

PERU

What are the challenges in introducing a results-based approach for the selection of school principals?

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An evaluation of a large scale reform in Peru assessed a results-based approach for selecting and paying principals to improve student learning outcomes.



Photo courtesy of World Bank/Domingo Giribaldi



School principals are of central importance to the quality of teaching and learning.



Some countries are piloting results-based approaches for principal selection and compensation.

The Results in Education for All Children (REACH) Trust Fund supports and disseminates research on the impact of results-based financing on learning outcomes. The EVIDENCE series highlights REACH grants around the world to provide empirical evidence and operational lessons helpful in the design and implementation of successful performance-based programs.

The quality of school management can have a large impact on student learning. Evidence from a wide range of countries demonstrates that improving the management practices of principals is associated with gains in student achievement.¹ However, in many countries, the selection of school principals is not based on achievement or merit but on seniority or even favoritism and political affiliation. Evidence from a number of countries suggests that selecting public sector managers on the basis of merit has a positive impact on

the performance of public servants,² meaning that introducing more merit-based selection of principals may be an effective way to improve school performance.

To explore the efficacy of a results-based system for choosing and compensating principals, the Results for Education for All Children (REACH) Trust Fund financed the evaluation of a large-scale reform of principal selection in Peru. Under the original system, principals were often selected through favoritism

or seniority, and their salaries were not based on merit. In 2013, the Government of Peru decided to introduce a reform that introduced the merit-based selection of principals. Existing principals were required to pass a performance evaluation to remain in their positions, while teachers who passed a national examination were eligible to become principals or vice-principals. Both existing principals and teachers promoted through this examination

would receive an increase in pay. The intention was to ensure that remuneration in the school system became more results-based by making access to higher-paying managerial positions meritocratic.

Despite the successful implementation of the reform, the study found that the meritocratic selection of principals did not have any significant effects on student achievement in urban areas and

had only a short-term negative (yet persistent) impact in rural areas. These results can be partly explained by the low levels of managerial skills and poor time management of newly appointed principals in rural areas, while such differences were not found in urban areas. The government recently updated the reform to provide principals in rural areas with more training and support, and to offer promotion opportunities to skilled principals.

CONTEXT

Peru has achieved near-universal access to schooling, but levels of learning are generally low and vary widely, particularly between rural and urban areas. Although a large majority of students (more than 70 percent) attend schools in urban areas, most schools in the country are small and located in rural areas, and many have only a single teacher to cover multiple grades. Rural schools achieve worse outcomes in national examinations. For example, in 2014, half of all urban students achieved a “satisfactory” score for reading in a second-grade examination, the Census-based Student Evaluation (*Evaluacion Censal de Estudiantes, ECE*), while only 17 percent of rural students met this standard and could be considered ready for the third grade. Rural students also lag behind in math.

Prior to the principal-selection reform, local authorities selected teachers to become principals and vice-principals without clear guidance from the central government. All principals were paid on a similar scale regardless

of their performance. The amount of funding provided to each region by the Ministry of Finance to pay teachers and principal salaries was based simply on the numbers of teachers and principals in the system.

Rural schools in Peru achieve worse outcomes in national examinations.

Only 17% of students score satisfactorily on a second grade reading exam.





Photo courtesy of CIFOR/Yoly Gutierrez

WHY WAS THE INTERVENTION CHOSEN?

The intervention was part of a wider set of reforms, the Education Program for Learning Achievements (*Programa de Educación para los Logros de Aprendizaje*, or PELA), which aimed to improve learning outcomes in schools by introducing more results-based elements into education financing. The reforms were triggered by Peru's poor performance in the 2012 Programme for International Student Assessment (PISA), an international learning assessment; with the country achieving the lowest score of all participating countries. Under PELA, government took three actions: (i) The number of standardized student assessments was increased and their quality was improved to provide clearer data to evaluate the performance of schools; (ii) changes were made to the process for appointing and promoting teachers to increase the results-based nature

of teachers' pay and to provide them with incentives to increase their efforts in the classroom; and (iii) a system of competitive, merit-based evaluations and appointments was introduced for school principals. Overall, the reform package was associated with a 6 to 8 percent increase in average student learning outcomes on PISA tests between 2012 and 2015.³

While a package of reforms is often the best way to achieve rapid improvements in outcomes, it can be difficult to isolate the effects of the individual components of the reform package. To evaluate the specific impact of the change in how principals were selected, REACH supported a quasi-experimental study that used existing data on the selection of principals along with student examination results to measure the change in learning outcomes

in schools where the principal had changed as a result of the reform. Such evaluations are typically conducted for a pilot intervention before a reform is rolled out nationwide, but this study conducted a rigorous evaluation of a reform that had already been implemented across an entire school system, with the aim of generating recommendations on how to improve the policy.



