Teacher Reform in Indonesia

The Role of Politics and Evidence in Policy Making

Executive Summary

Mae Chu Chang, Sheldon Shaeffer, Samer Al-Samarrai, Andrew B. Ragatz, Joppe de Ree, and Ritchie Stevenson
Based on publication:
1. Introduction

With close to three million teachers, Indonesia has one of the largest and most diverse teacher workforces in the world. The evolving nature of its education system and the increasingly complex challenges facing individual teachers and the teaching profession as a whole are of immense importance to the nation’s future development. However, in spite of greater economic and financial stability and a decrease in the percentage of the population living in poverty from 27% in 1999 to below 16% in 2007, Indonesia has continued to underperform compared to its neighbors in terms of access to basic services. In particular, the quality of education has been of serious concern. In the 2011 TIMSS standardized test in mathematics its 8th grade students ranked 38th out of 42 countries, and in the PISA test which looks at how well 15 year olds are prepared for life, Indonesia ranked below its major economic competitors. In recent years, a groundswell of public support in favor of improving educational quality led to revisions to the Constitution in 2003 that now require 20% of the national budget to be directed to education.

Much of the focus has turned to the quality of Indonesian teachers: their selection, training, management and motivation and incentives (including financial reward). In 2005 this was recognized in the comprehensive Teacher and Lecturer Law (UU14/2005) that set in place a radical and comprehensive program to reform the nation’s education management and development process to raise the quality of teachers. This publication examines the reforms currently being undertaken, and focuses on the nature of the teaching profession before and after the Teacher Law. It analyses the educational and political context of the law, and the structures, strategies, and processes that arose from the law, including
a mandatory system of teacher certification which effectively doubled the income of successful teachers. In the course of implementation a number of political and economic factors have distorted the reform process, causing some unintended consequences in terms of the effectiveness of the outcomes. The publication considers the impact of new policies on teacher knowledge, skills, and motivation, and on student outcomes. It also explores the major impacts of the reform in terms of the system’s financing and the distribution of teachers.

The book’s framework places the program of reform within the context of a comprehensive and modern system of educational management which emphasizes the nature of recruitment into the profession; the organization and quality of pre-service education; the in-school induction, mentoring, and probation program for newly appointed teachers; the importance of formal certification as a quality benchmark for all teachers entering the profession; the critical nature of structures to deliver continuing professional development to ensure the updating of teacher knowledge and skill; and the role of teacher performance appraisal in identifying areas in which teachers can be improved, motivated and encouraged to participate in ongoing career development.

In this regard, the book contains much which will be of interest to government education ministries worldwide, as well as to development agencies contemplating similar comprehensive reforms. Some of the lessons and recommendations from this analysis includes:

- The impact which doubling teacher income has had on increasing the status of the teaching profession and attracting better quality candidates into teacher training;
- The relatively small effect that teacher certification, as the minimum requirement for entry to the profession, has so far had on improving teaching and student learning;
- The importance of having a quality assurance framework and a process for gathering data and evaluating the effectiveness of policy changes in place from the beginning of any reform process;
- The significant financial trade-offs within the education sector required to absorb the considerable cost of these reforms, particularly teacher salaries.
2. **Indonesia as a case study for comprehensive teacher reform**

As it entered the new millennium, the Indonesian education system began to grow more rapidly. To cope, the management of the national system was decentralized to over 400 districts which were not well-prepared for the task. Teachers were facing greater challenges in coping with curriculum and methodology at a time when little effective support could be gained from the new district education offices.

Furthermore, teacher status was low compared to other occupations in Indonesia. Teachers had relatively poor qualifications and many lacked adequate training. In 2005 more than 60% of all teachers did not hold the four-year degree required by the new Teacher Law, and, in fact, around 25% of teachers had failed to go beyond high school. Salaries and incentives were low. In 2008 the starting salary for primary or junior secondary teachers was approximately 40% of national average per capita income. In general, teachers demonstrated low competency on subject matter tests. In a study completed by the Ministry of National Education in 2004, a large percentage of teacher applicants demonstrated poor content mastery with the average score being 34 correct answers in a test of 90 questions. The situation sapped teacher motivation, and was reflected in high teacher absenteeism and increasing numbers of teachers taking second jobs. This reduced teacher-student contact time and impacted on student achievement.

At the management level, Indonesia also faced serious teacher over-supply and distribution problems. A recent study shows that only 53% of students graduating from teacher training institutions could be employed as teachers. A survey in 2005 using existing staffing entitlement formulae showed that 55% of primary schools were overstaffed and 34% understaffed. Thus, whilst there was an oversupply of teachers in 2004, for example, a significant number of schools did not have enough teachers. This was exacerbated by the fact that many teachers in rural and remote areas tended to have less training than their counterparts in urban areas (Figure 1). It is therefore likely that the pre-reform teacher distribution resulted in a wider shortfall in learning achievement for students in rural and remote areas. It was therefore not unexpected that the final critical shortcoming of Indonesian teachers related to the low level of student outcomes, especially as measured by international comparative tests.

This combination of factors led policymakers in the direction of a substantial increase in salary through a professional allowance, conditional on teachers becoming better qualified in the new subject knowledge and pedagogical skills needed to produce improved achievement on the part of their students. The Teacher Law of 2005 used the instrument of certification to ensure this combination became enshrined in the system. The reward for in-service and pre-service teachers adopting these new practices would be the professional allowance.

However, these changes could not begin until new structures and practices became readily available and were delivered to teachers in the schools and
universities. The Teacher Law and its many Regulations set about preparing the scenario for these changes. These procedures and Regulations to support them were developed within a financial and political context where negotiation between parties and modification of current practice was necessary.

**Figure 1: Educational levels of primary school teachers in Indonesia, 2005**

**a. Degree status**

<table>
<thead>
<tr>
<th>Degree Status</th>
<th>Percentage of Teachers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than bachelor's degree</td>
<td>90%</td>
</tr>
<tr>
<td>Below diploma 2</td>
<td>60%</td>
</tr>
</tbody>
</table>

**b. Years of education**

<table>
<thead>
<tr>
<th>Years of Education Beyond High School</th>
<th>Remote</th>
<th>Rural</th>
<th>Urban</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.5</td>
<td>1.0</td>
<td>1.5</td>
<td></td>
</tr>
<tr>
<td>1.0</td>
<td>1.5</td>
<td>2.0</td>
<td></td>
</tr>
<tr>
<td>1.5</td>
<td>2.0</td>
<td>2.5</td>
<td></td>
</tr>
</tbody>
</table>

Average number of years of education beyond high school

Remote | Rural | Urban
The political context of the Teacher Law

In providing a comprehensive, clearly defined package of reforms, the Teacher Law established an ambitious agenda for improving the national education system. It came at a critical time in Indonesia’s education development and had an impact on many agencies responsible for contributing to teacher quality: the universities and colleges providing pre-service teacher training; the district and provincial authorities involved in providing support services and monitoring standards; the leadership available in schools to evaluate teacher’s work and ensure continuous professional improvement was built into the everyday operation of schools; the teacher professional bodies in creating a culture of growth and improvement for all teachers; and the parent and community agencies ensuring constructive feedback on the work of schools and teachers. All these agencies had new tasks to perform as a result of the Teacher Law, and there was a remarkable consensus in adopting the common goals of teacher quality and improved student learning. A new Directorate General for the Quality Improvement of Teachers and Educational Personnel (QITEP) was established to oversee teacher quality and it began to initiate and coordinate the requirements of the Law.

