

Teacher Certification in Indonesia: a Doubling of Pay, or a Way to Improve Learning?

Policy Brief

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Photo: Fitrawardi Faisal

Origins of Teacher Certification in Indonesia

The 2005 Teacher Law aimed to improve the quality of the Indonesian education system by addressing the weaknesses in teacher competencies, their low motivation and poor levels of pay. A central component of the law was the teacher certification program. This program was designed to certify teachers who demonstrated minimum levels of teaching competency. Strong incentives were also introduced which entitled certified teachers to a professional allowance equivalent to their basic pay.

Since 2005, approximately one million teachers have been certified. About one-third was certified after a successful assessment of a portfolio of past experience and training. The remaining two-thirds were certified after passing a 90 hour training course (PLPG). The program aims to certify all teachers by 2015 and requires a large number of teachers to enroll and complete a university bachelor's degree. The Open University (UT) has been the traditional supplier of distance learning courses for upgrading teachers' knowledge and skills and, as of 2011, close to 500,000 teachers were actively enrolled to upgrade academic qualifications.

The financial implications of the certification program are enormous. If all three million existing teachers are certified the regulation would add approximately USD 5-7 billion each year to the teacher salary bill. Simple budget projections suggest that

certification may crowd out other quality investments in the system and limit resources available to expand pre- and post-basic education.

The Government of Indonesia and the World Bank are in the process of evaluating the impact of the teacher certification program. This brief provides initial results of this evaluation exercise by analyzing the direct effects that certification may have by changing the motivation and behavior of teachers who become certified and receive the professional allowance. The findings show that certification has led to some positive changes in teacher behavior but these changes have not translated into improved student learning. Certification may have other impacts on student learning that go beyond the direct effect presented in this brief. It provides financial incentives for unqualified teachers to upgrade their academic qualifications, and for high-ability senior secondary school graduates to opt for a career in teaching. Both mechanisms should improve the quality of the teaching force in the medium to longer term. This brief does not provide conclusive evidence on these mechanisms. Instead we provide some suggestive evidence that the process of academic upgrading of in-service teachers might not raise the quality of teachers as much as anticipated. More research into these indirect mechanisms however is clearly warranted.

The findings presented in this brief are based on two rounds of data collection undertaken in November 2009 and April 2011. A final round of data was collected in April 2012 and results from an analysis of all three rounds are expected in 2013.

How Could Certification Improve Quality?

Teacher certification is expected to raise the standard of teaching by introducing incentives and sanctions to ensure that teachers have a minimum level of competency. There are three main ways in which certification can lead to improvements in the quality of teaching:

- **The behavioral channel.** Once teachers are certified they are eligible to receive an additional allowance equivalent to their basic pay. This large increase in salary can improve the motivation and self esteem of existing teachers, which in turn could improve student learning outcomes. Teachers may for example refuse second jobs, arrive on time or prepare better for class. Many

existing teachers qualify for certification because they have a bachelor's degree, high rank (*rank IV*) in the civil service, or because they are very senior. No additional academic upgrading is required for these teachers so that, for them, the impact of certification is likely to be restricted to a change in behavior.

- **The upgrading channel.** In-service teachers who do not qualify for certification can choose to obtain a bachelor's degree to meet the certification requirements. The professional allowance provides a financial incentive for these teachers to undertake the necessary academic upgrading. Raising the academic qualifications of teachers in this way is expected to improve the quality of teaching and student learning. The upgrading channel could become increasingly effective if upgrading programs are carefully designed and monitored, and if competency testing, a pre-requisite for participating in the certification program, is adequately enforced. Both are needed to ensure that teachers who obtain a bachelor's degree also have the required competencies to teach.
- **The attraction channel.** The prospect of a higher salary has the potential to attract brighter high school graduates into teacher training colleges across Indonesia. Certification may only impact education quality through this channel in the long term when higher ability students graduate and enter the teaching force. Attracting higher ability students into the teaching force however will also be determined by the likelihood that new graduates are able to get jobs as teachers. Given the current oversupply of teachers in Indonesia this is unlikely to be automatic and may well dampen the incentive effects associated with higher pay. The Government, therefore, should control the increased demand and make sure that the system does not produce too many new teachers.