Photo courtesy of Rotaria de Peru SAC/Heike Hoffmann

HOW DID THE INTERVENTION WORK?

The reform required all 14,000 school principals to undergo a performance evaluation to remain in their positions. A nationwide examination was used as a second performance evaluation to select and appoint replacements for principals who had failed the first performance evaluation. The entire evaluation process had two parts, beginning with an initial multiple-choice test, after which those who passed moved on to a broader evaluation by local education officials. The first performance evaluation, the *Evaluación Excepcional* (exceptional evaluation), which included some questions about managerial skills, was conducted in mid-2014. The principals who passed remained in their jobs; that number totaled only about 3,000. The remainder either failed or did not turn up to undergo the evaluation. To replace the failing principals, the government then held a second assessment, which

The reform required all principals to undergo a national exam to keep their jobs and then a second exam as implemented to replace those who had failed.

was called the *Evaluación de Acceso* (access evaluation) and which tested candidates on a broader range of managerial skills and behaviors. Officials opened the examination to teachers whose pay ranked in the upper half of the salary scale, as a way to target those with the most experience and highest suitability for leadership positions. Existing principals who had failed the first evaluation or who had not taken it were also eligible to take the second test. Some 43,000 teachers and 5,618 vice principals and principals sat for the *Evaluación de Acceso*. Principals who passed this second test could be assigned to new posts or remain in their existing posts, but any principals who failed both evaluations were reassigned to regular teaching positions. The highest-performing candidates were then invited to take up principal posts to replace those who had failed the exam. Finally, the government redesigned the principal salary scheme to include additional pay for all the new principals who had been selected as well as existing principals who had been reconfirmed. Those principals who were reassigned to teaching positions were paid under the teacher salary scheme.

The level of compliance with the reform appears to have been high. There was full compliance with the law's requirement to administer the examinations and to select principals based on their results. After two years, about 90 percent of the candidates with results good enough to be offered a principal's job were still in their

posts, while fewer than 10 percent of principals who failed the first evaluation were still in their posts.

Because the reform had already been implemented nationwide, the researchers could not evaluate the impacts of the reforms using a randomized controlled trial. Instead, they compared schools where the original principals had failed the examination and should have been replaced (the treated group), which schools where the original principals passed the examination and should have remained (the nontreated group). To measure the impact of the reform on learning, the researchers used students' test scores in math and reading in the *Evaluación Censal de Estudiantes* (ECE), a national standardized student evaluation conducted annually in specific grades. This enabled the researchers to compare the historical trend in test scores with any changes in the years following the reform.

Test data for some students were available over several years, which enabled the researchers to measure the impact of the reform on individual students as they progressed to higher grades. The team also used surveys to learn more about how the reform affected schools, how the new principals used their time, and what constraints they faced in their daily work. The researchers also compared how these dynamics differed between rural and urban schools. This information was used to shed more light on the mechanisms underlying the results.

WHAT WERE THE RESULTS

The reform led to lower test scores overall, primarily driven by students of rural schools.

Learning scores improved in both urban and rural schools between 2014 and 2016, which reflected general improvements in learning in Peru's schools. However, scores rose more slowly in schools run by a new principal with the improvement in their scores being about 0.1 standard deviation lower in both math and reading than for schools that retained their original principals.⁴ Analyzing the change over time, the researchers found that the negative impact was strongest in the first year following the reform, and that the negative impact of the change in principal continued, albeit to a lesser extent, in the second year (*Figure 1*).

Disruptions in leadership changes at rural schools were more persistent than in urban schools.

The difference in the trend in average learning scores between schools that changed their principals and those that did not was almost twice as large for rural schools, at 0.14 to 0.15 standard deviation in math scores (*Table 1*), than for urban schools. This finding is further confirmed when looking only at the scores of students who were evaluated twice between 2012 and 2018 (*Figure 2*). The graph shows that the impact was not influenced by differences between cohorts of students enrolled in schools.