However, the differing vision of some players in the system made implementation difficult from the start. An initial plan to base assessment for certification on both a subject matter test and a classroom observation of all teachers was replaced by assessment of a simpler portfolio of training and lesson plans. When assessed by selected universities, almost all teachers succeeded at the first attempt. District offices, recently decentralized, tended to establish rules and select candidates according to their own views rather than follow the central guidelines. It was even reported that some portfolio material was fictitious or falsified. As the value of the portfolio approach and the efficacy of the 90-hour course provided for those who failed was questioned, the Ministry replaced the process with a competency test with a 30% pass mark in 2012. But by then the Directorate General had been re-structured and many of its functions disbursed into other units.

Nevertheless, in spite of these earlier operational issues, the overall structure of the Teacher Law as envisioned in 2005 has been a major step forward in Indonesian education. The target of certifying Indonesia’s 2.7 million teachers by 2015 is well underway. The underlying agencies and elements of the Law have made a significant impact on education standards and management structures. Whilst a number of complications have arisen to delay or impede the implementation of parts of the reform, these are well understood by the Ministry and steps are being taken to resolve many of them. The Law itself has undoubtedly had an enormous and comprehensive impact on Indonesian education and maintenance of this drive for improvement will undoubtedly depend on the ability of subsequent governments to sustain this momentum. The relentless pursuit of improvement in teacher quality through an interlocking series of strategies as well as a changing political and financial context has continued.
3. **Teachers as the Cornerstone of Education Quality**

In earlier years of massive expansion of the Indonesian education system the focus was largely on quantitative inputs such as numbers of schools and classrooms, numbers of books and teachers leading to higher enrollments, and achievement of higher completion rates. Later the focus shifted to the training of teachers, the nature of the teaching-learning process, and the curriculum being delivered. Likewise the health of the child, the motivation to learn and the readiness for school became important. In turn, school climate or learning environment became of greater interest with emphasis on the school as a sanctuary for children rather than a place with poor hygiene and unhealthy facilities, corporal punishment, peer bullying, and teacher indifference. The role of the school in the community has also become important as schools improved instruction through a growing collaborative partnership of school staff, parents, and the community.

However, throughout this period, the role of the teacher in providing an education of good quality has become increasingly critical. It is the teacher using more student-centered, active teaching-learning techniques to deliver a relevant curriculum, who, often in the context of increasingly powerful school-based management, must promote community support for the school. Any education system depends heavily on a range of elements in shaping its teachers to deliver quality instruction. These elements are circumscribed by the financial and political context of the system which places constraints on how these elements can operate (Figure 2).

---

**Figure 2: Conceptual framework for quality education**

![Conceptual framework for quality education](image-url)
Best practice systems are already using effective recruitment strategies to attract higher-level candidates into the teaching profession. Higher pay, competitive with other professions, has begun to work in the Indonesian context, and more rigorous selection processes are on the agenda. More clearly defined career paths with the possibility of merit-based promotion will also raise the prospect of greater professionalism in teaching.

Once selected, the nature and quality of pre-service teacher education based on defined teacher competencies becomes paramount. Increasing degree training to four years for all recruits is a key development in Indonesia. Incorporation of a significant period of professional classroom training is also now mandatory under the reforms.

Following pre-service preparation, good education systems also offer new teachers a program of induction, mentoring, and a period of probation to support their transition to the workplace. These processes are now being adopted in Indonesia. These are seen to be important in fostering good professional practice and team-work, and in developing accountability to the principal and school supervisor or inspector, and to parents and the community.

Most school systems require teachers to hold certification in order to gain employment. In Indonesia this process was established by the Teacher Law and is an official recognition that the teacher has reached the standard endorsed by the education authorities, and is a mark of a teacher’s competence in subject-matter knowledge and teaching methodology.

Accompanying these early career experiences and continuing beyond them, throughout a teacher’s career, is more focused continuing professional development (or in-service training). New and updated content knowledge, curricula, and textbooks have to be mastered; existing skills have to be refined and new ones acquired in new teaching contexts; and new challenges facing teachers need to be met. In a large system, such as the Indonesian, teachers working together in school clusters at the local can become genuine learning communities. This has been linked to longer-term qualifications and award of credit points by the Teacher Law.

In Indonesia teacher appraisal and career development is also being incorporated as an important component of continuing professional development. Appraisal usually considers aspects of professional competence in the school such as subject knowledge, pedagogy and duties within the school. The principal will work with the teacher on individual goals and performance indicators, and will later review progress and make decisions regarding strengths and weaknesses in the teacher’s work for future development, and promotion.

Increasingly teacher reform is focusing on how teaching occurs in the classroom, including a continuing and persistent, practical focus on learning, and the creation of a strong culture of teacher education, research, collaboration, mentoring, feedback and sustained professional development. Necessarily, reform is
comprehensive rather than piecemeal. The best future strategy for improvement of teachers is to be found in whole-school reform with all teachers, the school leadership, the parent-teacher association, and the community as a whole being involved in the process.
4. The comprehensive reform of institutions, mechanisms, strategies and processes

Past attempts in Indonesia to deal with issues of teacher quality have had limited impact partly because they have been conceived and implemented in a piecemeal fashion. Salary increases, higher training requirements, professional development courses, promotion opportunities, and other strategies, in themselves, have had only limited impact. Only the Teacher Law of 2005, with its emphasis on the certification of all teachers, has attempted to comprehensively address the issue of teacher quality improvement by linking a range of strategies to the powerful incentive of a significant increase in income.

This legislation has resulted in a period of fundamental change, with the whole teaching service being subject to new rules and regulations governing the conditions of teachers which set in place new teacher management requirements and new incentives for their adoption.

Development and adoption of agreed standards

Establishment of the National Education Standards Board in May 2004 provided a sound basis for the reform process. The board’s work consists of establishing, monitoring, and evaluating standards in eight areas: graduate competencies, subject content, education processes, teaching personnel and training, infrastructure and facilities, management, education funding, and educational assessment. Its standards and indicators for graduate teachers are based on the four core competencies (professional, pedagogical, personal, and social) mandated in the Teacher Law. These competencies now underpin the instruments used in the certification of teachers; the redesigned university training courses; university accreditation requirements; competency tests; statements of duties for supervisors, principals, and teachers; performance appraisal instruments; and other key elements of the reform. They create a unifying point for the reforms and ensure that the new training programs are designed to better meet international best practice. These standards were developed through the collection of data on national and international best practice, the inductive gathering of academic and practitioner opinion, and the testing of draft material in wider public forums to ensure that the standards finally adopted reflected the highest levels of practice. Once finalized, the developed standards were mandated and now provide a blueprint for quality.