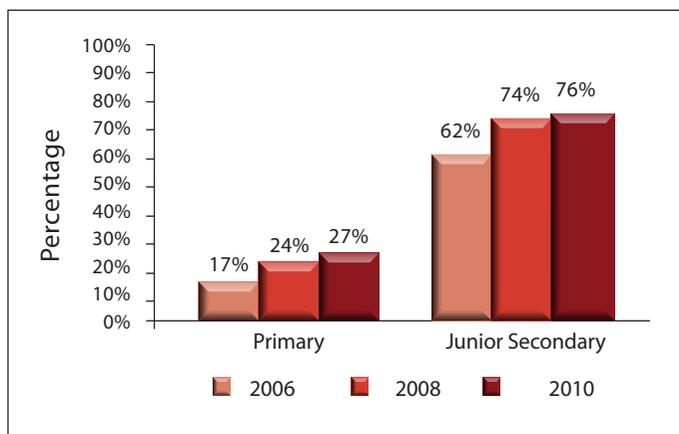
The Intentions and the Reality of Certification

Since 2005, teachers have been selected into the certification program based on their academic qualifications, seniority, or rank in the civil service. These three conditions are used as proxies for the four teacher competencies spelled out in the law: pedagogical, personal, social and professional competencies. Before 2012, the certification program did not select teachers by explicitly evaluating these competencies through rigorous testing. The use of proxy indicators of teacher competency turns out to be important in explaining the impact of certification on teacher quality.

The number of existing teachers with a bachelor's degree has increased in recent years as a result of a degree being included in the certification criteria (Figure 1). Between 2006 and 2010, the proportion of teachers with a university bachelor's degree has increased from 17 percent to 27 percent in primary schools and from 62 percent to 76 percent in junior secondary schools. Moreover, approximately 500,000 existing teachers are currently undertaking courses to obtain a bachelor's degree.

Figure 1: The proportion of teachers with a university bachelor's degree has increased as a result of certification.

Percentage of primary and secondary school teachers holding a four year university bachelor's degree, 2006-2010

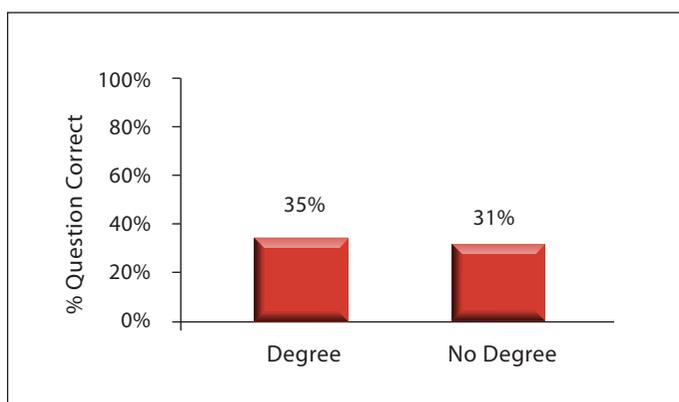


Source: NUPTK 2006, 2008, 2010

The data collected for the study however shows that a bachelor's degree is a poor proxy for some professional competencies [see box 1 for a description of the data we use throughout the remainder of this brief]. Primary school teachers perform poorly on average on the subject matter tests and those with a university bachelor's degree fare only marginally better than teachers with lower level qualifications (Figure 2)¹. The evidence suggests that, for primary school teachers at least, a bachelor's degree has not been an effective criterion for selecting high quality teachers into the certification program.

Figure 2: Teachers in general have difficulties with the subject matter tests administered for the study and teachers with a bachelor's degree score only marginally better

Test scores (percentage correct answers) of teachers with, and teachers without a four year post secondary degree.



¹ Note that this difference, however small, is statistically significant at the 1% level.

Teachers who upgrade their academic qualifications are expected to improve their professional capacities in the process. Most primary school teachers with a bachelor's degree have acquired their degrees through sequential upgrading. The first wave of upgrading happened in the 1990s, when new regulations prescribed that primary school teachers were required to have a two-year post secondary diploma. Primary school teachers started upgrading once more when a bachelor's degree became a criterion for certification. An explorative analysis of the recent teacher assessments UKA² and UKG³ found that teachers who acquired a bachelor's degree through sequential upgrading scored lower on the tests than teachers who obtained a bachelor's degree through a standard four-year academic training. It is vital therefore to closely monitor the learning gains that teachers make in the academic upgrading process. If applicable, policies should be designed to ensure the quality of the upgrading programs.