Figure 1: Lower Student Test Scores in Treated Schools than in Nontreated Schools

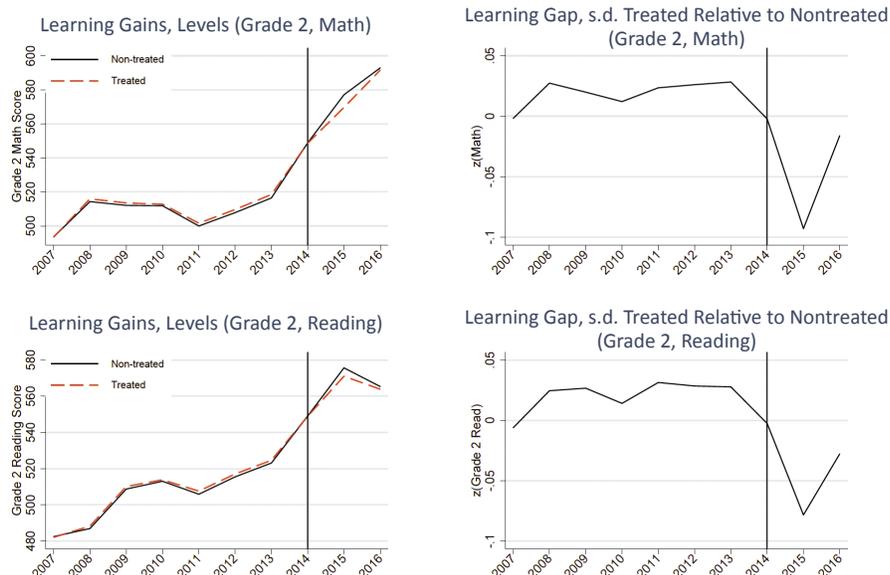


Table 1. Similar Scores in Urban Areas but Worse Scores for Treated Schools in Rural Areas

Panel A: Urban	z(Grade 2 Math)		z(Grade 4 Math)	
	(1)	(2)	(3)	(4)
ITT*Post	-0.001 (0.037)		0.013 (0.035)	
ITT*Post (2015)		-0.022 (0.042)		
ITT*Post (2016)		0.020 (0.047)		-0.017 (0.044)
ITT*Post (2018)				0.043 (0.043)
Obs	11320	11320	11210	11210

Panel B: Rural	(1)	(2)	(3)	(4)
ITT*Post	-0.137** (0.062)		-0.153** (0.067)	
ITT*Post (2015)		-0.191** (0.074)		
ITT*Post (2016)		-0.082 (0.077)		-0.208** (0.085)
ITT*Post (2018)				-0.098 (0.081)
Obs	9490	9490	8760	8760

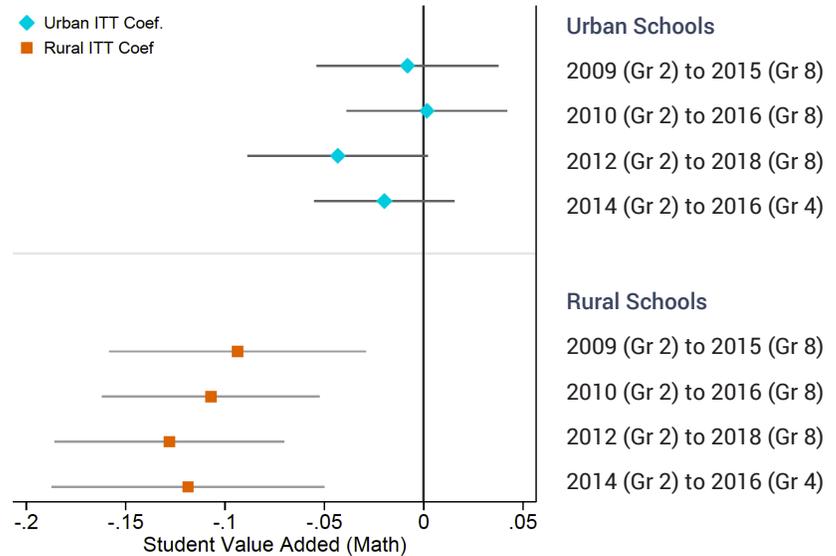
Note: ***, **, * sig. at 1, 5, 10 %. 2007-2014 Grade 2 inputted for Grade 4 regressions (2016 corr. .61-.68).

