to ensure that teacher progression and promotion are determined by a transparent merit process.
POLICY AREA 2: Improving the effectiveness of pre-service training for teachers	
2.1	Establish policy to ensure closer links between university courses and practical classroom teaching.
2.2	Establish policy to adopt strategies that effectively screen teacher trainees on entry, during, and following their exit from university courses.
2.3	Establish policy to ensure that university teaching incorporates best-practice, active learning techniques identified in the literature on effective schools.
2.4	Establish policy to develop effective strategies for distance education of teachers.
POLICY AREA 3: Improving the effectiveness of school supervisors	
3.1	Establish policy to ensure that all new school supervisors are selected on merit.
3.2	Establish policy to ensure that school supervisors receive induction training and continuous professional development, based on the competencies defined in Decree 12/2007.
3.3	Establish policy to ensure that school supervisors adopt a leadership role in teaching in district schools.
3.4	Establish policy to ensure that school supervisors act as mentors to principals in a school-based management model.
3.5	Establish policy to ensure that school supervisors are involved in the induction and classroom assessment of beginning teachers.
POLICY AREA 4: Improving the effectiveness of school principals	
4.1	Establish policy to ensure that all school principals are selected by a transparent, competitive merit process.
4.2	Establish policy to ensure that principals are appointed on a five-year contract basis, with renewal of appointments based on an external performance review.
4.3	Establish policy to ensure that all principals receive induction training and continuous professional development, based on the competencies defined in Decree 13/2007.
4.4	Establish policy to ensure that principals take an active role in community affairs and promote school activities in their respective communities.
4.5	Establish policy to ensure that principals take an active role in instructional leadership and improving the quality of teachers' classroom performance.
POLICY AREA 5: Improving career paths and remuneration incentives for teachers	
5.1	Establish policy to establish a ladder of four gradated teaching levels (profiles) as a progression and promotion career pathway.

5.2	Establish policy to create merit barriers associated with employment levels and salary incentives.
5.3	Establish policy to link career stages to accredited continuous professional development activities available from the LPTKs and other providers.
POLICY AREA 6: Linking salary increments and teacher performance	
6.1	Establish policy to develop a new performance appraisal scheme for teachers, linked to regular salary increments.
POLICY AREA 7: Extending the scope of the Teacher Law of 2005 and improving the implementation of teacher certification	
7.1	Establish policy to amend the Teacher Law to include assessment of beginning teachers by principals at the end of the teachers' probationary year as part of the teacher certification process.
7.2	Establish policy to phase in the payment of the professional allowance to underqualified teachers as they reach benchmarks in the training required to upgrade their qualifications.

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