It is likely that the weak relationship between academic qualifications and subject matter proficiency also means that the current process of academic upgrading has limited effects on student learning. However, subject matter knowledge is only one of the required competencies to be an effective teacher and upgrading has the potential to expand their competencies in other areas. For example, their pedagogical skills may be greatly improved. Further investigation into the effects of academic upgrading on overall teacher competencies is clearly warranted.

The Impact of Doubling Pay on Performance

The certification process includes significant improvements in the pay of teachers. To what extent has the increase in pay for certified teachers changed their behavior and has this had any effect on student learning?

The doubling of pay means increased recognition for the work teachers do and less pressure to take on additional paid work to support the needs of the household. Increased pay may also improve motivation and lead to teachers arriving at school on time, preparing better for their teaching and being more effective generally.

The Government of Indonesia in partnership with the World Bank is undertaking a rigorous impact evaluation study to assess the causal effects of certification on teacher behavior and student learning outcomes. The study relies on the principles of a randomized controlled trial [see box 2 for details].

Before investigating the effects of certification on student learning outcomes we first investigate what happens to a teacher after being certified. We want to investigate the extent to which certification has made a difference in the lives of teachers, and, subsequently, if there are indications that certification could have led to better performance in the classroom.

Box 1: Data

The analysis presented in this brief relies on a sample of 90,000 students and 3,000 core subject teachers.



The 90,000 students and 3,000 core subject teachers were sampled for 240 public primary and 120 public junior secondary schools across 22 districts in Indonesia. They were administered a subject matter test. Core subject teachers are class teachers in primary

schools, and math, biology, physics, Indonesian and English teachers in junior secondary schools. The 3,000 core subject teachers that were tested were also interviewed.

The subject knowledge tests used in this study, both for teachers and students, were developed by the Government's center for educational assessment (*PUSPENDIK*) and generally include a math, science, Indonesian and English (only for junior secondary school) component.

Students and teachers have been tested (and interviewed) three times over the past years: in November 2009, in April 2011 and in April 2012.

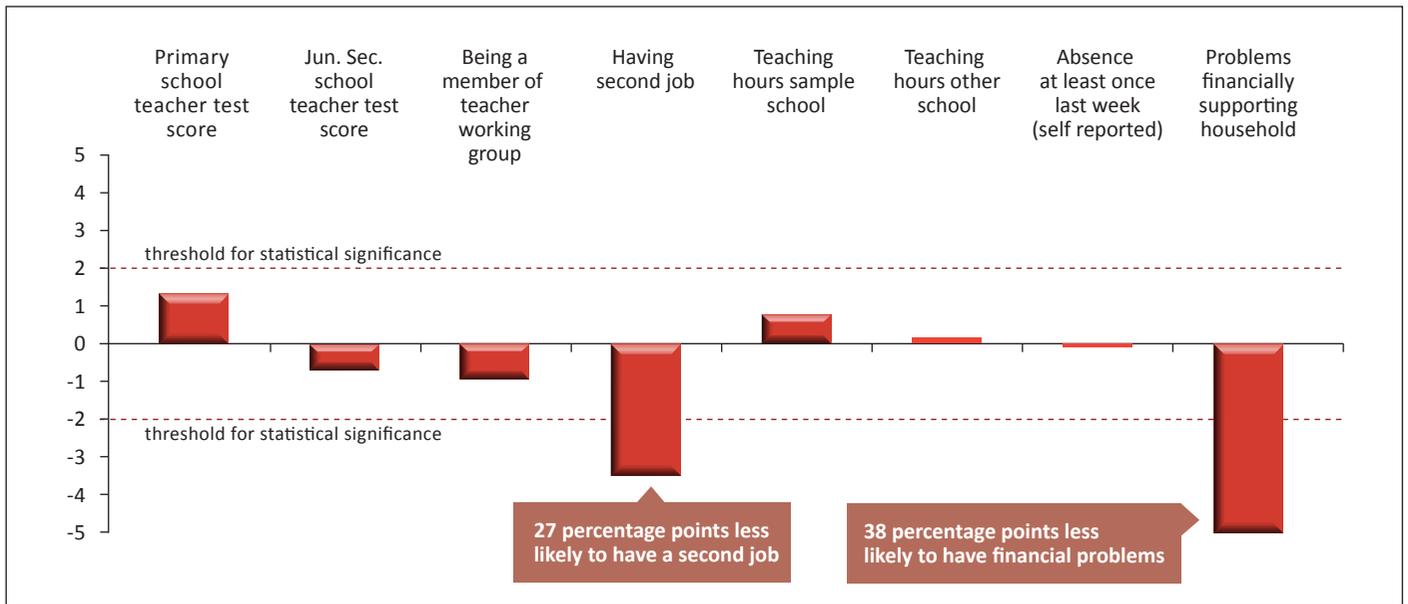
The data set is unique and can be used for a variety of purposes. In this brief we use it to evaluate the effects of certification at the school level. However, because we track students and their teachers for three consecutive years we can also use it to evaluate the broader impact of teachers while students progress through school.