These results are surprising given that, while a change of principal might be associated with temporary disruption, those negative effects tend to fade as the new principal settles into the job.

These estimations suggest that the gap between rural and urban schools was equivalent to approximately 3 to 6 months of schooling.

The negative impacts on rural schools can be explained by the lower-quality performance of replacement principals compared to the performance of urban school principals who remained in their posts. To understand the reason behind this weak performance, the researchers first looked at the test scores of the principals who were demoted, of those who remained in post, and of the teachers who were promoted.⁵ They found that both rural teachers who were promoted to principal and rural principals who retained their post had significantly lower scores than their urban equivalents. This suggests that the pool of rural teachers from which to choose replacements had fewer management skills than the pool of urban teachers. Furthermore, the examination scores of teachers who successfully applied and were offered a position in a treated school through the *Evaluación de Acceso* in 2014 (the incoming principal) compared to the examination scores of the principals they replaced (outgoing principals) was smaller in rural areas than urban areas. It therefore appears that, while urban schools that changed their principals gained a more skilled

Figure 2: Worse Scores for Treated Schools in Rural Areas Consistent Across Cohorts and Time



Note: ITT coefficients for individual regressions, 90% confidence interval.

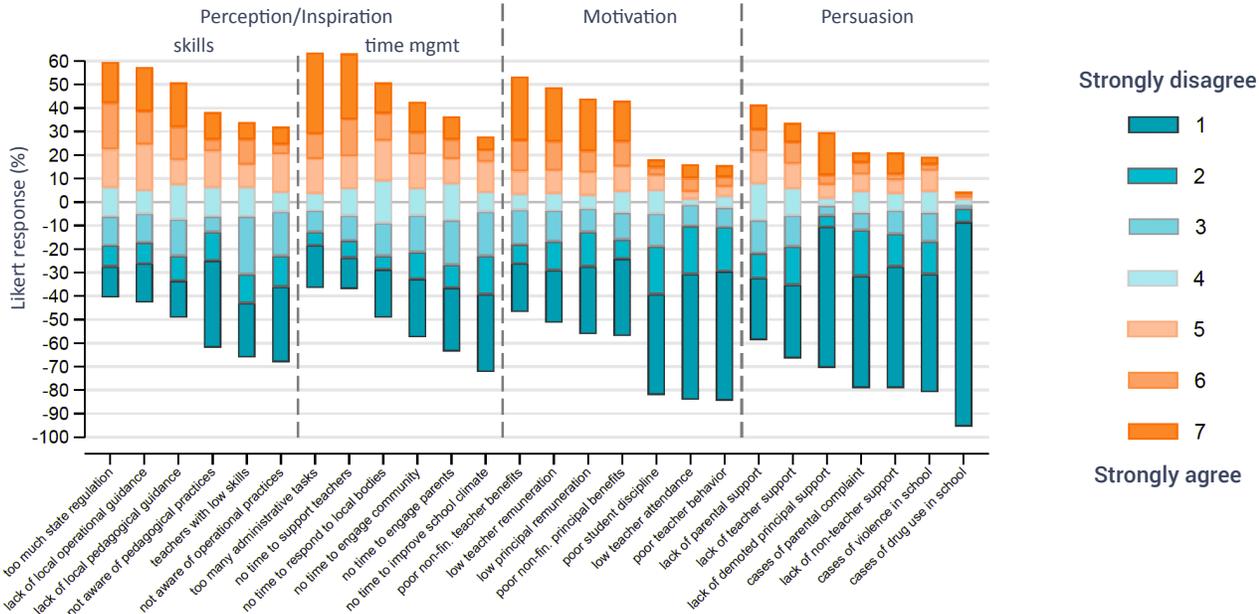
appointee than those who did not, this was not the case for rural schools.