Impact on pre-service teacher training agencies

The new four-year degree with a significant in-school practical teaching component for all teachers required significant revision to existing courses and the incorporation of additional competencies mandated by the Teacher Law. Additional resources were needed to cater for a larger number of trainees staying longer in training.
Reform to the training curriculum has challenged the universities and other training agencies to:

- Increase course time for practical classroom teaching, with coaching and mentoring by lecturers and, periodically, by experienced classroom teachers;
- Provide more extensive school-based experience, observation, tutoring, small-group assistance, school-based action research, and collaboration during the induction year;
- Expand school-university collaboration by using more on-campus micro-teaching to exhibit best practices;
- Greater employment of expert classroom teachers to supervise future teachers, assist in or teach courses in the pre-service university programs, and collaborate on action research with university faculty;
- Invest in more appropriate university infrastructure in terms of science and language laboratories, curriculum development centers and libraries, and instructional technology including Internet connection.

**A new post-graduate professional teacher training requirement**

The Teacher Law required the introduction of a new professional (pedagogical) qualification to be undertaken following completion of the four-year degree. International experience has shown that a postgraduate focus on pedagogy will also enable greater flexibility in student entry to teaching. By providing the professional teacher education course as an “add-on” to a regular degree in a teaching subject, universities can increase the options available for graduates who may seek a future career change. It may also enable mature professionals in other fields who have subject expertise to switch into teaching by completing the teacher professional training.

In Indonesia, this postgraduate course of professional study and classroom practice must be undertaken by all teachers seeking certification. The course is of one year’s duration for secondary teachers and six months for primary teachers. Because of the incentive of the professional allowance, competition for the limited places has been vigorous. Selection for enrollment in this course will involve rigorous testing. However, by coming at the end of the four-year teacher education degree, the test does not effectively manage the number entering the education profession in the first place, and thus does little to improve efficiency of resource use by teacher education institutions.

Priority to undertake the postgraduate professional course has been given to teachers prepared to accept appointment to a school in a remote locality, a border zone, or a rural area. On their return, they are awarded a scholarship to complete postgraduate professional training and can then immediately undertake certification. This is a useful strategy to ensure the more equitable distribution of teachers.
Induction, mentoring, and a new probationary policy for all new teachers
An important reform emerging from the Teacher Law is the development of a school-based (or local working group-based) induction program for beginning teachers. This policy is meant to link the beginning teacher induction program and the school’s classroom assessment report with the certification process and completion of the probationary period.

The policy intends to defer certification until the end of the teacher’s probationary year. This will allow the principal’s report to be incorporated into the process and become part of the certification determination. It also gives a better balance between the university’s more academic view and the employer’s view of the overall ability of the prospective teacher in a classroom with a full teaching load.

The teacher induction Regulation acknowledges that a beginning teacher requires closer supervision, mentoring, and guidance in the workplace to successfully make the transition from university training to the school. It has been recognized that such an induction and probation program is best delivered by principals and should define their true instructional leadership role within the school.

Continuing professional development linked to teacher progression
The Teacher Law has had a dramatic impact on the number of teachers undertaking in-service training. With 65 percent of the country’s teachers not meeting the new minimum four-year degree academic requirement, the process of in-service upgrading has been the starting point for reform. In fact, it represents the area with the greatest potential for improving the quality of incumbent teachers. This is an area where a range of training options and other useful initiatives has become available, including an expanded role for the Open University, whose enrollment of external students doubled by about 300,000 in-service teachers almost overnight; the adoption of distance learning modes by a limited number of education faculties of the teacher training institutions; preparation and distribution of university-accredited learning modules for use at the local level through the school cluster teacher working groups; and, increasing use of recognition of prior learning (RPL) by universities.

School cluster-based teacher working groups as a core delivery mechanism
Teacher working groups formed from primary and secondary schools at the local level have long provided a forum for teachers to discuss teaching problems and work cooperatively on common tasks such as curriculum development, the creation of teaching aids, and the design of test items as well as more advanced activities such as lesson study and classroom action research. It is estimated that there are over 60,000 teacher working groups in Indonesia, and, whilst support for these groups waxes and wanes, they have been critical in the delivery of continuing professional development. In 2005 the Ministry began a revitalization process through a block grant program to deliver the surge of training generated by the Teacher Law.
A study undertaken in 2010 indicated that new funding policy requirements had produced: (a) a significant growth in the time spent in training activities; and, (b) an improvement in the nature and quality of activities on which that time was spent. This is good news for those involved in educational reform because the local school working groups represent a critical strategy for bringing in-service training to the grassroots and into schools where the greatest improvement in teacher quality is desired.

**Teacher appraisal linked to career development**

As part of the teacher reforms, the ministry has also begun to implement changes to the teacher accountability system. The focus is on a revision to the teacher performance appraisal scheme and a stronger link to the professional development system. The implementation of a new annual performance appraisal scheme will ensure that school principals and supervisors take an active part in the work and performance of each teacher. Through an annual review of a teacher’s work in relation to the knowledge and skills he or she is required to demonstrate and the standards mandated by the Teacher Law, a principal can identify the weaknesses of a teacher’s performance and require that the necessary professional development take place.

A recent Regulation now links scores from the performance appraisal instrument to a teacher’s salary increment and future progression. Teachers will, therefore, have a strong incentive to undertake the necessary development coursework recommended for improvement. Furthermore, if this performance is a component of future promotion opportunities, the cycle is complete and an integrated framework is established. Teachers who are identified as underperforming will receive support but will also face sanctions for non-performance.

The Ministry of Education and Culture is currently preparing an online teacher assessment recording system to measure the subject content knowledge and classroom performance of teachers. This e-system will record the data from each teacher’s performance appraisal (and results from competency tests undertaken from time to time) into a specially designed computer database. The information will be used to develop individual teacher profiles in the legislated competencies and will enable management to measure progress toward their achievement.

The performance appraisal instrument will refer to the professional development activities undertaken by the teacher. Many professional development modules have already been developed. Others will be prepared. A framework is being developed to incorporate all these modules and to ensure they are graded according to the types of professional development required at different levels of a teacher’s career.

**Strengthening the work of principals and school supervisors**

Although many school principals in Indonesia are well educated and capable, their training and knowledge of school management is often inadequate for modern requirements. Most principals simply implement education policy and...
administrative requirements as a matter of routine without the knowledge and skills of an instructional leader. Few adopt a proactive supervisory and developmental role toward their teaching staffs.

With the introduction of school-based management, principals now have an effective role in a range of areas including school planning, curriculum development, school finance and budgeting, staff management, and community involvement. The principal thus has a key responsibility at the center of a devolved system where school-based management is the expectation. Principals in Indonesia now need greater skill in more effectively managing these processes.

The most senior field position employed by the district office is the **school supervisor**. This officer visits schools to provide an accountability link between the school principal and the district officers. Unfortunately, their role focuses more on administrative issues than on the improvement of the classroom performance of teachers. Appointment often suffers from favoritism and the position is often of low status rather than an attractive career pathway.