² The *Ujian Kompetensi Awal* or UKA was an explicit competency test held in 2012 for that year's batch of teachers wishing to enter the certification process.

³ The *Ujian Kompetensi Guru* or UKG is an explicit competency test held in 2012 for all teachers who were certified before 2012.

Figure 3: Certifying teachers and paying them double, decreases the likelihood of them having second jobs or financial problems.

The causal effects of certification on teacher characteristics. The bars represent t-statistics associated with each indicator.

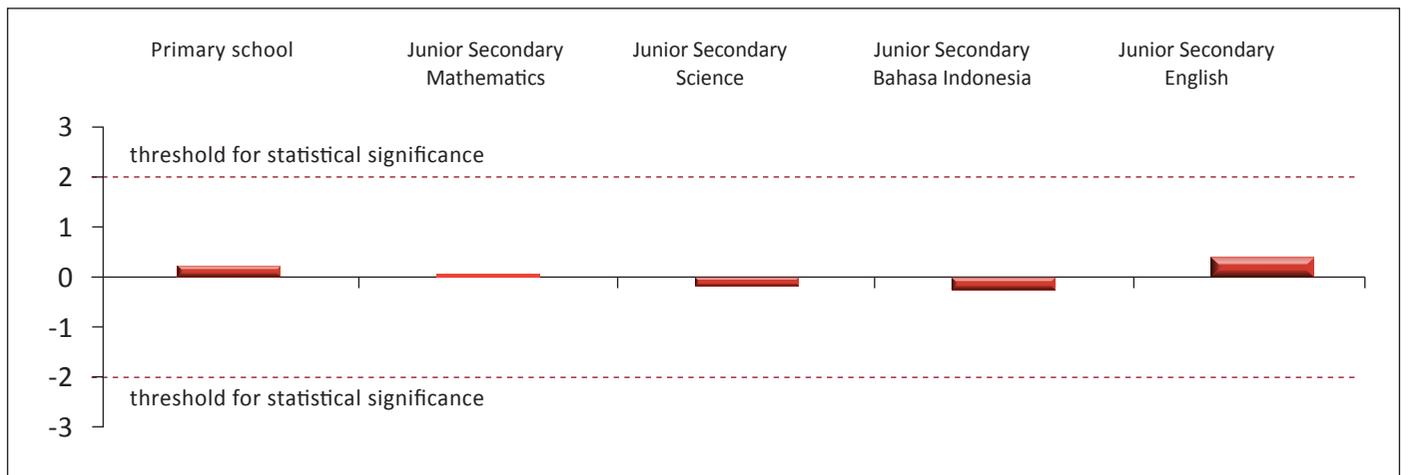


The certification process has not led to improvements in the subject knowledge of teachers. Figure 3 shows the causal effects of certification on teacher characteristics. Bars pointing downward indicate a decrease and bars pointing upward indicate an increase in the indicator shown. When bars pass through the dashed line they are statistically significant which means that the measured effect is

unlikely to have occurred purely by chance. The first two bars represent the effects of certification on teacher test scores. The bars are well within the boundaries for statistical significance and show that the certification process itself, which includes the 90 hours of PLPG training for a majority of teachers, has not led to measurable improvements in teacher’s subject knowledge.

Figure 4: Certifying teachers and paying them double does not make them teach better, here measured by the effects of certification on student learning gains.

The causal effects of certification on student learning. The bars represent t-statistics associated with each indicator.



Certification does seem to have reduced the proportion of teachers holding second jobs and reporting financial difficulties. The magnitudes of these effects are substantial. Certification can cause a 27 percentage point decrease in the likelihood of having a second job and a 38 percentage point decrease in the likelihood of teachers facing financial difficulties.

The doubling of pay — on average from about US\$ 250 to US\$ 500 per month — provides teachers with sufficient income to reduce their need to take on second jobs. However, other areas of teacher behavior do not seem to have been affected by certification. For example, no statistically significant effect of teacher certification was found on membership of teacher working groups, the number of teaching hours (in the sample school or in other schools) and self-reported absence levels.