Recent Regulations have re-defined the competencies of principals and school supervisors and emphasized their roles as instructional leaders and system managers of education at the local level. A training program has been established and, in future, appointments of principals and supervisors must be made from a pool of officers who are licensed on completion of this course. A major factor for success in improving teacher quality must rest on the selection process for local management personnel such as principals and supervisors who must be able and motivated to undertake these tasks with real commitment. Mechanisms are now being piloted to guarantee that, in future, this process is based on merit and competence instead of political or personal favoritism.
5. **Analyzing the evidence: the impact of certification on teacher quality and student learning outcomes**

The Teacher Law and its reforms of the past decade aimed to address a wide range of teacher quality issues simultaneously. This chapter of the book concentrates on examining evidence available to consider the impact of a key component of the law: the teacher certification program. The label of “professional” gained by certification and the associated professional allowance were meant, in part, to improve teachers’ welfare and increase their status and recognition.

Teachers with a four-year university degree or with a high rank in the civil service (rank IV) or very senior teachers qualify for certification. Since the start of the program, the government has admitted 200,000 - 300,000 (qualified) teachers into the certification process each year. The eligibility conditions for certification were intended to ensure that all teachers in the system had minimum levels of defined competencies. Since the program started, teachers have passed through the certification process either through an assessment of a portfolio of past experiences and training, or, later, through 90 hours of additional training. Only recently has competency testing been included in the process. Overall passing rates have been high, at around 95 percent.

The financial implications of the program are enormous. The teacher wage bill, already the largest expense of the Ministry of Education and Culture, will approximately double over the years to come. The question is whether this is money well spent. This chapter, therefore, discusses some of the impacts of certification on the quality of learning in Indonesia. The analysis can provide important information to policy makers in countries with conditions similar to those in Indonesia.

**Channels for improving teacher quality**

A study undertaken by the Government of Indonesia and the World Bank identifies three channels whereby the current teacher certification process in Indonesia can improve the quality of teaching: (a) **the attraction channel**: the professional allowance makes the teaching profession considerably more attractive (and competitive). It results in better qualified high school graduates entering teacher education institutions across the country; (b) **the upgrading channel**: teachers who do not initially qualify for certification normally need to acquire a four-year degree. In this process of upgrading, teachers acquire skills that improve their capacities as teachers. The upgrading channel applies to in-service teachers who do not yet qualify for certification. Such teachers must normally enroll in courses to upgrade their academic qualifications to the four-year post-secondary degree level. At the start of the certification program, 84 percent of the primary school teachers and 40 percent of the junior secondary school teachers did not qualify...
for certification. The aggregate effect of the certification program, channeled through academic upgrading, is potentially large; and, (c) the behavioral channel: certification implies increased recognition and a doubling of income, and should motivate teachers to become more productive in their profession. The allowance is permanent and not conditional on subsequent performance in the classroom, except for the requirement to teach 24 period-hours per week. Teachers who are certified, therefore, have few explicit financial incentives to change their teaching practices. But teachers might feel a moral obligation to invest more effort in their work and be absent less often. At the same time, their need to take second jobs decreases, which means that teachers have more time in a day for professional work such as classroom preparation and participation in teacher working groups.

Whether certification in its current form has positive effects on teacher quality and student learning outcomes depends on the potency of these three channels. Separating the different channels for analysis will aid in the discussion of the effects of certification.

**Analysis of the certification channels**

- **The Attraction Channel:**
  The incentive of the professional allowance received on certification appears to have increased the attractiveness of teaching as a career. The number of students enrolled in education programs in universities in Indonesia increased fivefold in the years following the Teacher Law - from 200,000 in 2005 to over 1 million in 2010. The increased attractiveness of the profession is, perhaps, more clearly shown by the increase in the percentage of students enrolled in education programs from 15 percent before the Teacher Law to almost 30 percent in 2008. There are indications that, at least for some specific teacher education institutions, the demand for vacancies has increased and that in some cases the quality of the intake has gone up over time. The average score of primary-school teacher candidates is higher than the national average, and the scores of the new cohorts of teacher candidates tend to increase at a faster rate than the national average (Figure 3). If this trend continues, it could eventually lead to improvements in the quality of the future teaching service.

  However, it may also bring a possible oversupply of newly graduated, highly motivated, and aspiring teachers which has concerns of its own such as finding vacancies. Policy makers are aware of this changing scenario, and commencing in 2013 the government has set an annual quota of 40,000 teacher candidates to enroll at private and state universities to ensure that the number of student teachers admitted each year will match the number of teachers expected to retire four years later, and curb the oversupply of teachers.
Figure 3: National exam scores of new teacher candidates compared with all senior secondary graduation cohorts, 2006-2009

Figure 4: Value added by primary school teachers with a four-year degree in Indonesia
**The Upgrading Channel:**
The professional allowance paid on a teacher’s certification has proved to be a strong incentive for incumbent teachers to upgrade their training to a four-year degree. The data show that the vast majority of under-qualified teachers (70 percent) are actively engaged in the upgrading process. In the long term evidence of improvement in student scores as a result of all the additional training undertaken by teachers will be reflected in Indonesian PISA and TIMSS results.

However, further evidence on the effects of upgrading can be provided through an impact evaluation that explored the effects of the certification program on teacher behavior, competency and student learning. The impact evaluation involved a sample of 240 public primary schools and 120 public junior secondary schools. All core subject teachers and all students were given a multiple-choice subject matter test on two occasions (2009 and 2011).

The study found that teacher academic qualifications and student learning gains are positively related. Students of teachers with four-year degrees appear to progress faster than their peers (Figure 4).

The analysis suggests that teachers with academic degrees are better teachers, not only because they score (slightly) higher on subject matter tests but also because they have additional skills such as pedagogical skills.

Conversely, however, in determining how qualifications (certification) are related to learning outcomes, the analysis found no difference between the learning outcomes of students taught by certified teachers and those taught by uncertified teachers.

**The Behavioral Channel**
The study also sought evidence on the effect of certification (and, in this case, the doubling of a teacher’s income) on changes in motivation or behavior of qualified in-service teachers (Figure 5). One finding was that because of certification, teachers rely less on second jobs and have fewer difficulties financially supporting their households. Overall, the livelihoods of teachers have improved, and certification has led to a 27 percentage point decrease in the likelihood of teachers holding a second job because the professional allowance now decreases the need to rely on outside jobs to supplement income. This income effect is also reflected in a decrease in the number of teachers who report problems financially supporting their households.
Executive Summary

However, there is no evidence that certification makes teachers more likely to participate in teacher working groups, teach more hours, or self-report to be absent less often. Furthermore, there is no evidence that certification makes teachers teach better, at least not in ways that are measurable through student test scores. Thus, whilst fewer certified teachers have second jobs, and fewer worry about providing adequate financial support to their families, these changes in behavior have not led to significant improvements in teacher productivity. Changes brought about in teacher behavior so far by certification have also not led to improvements in student learning (Figure 6).