Reductions in second job holdings caused by certification do not lead to improved student learning outcomes. The fact that certification made a difference in the livelihoods of teachers suggests that certification might also matter for harder to measure concepts such as classroom preparation and motivation. An all-embracing way of evaluating whether this has been the case is to investigate student learning outcomes. Figure 4 shows that there is no measurable effect of certification on student learning outcomes. The bars represent the differences in learning outcomes of students



Photo: Mudi Astuti

of two comparable groups of teachers, of which one group is certified and the other group is not [see box 2 for details on the methodology]. The differences between these groups are small and not statistically significant.

This shows that teachers are unable to translate increased motivation into improved performance in the classroom when their core competencies are low.

Box 2: Methodology

Randomized controlled trials (RCT's) have the explicit objective to evaluate the effects of a program or intervention under minimal assumptions.

RCT's deal with a problem called selection.

Selection problem. In our case we know that better educated and more experienced teachers are selected into the certification program first. Comparing learning outcomes of students of certified teachers with those of uncertified teachers, therefore, does not measure a true causal effect of certification. Instead it would measure the combined effect of certification and all the other reasons why certified teachers are different from uncertified teachers.

Random division into treatment and control. Our analysis relies on the principles of the randomized

controlled trial to control for this so-called selection bias. The 360 sample schools were randomly divided into two groups, treatment and control. The random division into treatment and control groups ensures that both sets of schools are similar, prior to the project's intervention.

The project's intervention. The research project granted preferential access to the certification process for all qualified teachers in treatment schools. In control schools this did not happen and everything stayed business as usual. The pace at which teachers are certified in control schools is consequently much lower, but not zero.

A causal comparison. As a result of the intervention a group of teachers in treatment schools is certified *only* because they were granted preferential access to the certification process. This group can be compared to a matching group in control schools who were not granted the preferential access, but were otherwise similar.

It is these two groups that are effectively compared when we present the causal effects of certification in figure 3 and 4. In essence we estimate the average causal effect of certification on the teachers (and their students) who were granted preferential access to the certification process. In the literature this concept is called a *local average treatment effect*.

Conclusions and Recommendations

Indonesia's certification program has raised the income levels of teachers and made the teaching profession significantly more attractive. However, differences between the design and implementation of the program have limited the impact of certification on the much needed improvements in teacher quality.

The main evidence we provide is on the direct effects of certification via the behavioral channel: does certifying teachers and paying them more make them teach better?

Although certification has led to some changes in teacher behavior, potential increases in motivation have not translated into improved student learning outcomes.

In the medium term, we expect improvements in student learning outcomes to occur as currently unqualified teachers upgrade their academic qualifications. The analysis provides some evidence that indicates that the effects of academic upgrading are likely to be weaker than anticipated. The process of academic upgrading and its

effects on student learning however needs to be further understood and reviewed, with special attention to the different ways of upgrading.

The policy brief shows that the academic criteria used to certify teachers have not guaranteed minimum teacher competency levels. Many teachers with university bachelor's degrees have difficulties with the competency tests that were administered for this study. This is particularly worrying given that the tests were designed to measure competencies in terms of subject knowledge considered necessary for effective teaching.

The government has recognized the need to improve the criteria used for certification. The Ministry of Education and Culture has introduced changes to the certification program to reduce the reliance on academic qualifications as the main criteria for certification. As of 2012, explicit competency testing of the 285,000 teachers wishing to enter the certification program was introduced (*Ujian Kompetensi Awal* or UKA). Approximately 15% of these teachers did not meet the pass score of 30 out of 100 and will need to undertake retraining before being assessed again for certification.

Competency tests like the UKA are crucial to the functioning of the system and should be used to restrict entry into the certification program to candidates who demonstrate the necessary attributes of an effective teacher. Preliminary results from the UKA showed that many teachers performed relatively poorly and cut-off points for passing may have been set too low. More detailed analysis of the results and its ability to identify competent teachers is clearly warranted.

The teacher certification program has the potential to substantially improve student learning achievement across Indonesia. Turning that potential into reality will require changes to the existing program to ensure that only competent teachers are certified. The recent changes in the program have been in this direction and further analytical work needs to be done to assess whether these have gone far enough in raising the quality of education in Indonesian schools.



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