Certification is expected from the academic upgrading of teachers who did not qualify before the law was passed and from the higher quality of new inflow. Variability in the quality of the upgrading courses and the apparently large increases in supply of seats in university programs in education, however, also limit the potential effectiveness of these channels.
Some conclusions from this evidence

Certification has provided the financial incentive for teachers to upgrade to the four-year degree level. Although academic upgrading of the majority of the teaching forces should, at least intuitively, lead to important increases in student learning gains, the evidence provided shows that such a result is not automatic. For example, teachers with degrees do not display much higher levels of subject matter knowledge than teachers without degrees. But, at the same time, there are correlations between student learning gains and academic degrees of teachers that cannot be explained solely by subject matter knowledge differences between teachers with and without degrees: teachers with degrees seem to be better teachers for reasons other than their subject matter knowledge.

The general conclusion drawn from the evidence, perhaps somewhat prematurely, is that the process of academic upgrading itself (currently happening at a massive scale) does not automatically translate into substantial steps forward in terms of the quality of teaching. This conclusion implies that the universities supplying these degrees should be rigorously controlled in terms of the quality of the training they provide and course accreditation standards should be more rigorously enforced.

The law mandates that all Indonesian teachers must be certified by 2015. All of them will, therefore go through the certification process and receive the professional allowance at some point in their careers. The certification tool used at the beginning of the reform fell short of measuring competence. As a result, a number of teachers who lacked minimum subject knowledge and pedagogical skills received double income but did not improve the outcomes of their students. However, teachers did respond to their new status by refusing second jobs and by being much less likely to have financial difficulties. Thus, teachers’ welfare and well-being have improved.

There is no evidence that the certification procedure and the increased levels of pay have led to better performance in the classroom. This finding is not surprising, given that there are no clear theoretical reasons as to why salary increases that are not conditional on classroom performance or further professional development would lead to better performance.

All evidence combined suggests that efforts must be made to closely monitor the upgrading process and make sure that academic upgrading provided by the universities, which currently happens on a massive scale, is of high quality. At the same time, the increased popularity of the teaching profession among young high school graduates should be used to select the best among the pool of applicants rather than to increase the levels of intake.
6. Looking inside the classroom black box

The teacher reform effort was ultimately expected to improve what takes place in the classroom, which should in turn lead to improved student learning outcomes. This chapter extends the certification analysis described in the previous chapter by exploring the ‘in between’ – the black box – of what takes place in the classroom through a video-study of 8th-grade mathematics classrooms that participated in the Trends in International Mathematics and Science Study (TIMSS) in 2007 and 2011.

The findings of this study are surprisingly similar to the previous chapter - the students of certified teachers did not have better learning outcomes than students of uncertified teachers, and there was no difference between certified and uncertified teachers in their subject matter and pedagogy assessment scores. The educational level of the teacher, on the other hand, does have a positive relationship with student outcomes.

Findings: the relationship between teaching practices and student learning
Teaching practices were examined from various angles to understand their frequency of use, how the practices relate to student learning outcomes, and how the teacher reforms and other factors may be influencing trends in practices. The results give a better understanding of what takes place in Indonesia’s mathematics classrooms and, in relating these practices to student learning, provide insights into the teaching-learning process and how it might be improved.

- Time spent on mathematics and lesson structure
  Data from 2007 to 2011 indicate that the proportion of classroom time spent on mathematics fell from 89 percent to 86 percent, whilst mathematical organization time increased from 8 percent to 10 percent (Figure 7). Students in classrooms with a higher proportion of time spent on mathematics tended to have higher learning outcomes, while classes with a higher share of time spent on non-mathematical tasks tended to have lower outcomes. Time on task is an important component in learning, so a trend toward less mathematical time within lessons is of concern.

- Teaching approaches
  In the coded approaches used in the video study, exposition (or lecturing) encompasses an approach that is highly prevalent in many countries and is often associated with traditional or teacher-centered learning where student participation is limited. Discussion becomes more student-centered with dialogue between the teacher and students, while problem solving, practical work, and investigation are approaches that revolve more around mathematical problems and tend to encourage more student-centered learning. The study showed that, compared to 2007, Indonesian teachers in 2011 tended to use much more exposition, while discussion, practical work, and investigation all decreased – even though many recent government programs (for example, through the national
Teacher Reform in Indonesia: The Role of Politics and Evidence in Policy Making

mathematics training organization and in teacher working groups) generally encourage teachers to use less exposition and more student-centered learning (Figure 8).

**Figure 7: Proportions of Lesson Structure practices in Indonesia TIMSS Video Study of Mathematics Classes, 2007 and 2011**

![Figure 7](image)

**Figure 8: Time Spent on Different Teaching Approaches in Indonesia TIMSS Video Study of Mathematics Classes, 2007 and 2011**

![Figure 8](image)

Exposition was found to have a negative relationship to learning outcomes. Investigation and practical work had positive tendencies, possibly in part because the approaches tended to encourage active student engagement and participation and required higher order thinking.

- **Whole-class interaction time**
Mathematical time was divided into public time (when the whole class participates in a task) and private time (when students are broken up into groups or do individual seatwork). In 2011, the allocation was 64 percent whole-class time and 36 percent group or individual seatwork time. There was no statistically significant relationship between the proportions of these categories and student learning outcomes, but within whole-class interaction some important differences emerged in terms of trends as well as relationships to student learning. There was much more teacher-only time in 2011 compared to 2007 (Figure 9). This time typically involved expositional or lecture activities. On the other hand, student involvement in the form of teacher-student interaction fell dramatically.
Teacher-only activities tended to be negative in relationship to learning, possibly indicating the importance of students being actively engaged in the learning process. Interestingly, though, activities that are student-only had a negative relationship to student outcomes, while teacher-student activities had a positive relationship. This may indicate the importance of teachers being actively involved, even in student-led activities, to monitor, speak to, and encourage students.

The trend of decreasing teacher-student interaction runs contrary to the practices reportedly encouraged by the Ministry of Education and Culture in its training and teacher working group activities. Combining this trend with the fact that teacher-student interaction time has a positive relationship to student learning outcomes raises some concerns as well as questions as to why such interaction might be declining. One possible explanation suggested by teachers and policy makers is that certification may indirectly encourage teachers to use more teacher-centered learning approaches because of a sense of pride and self-importance or even of obligation to earn their increased income.

**The context and language of problems and their solutions**

Mathematical problems can be approached in a variety of ways in terms of the context presented, the language used, and the method used to solve them. Generally, the application of mathematics to real-world problems and the use of non-routine problem solutions tend to be seen as involving more higher-order thinking and requiring a deeper understanding of mathematics.

There was an increase in the amount of time during which mathematical language and symbols were used from 89 percent in 2007 to 93 percent in 2011. Teachers seem to have also moved toward more routine, formulaic, and possibly rote learning approaches. The increase in mathematical language and the use of routine approaches, along with mostly closed problems and questions, may have to do with an increased emphasis on performing well on the national examination, where questions typically require a routine, formulaic approach in their solution.
Impact of the Reforms
The teaching practices studied above can now be seen in the context of particular teacher reforms such as certification, teacher training and teacher knowledge.

- **Teacher certification**
In comparing the teaching practices of certified and uncertified teachers, a striking feature is the lack of statistically significant differences. Where the teaching practices of interest were placed (one at a time) into a regression model that controlled for multiple contextual variables, only one difference emerged: certified teachers tended to use more whole-class (public) interaction and less group and seatwork (individual) interaction. Overall, there is no statistically significant relationship between these practices and student learning outcomes. The results coincide with the certification study finding of there not being a difference between certified and uncertified teachers, giving further evidence that certification did not have an impact on teaching practices and behavior. This is not particularly surprising, as almost every teacher who went through the certification process obtained it, so there was no separation of teachers during the process in terms of quality criteria.

- **Teacher education and training**
The requirement that all teachers obtain a four-year degree by 2015 is based on the assumption that the teachers with a higher level of education will be more effective teachers. The video study obtained results similar to those of the certification study: students taught by teachers with a four-year degree tended to have higher learning outcomes. Such students tended to have post-test scores nearly 4 percentage points higher than those of students taught by teachers with less than a four-year degree after controlling for multiple background and contextual factors and the students’ pre-test scores.

One of the more striking results of the study is the difference in student learning outcomes of teachers holding a mathematics education degree compared with those holding a pure mathematics degree. Students of both such teachers had positive learning outcomes on average, but students taught by teachers who had a mathematics education degree tended to perform relatively better. Those of teachers who held a mathematics education degree on average scored 1.3 percentage points lower on the pre-test than those with teachers holding mathematics degrees but scored 1.3 percent higher on the post-test, showing bigger gains. This result may provide insights into how training can support teacher development. Ensuring that teachers with pure mathematics degrees receive similar additional pedagogical training could have a positive impact. It may also capture differences in the way the degree courses teach mathematics, with the mathematics degree teachers learning how to solve problems whereas mathematics education degree courses tend to approach problems within the context of teaching mathematical concepts and problem-solving approaches to students.
Teacher subject knowledge
Of all factors explored, teacher knowledge in both subject and pedagogy had the strongest relationship to student learning outcomes. Subject knowledge tended to have a relatively stronger relationship with student learning than did pedagogical knowledge. This may, in part, be due to the measurements themselves, with subject matter knowledge lending itself well to a written test whereas pedagogical knowledge is much more difficult to measure in this manner.

In terms of differences of practices used, teachers with greater knowledge tended to use mathematical language rather than real-world contexts. They also appear to use questioning techniques, such as question-and-answer, rhetorical, and true-false questioning, more often. In terms of teaching strategy, they tended to use the investigative technique more. These differences may reflect greater confidence with mathematics among teachers with greater knowledge. Teachers’ use of problems with mathematical language may indicate a fluency in mathematics. The much greater use of questioning could possibly be related to greater confidence in dialogue with students, whereas teachers with less knowledge might shy away from questioning because it could lead to unexpected challenges. Finally, the teaching approaches of investigation (statistically significant) and discussion (positive but not quite statistically significant) may require a higher comfort level and fluency in mathematics depending on how they are used.

While the above-mentioned differences were identified, the proportion of time spent on most teaching practices between higher and lower knowledge teachers were not so drastically different. Still, students whose teachers have greater knowledge tended to do much better. This likely indicates that the more knowledgeable teachers were more effective in using the same practices. For example, two teachers could conduct a review of previous material, but teachers with greater knowledge may tend to be more effective because they give clearer explanations and can spot and correct student errors and misconceptions and other factors because they have a better grasp of mathematics and pedagogical concepts.

Influence of the national examination
Although some changes in teaching practices appear to be related to more teachers having a four-year degree, certification itself does not appear to be a factor driving change in the classroom. Other factors beyond the teacher reforms seem to be having a greater influence on teaching practices. Of particular importance is the increased emphasis on the national examination, which appears to lead teachers to use practices that they perceive to better prepare students for the examination.

Teachers were asked whether the national examination influenced their teaching. There was a positive relationship between teachers’ self-reported influence of the national examination and their use of certain teaching approaches. Those who said they were more influenced also tended to use routine problems,
closed problems, and mathematical language contexts—evidence that these practices could possibly be seen by teachers as being more effective or efficient in preparing students for the national examination. In addition, the percentage of teachers who said they were influenced by the national examination increased from 70 percent to 75 percent between 2007 and 2011. Many educationalists argue that the teaching approach encapsulated in formulaic techniques does not promote higher order thinking or a deep understanding of mathematics. It may point to the need to revise the national exam itself to incorporate problems involving application and higher order thinking.

The video study highlights the important relationship between what takes place in the classroom and student learning outcomes. It also highlights the fact that teaching practices evolve over time and that multiple system and cultural influences contribute to this evolution. The teacher reform is contributing to this evolution, although not always as intended and not working in isolation from other influential factors.
7. The impact of the reforms on the efficiency and equity of public spending

Progress in education in Indonesia over the past 15 years has been driven by significant increases in public spending. Since 2001, government education spending has doubled in real terms, and in 2009 approximately 4 percent of gross domestic product was devoted to the sector (Figure 10). These large increases in public spending have come about through the achievement of a constitutional obligation to devote a fifth of the government budget to education.

A significant proportion of this increased government investment in education has financed the teacher reforms outlined. Most notably, the 2005 Teacher Law introduced a professional allowance for certification and incentives for working in remote areas that have added significant commitments to government spending. As a way of balancing the increases in the education budget from rising teacher compensation, the government introduced measures to improve the efficiency of teacher use. For example, the Teacher Law requires teachers to teach for a minimum of 24 period-hours per week, and school staffing standards were revised to address the low national student-teacher ratios for basic education.

Figure 10: Public expenditure on education in Indonesia, 2001-2010

![Figure 10: Public expenditure on education in Indonesia, 2001-2010](image-url)
The purpose of this chapter is to assess the effect of these reforms on the efficiency and equity of teacher supply and distribution. The key message that arises from this assessment is that improvements in teacher pay have placed a significant additional burden on the government budget while reforms designed to improve efficiency and equity have had limited impact. Many of the issues addressed in this chapter are relevant for other countries in the region and beyond. Insights from Indonesia’s experience can provide valuable lessons for countries aiming to improve educational quality and yet exercise prudent budget constraint.

Managing the cost of the reforms

- **Effects on teacher supply: reducing the mismatch of supply and demand**
  Many of the best-performing education systems adopt processes for selection of teacher trainees that ensure only the most appropriate individuals enter teacher education, and that these intakes closely match the need for teachers. For example, in Singapore, only one in five applicants for teacher education programs are offered a place, and almost all graduating teachers enter the profession. This ensures high quality trainees undertake pre-service training and the cost of training is optimal.

  Although increased remuneration for certified teachers in Indonesia has raised the quality of student intakes in pre-service education institutions, there is a significant mismatch between the numbers graduating from colleges and the need for teachers. In 2011, for example, there were approximately 500,000 students currently training to be teachers. Given the limited need for new teachers over the next few years, it is unclear how this magnitude of newly qualified teachers will enter the current teaching profession. By introducing a competitive quota selection process, considerable cost savings could occur.

- **Effects on public spending: the need to cap unsustainable costs and find savings**
  The reforms to improve teacher quality have placed significant pressure on the education budget. In particular, the teacher professional allowance paid to teachers who become certified effectively doubles their basic pay. With almost 3 million teachers currently teaching in primary and junior secondary schools across Indonesia, the resources necessary to implement the certification program fully are enormous.

  Increases in education budget expenditure have been most rapid since the introduction of the certification program. Between 2001 and 2009, the above graph indicates that government spending on education increased by 120 percent in real terms.
A significant proportion of the increased public investment in education has been devoted to hiring more teachers and increasing their pay through the certification program. Between 2006 and 2010, an additional 450,000 teachers were recruited, and by 2010 approximately 30 percent of all teachers had been certified. Certifying the remaining 1.7 million teachers (70 percent of the total) by 2015 will have enormous budgetary implications. Certifying all eligible primary and junior secondary school teachers by 2015 will absorb approximately 41 percent of the total education budget in 2015 compared with 32 percent in 2012.

This increased spending would require cutbacks in other levels of education, and may limit investments in other areas crucial for improving educational quality such as pre-service education, on-going professional development. It may also threaten other government objectives in the education sector such as expanded early childhood education programs, and the introduction of compulsory education in the three years of senior secondary education.

The government needs to cap unsustainable spending. For example, its plan to convert all teachers to civil servants would imply that 89 percent of the total education budget in 2015 would need to be devoted to basic education, and, given the commitments outside of basic education, this level of spending is completely unviable. New policies to ensure more efficient use of teachers and raise student-teacher ratios hold out the prospect of lessening the budgetary impact of certification. Significant savings could also be realized by raising student teacher ratios.

• Effects on the efficiency of teacher use: too many teachers, unequally distributed

Overall, Indonesia continues to have some of the lowest student-teacher ratios in the world (see Figure 11). Since the introduction of the Teacher Law, teacher numbers have continued to rise at a faster rate than the student population at the primary level and student-teacher ratios have continued to decline. At the junior secondary level, student teacher ratios have risen since the introduction of the teacher reforms, which may be largely due to the faster enrollment expansion in this subsector.

Estimates of the size of the teaching force needed to fulfill the new staffing standards show that there are too many teachers currently in the system. Comparing existing staffing levels with the standards for student-teacher ratios laid out in the latest joint decree on teacher management shows that there is a surplus of approximately 100,000 primary school teachers, equivalent to 7 percent of the current teaching force. At the junior secondary level, there are approximately 30,000 surplus teachers, equivalent to 6 percent of the teaching force. In spite of new policies such as the 24 period-hour which ensures all teachers have a higher minimum teaching load, there are still too many teachers in the system. Furthermore, their unequal distribution means that many schools still have fewer teachers than they need.
Figure 11: Student teacher ratios in basic education, selected East Asian and Pacific Countries, 2010

a. Primary

Average number of students per teacher

b. Junior secondary

Average number of students per teacher
Staffing standards for small schools (mostly located in rural and remote areas) are a key contributor to the low student teacher ratios in primary and junior secondary schools. Approximately a third of Indonesian primary schools have fewer than 120 students. Under current staffing rules even small schools are entitled to one teacher for each of six grades plus a sports teacher and a religion teacher as well as a principal. A school of 120 students with nine teachers has a student-teacher ratio of 14 to 1. Many schools have lower student numbers and are staffed in the same manner. Staffing small schools at these levels clearly has a downward impact on national student-teacher ratios and the overall efficiency of the education system.

Raising teacher efficiency by increasing the size of schools could have significant national payoffs. Greater use of multi-grade teaching would also assist in lowering the number of teachers. The application of these strategies has been very limited to date.

- **Effects on composition of teaching force**
  Although the number of civil service teachers has remained relatively unchanged since 2006, there has been a massive and uncontrolled increase in temporary contract teachers hired by schools at the local level. For example, between 2006 and 2010, the number of school-hired temporary primary school teachers increased from 175,000 to 475,000, and now represent nearly 30 percent of all primary school teachers. The School Operational Assistance program, introduced in 2005 to provide funds for school use, has contributed to these increases. This teacher hiring at the school level is not governed by existing regulations outlining the required qualifications and experience that civil service teachers require, and their salaries are much lower.

  The increased use of school-hired teachers circumvents any attempt by central and local governments to achieve a more efficient teaching force, and contributes to the poor distribution and overstaffing of the system. Schools employ these teachers for a variety of reasons including the lack of a teacher with appropriate expertise or to cover the longer term absence of another teacher or because of a shortfall in the number of civil service teachers provided by the district office. In some cases such teachers may pay a premium to gain a position, and in others it may be a reward for a political favor of some sort. Where payments are required for positions, it is rare for only the best qualified candidates to gain employment. This can have the effect of reducing the overall quality of the national teaching force, and reducing some of the benefits of certification.

- **Effects on teacher distribution**
  Weaknesses in teacher distribution lead to very different learning environments for children in different areas. For example, in many countries, children in remote areas and from poor households are disadvantaged because the teaching force is less qualified and experienced relative to schools in more affluent areas. The distribution of teachers across schools in Indonesia is unequal and has not
improved significantly as a result of reform efforts over the past 10 years. The
scale of redistribution necessary to allocate teachers more equally is large.

If local governments re-distributed existing teachers to fulfill the latest stan-
dards, approximately 343,000 primary and junior secondary school teachers (17
percent of the total workforce) would need to be transferred (Figure 12). Most
of this redistribution would involve moving teachers within the same districts.
Transfers tend to be done on an informal and ad hoc basis, and rely on individual
teachers identifying openings in one district or school and each district initially
agreeing to a transfer. Existing mechanisms that govern cross-border redeploy-
ment are currently unable to deal with the scale of transfer needed to improve
the distribution of teachers.

Figure 12: Teacher redistribution necessary to comply with staffing standards in Indonesian
Primary and Junior Secondary Schools, 2010

The remote area allowance introduced under the Teacher Law encouraged
some teachers to teach in remote areas and improve their motivation. In 2012,
approximately 53,000 teachers received the allowance. However, many of the
teachers currently receiving the allowance were already working in remote areas.
Although this allowance has limited coverage, there is evidence that absentee
rates for these teachers in some districts were lower.

These results suggest that incentives introduced as part of the Teacher Law
need to be strengthened to maximize their impact on the distribution of teach-
ers. Recruiting teachers from local communities may also be an effective strategy
for improving teacher distribution. A similar program, introduced by the central
government, is also supporting the professional development of teachers in
remote areas. These initiatives provide an alternative strategy to providing incen-
tives for teachers to move to remote areas.
**Overall**

Education is central to Indonesia’s ambitious plans to accelerate economic growth and reduce poverty. If these plans are to be achieved, the education system needs to provide broader access to educational opportunities and improve the quality of existing provision. The government has signaled its commitment to achieving these goals by earmarking 20 percent of the national budget to education.

However, significant inefficiencies continue to exist, and, if left unchecked, are likely to severely constrain future improvements in educational quality and access. Teacher oversupply and the very low student-teacher ratios that result are a key determinant of existing inefficiency. Tackling these inefficiencies through improved teacher management is vital if national goals for education and accelerated economic growth are to be realized.
8. Conclusions and recommendations

This publication has documented recent educational reforms in Indonesia which were largely stimulated by the Teacher Law of 2005. This legislation is beginning to have a profound effect on the management of teachers. In particular, the interplay in the reform process between the political context and evidence-based policy making provides useful lessons for other nations at similar stages of development.

One of the key lessons is that teacher reform is a long-term and iterative process where compromises appropriate to the political and economic context of the time often need to be made. Nevertheless, with the support of empirical evidence and renewed commitment from government, necessary modifications to reform strategies can be made to ensure policies and procedures are relevant to the context and acceptable to interested parties. Such adjustments, as in the case of Indonesia, can go a long way toward a much more faithful and effective implementation of any reform’s original intentions.

Political economy factors

For a variety of reasons related to the political economy of the time, the process of certification selected and the consequent doubling of teacher income has not achieved all that was expected in terms of improved teaching and quality learning. Certification was intended to be based on a minimum academic qualification (a four-year degree), and mastery of the teacher’s subject and pedagogy, with the result being translated into different teacher behaviors and better student outcomes.

The logic of this process became distorted in several ways:

- The selection of teachers for the early rounds of certification was based largely on seniority rather than merit and thus gave preference either to those whose four-year degrees were already many years old or to the large cohort of teachers employed during the expansion of the system in the 1970s and 1980s with low academic qualification, low motivation, and little training (either then or subsequently) who either did not need the four-year degree because of their age and seniority or got the degree in a piecemeal fashion. Many, therefore, began the certification process with low mastery of the required competencies. To an extent, too, the certification queue was also influenced by political and personal favoritism or payment;
- Many of the older teachers had also begun their careers in an era when accountability and loyalty to the central government and membership of the civil service were hallmarks of the teaching profession. Such a bureaucratic environment, and the school cultures this engendered, did little to make them able or eager to become agents of change;
• The first method of measuring competency, the portfolio, did little to demonstrate either subject knowledge or pedagogical skill. The questionable manner through which the portfolios were often assembled, and the rather inconsistent way in which they were evaluated, did little to assure that the required competencies had, in fact, been mastered;
• The remedial measure to a failed portfolio (the 90-hour course) was helpful but, given its short length and the fact that it was largely standardized across all teachers rather than responsive to individual needs, could not make up for the low levels of competency of the participating teachers.

The result was that the quality of the certification process as a whole was not as good as originally proposed (i.e. a test of mastery in subject knowledge, and an observation of successful classroom teaching). Evidence of differences in competence between certified and uncertified teachers and their impact on student learning outcomes thus became blurred.

Thus the bar to gain the salary increase needs to be set at a height to ensure that certified teachers have achieved the competencies necessary for good quality teaching and that low-performing teachers do not remain in the profession. Such an outcome requires politicians and senior policy-makers to take a firmer stand in supporting the efforts of ministries of education in enforcing higher standards, implementing effective competency assessment, and redeploying or dismissing teachers who continue to perform below the required competency level.

**The Indonesian reform context**

The education reform process still has a long way to go in Indonesia. Some of the teacher certification impact assessment results have been disappointing. There are still large numbers of certified as well as uncertified teachers not meeting competency standards. It is important, however, to remember that a large number of teachers still have to undertake the certification process and that the process, itself, has been refined to include a greater element of competency testing and remediation. Furthermore, there are many elements contained within the conceptual framework for teacher reform still waiting for full implementation. This is the essence of the full-cycle program of reform commenced by the Teacher Law in 2005 – it set in train a program of continuous improvement in the quality teaching cycle. Such a comprehensive program of reform and a relentless drive to refine and improve the elements of the program in progress will surely serve Indonesian children well into the future. It is important that new governments in Indonesia take up the same challenge and continue this program of improvement.

Given that the reform process still has a long way to go the following specific recommendations are provided.
For new teachers

- Ensure that the intake of teacher candidates across all teacher education institutions is linked to the likely number of teachers (by level and subject) required by the system when each cohort graduates;
- Ensure that the hiring of new teachers is based on merit. It will do nothing for the credibility of the ministry if bright, motivated new graduates emerge from teacher education with little chance of gaining a teaching position;
- Ensure that the essential competencies in subject matter and pedagogy underlie all aspects of the pre-service education program;
- Require that the graduates of these pre-service programs pass the competency test required for certification at an appropriate level. The credibility of the ministry will be at stake if most of those who pass the test do so with a grade of only 50 percent;
- Ensure that appropriate induction, mentoring, and probation processes are in place at the school level, based on the required competencies, and supervised by the principal and school supervisor, so that final certification is based on both the candidate teacher’s academic record and their classroom performance;

For teachers not yet certified

- Monitor: (a) the methods used for uncertified teachers to apply for entry into a four-year degree program; (b) the quality of the four-year program to ensure it is based on the essential competencies for subject matter and pedagogy; and, (c) the awarding of the degree at an appropriate passing grade;
- Establish structured, well-monitored, and supervised in-service training focusing on classroom needs, specifically subject mastery and pedagogical techniques;

For certified teachers

- Implement the full range of quality assurance and continuing professional development mechanisms as soon as possible to further enhance the competency and professionalism of certified teachers, including teacher working groups, principals and supervisors able and willing to monitor and improve the performance of certified teachers, and teacher performance appraisal linked to career advancement;
- Encourage or mandate the expenditure of a certain percentage of a teacher’s professional allowance for continuing professional development activities;
- Establish a system to ensure all teachers master the required competencies at ever higher levels of achievement during their careers. For example, requiring some kind of re-certification or confirmation of certification every five years.
• Establish and implement procedures for underperforming teachers, including:
  (a) additional support, supervision, and training, and, if they fail to respond; (b)
  redeployment or dismissal.

The teacher as a professional
The aim of the elements in the quality teaching cycle is to identify and foster
teachers who are strongly committed to the profession and self-motivated in
their work. Current comprehensive and expensive reforms in teacher manage-
ment and development will not work without the intrinsic motivation to be a
good teacher.

Teachers will change behavior if sufficiently committed, if they have role
models and mentors who interact positively with them, and, if they have the
skills and capacity for the new behavior, and if reinforcement systems such as
performance measures are consistent.

Whole-school reform works best when the school, itself, is a learning com-
unity. Here reforms adopted will facilitate the development of a culture of
continuous professional improvement for all teachers. Every school can become
a learning community with students, teachers, and the wider community work-
ing together to achieve common goals for the benefit of children. The Indonesian
cluster-based teacher working groups, with inputs of sound professional develop-
ment are an excellent vehicle for improvement in the quality of teachers and can
become a natural learning community for the advancement of education.

The Government of Indonesia, through its Teacher Law, has undertaken the
immense and complicated task of essentially trying to reprofessionalize a depro-
fessionalized occupation. Whether it succeeds will go a long way toward deter-
mining the response of Indonesia to the national and global challenges it is facing
in the new century.