Newly appointed principals in rural schools were less likely than urban school principals to devote all of their time to management. Under the Peruvian system, principals in small schools with fewer than nine classrooms are required to spend some of their time teaching, while in larger schools, the principals can spend all of their time running the school. The researchers compared the learning performance of schools just below the threshold (of nine classrooms) with those just above. Among all rural schools that had not changed their principals, the researchers found that those schools where the principals did not have additional teaching duties registered substantially higher test scores.

This suggests that spending more time on management (or time away from teaching duties) is key for rural principals to improve learning outcomes for their schools. However, this difference in test scores was not apparent in rural schools that had acquired new principals or in urban schools. This suggests that the new principals in rural schools did not take full advantage of being able to allocate more of their time to managerial tasks aimed at improving learning.

These findings are reinforced by data from a survey conducted of principals who were appointed following the reform. In their responses, the principals cited a lack of relevant skills and problems with time management as the key challenges they faced when first appointed (Figure 3).

Figure 3: Key Challenges Cited by First-Time School Principals



Notes: Phone survey with 120 first-time principals in 2015 in both urban and rural areas. Based on recall information as survey was collected in the first half of 2019.

WHAT WERE THE LESSONS LEARNED?

Interventions that aim to improve school management by replacing school principals can have negative effects in the short to medium term.

The Peruvian reforms were unusual in that they not only introduced merit-based appointments for future principals but also required existing principals to undergo retroactive merit-based testing and removed those who did not meet the standard. The findings of this research suggest that the negative impacts of a change in principal may be enough to counteract the potential positive effects of more effective management. This finding

is in line with evidence from the U.S. that suggests that changing school principals typically has negative effects for the first couple of years.⁶ However, some of the evidence from this study in Peru suggests that these negative impacts may have been sustained over time. Follow-up research will explore whether and to what extent these effects are mitigated over time as the new principals settle into their roles.

Results-based financing may need to be implemented in different ways for different groups of schools.

Even if results-based financing is implemented unilaterally throughout a country, its impact may be different in different areas. In Peru, the introduction of a results-based approach for selecting and paying principals in rural areas had an

unforeseen impact due to a lack of candidates with the relevant skills. Despite having passed the evaluation, the new principals did not have substantially more skills than those whom they replaced. Having often worked as teachers in smaller schools where the principal also had teaching duties, these new principals appear to have been slow to transition into full-time management, further reducing the potential benefits of the reform. The findings of this research suggest that results-based financing may need to be implemented in particular ways at the local level or rolled out differently in different areas of a country to achieve the same outcomes. The Government of Peru is in the process of introducing amendments to the policy to provide additional support to principals in rural areas (as discussed in the next section).

CONCLUSION

The quality of school management can affect how much students learn. Researchers evaluated a nationwide reform in Peru that introduced a results-based selection and payment system for school principals. Under this system, all existing principals were subject to an evaluation and those who failed it were replaced. The evaluation found that the reform did not significantly improve test scores of students from those rural schools whose principals had changed, and also had no significant effect on the slightly improved test scores of students from urban schools. Data from the evaluations, surveys, and analysis of principals in smaller and larger schools all suggest that the newly appointed principals in rural areas had lower levels of skills than those in urban areas and did not have substantially higher levels of skills than those whom they replaced. The new principals also appear to have struggled to use their time

effectively in transitioning to full-time management.

In October 2019, the Government of Peru announced a series of amendments to the policy that were designed to provide more career opportunities for successful principals. In the original reform, teachers who were promoted to principal had no opportunity for further promotion and received limited training. Under the new system, two new positions were created: network principal and network vice-principal. Each is meant to oversee a network of five to 10 rural schools. School vice-principals can be promoted to network vice-principal or principal with an associated increase in salary, and principals can be promoted to network principals. Each step up requires the candidate to take the *Evaluacion de Acceso* again. These results-based rewards provide further incentives for newly appointed principals to improve the learning outcomes of students in their schools. In addition to providing

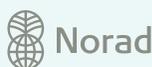
further opportunities and incentives to principals, the network system also provides mentorship and training to school leaders in rural areas. As of 2020, the new system has already been piloted in 300 newly created rural networks across the country covering approximately 3,500 schools, 10,000 teachers, and 150,000 students. The goal of the pilot is to gather further evidence to inform the proposed amendments to the results-based policy to be submitted to Congress.

The evaluation showed that the meritocratic selection of principals did not have any significant effects on student achievement in urban areas and had only a short-term negative impact in rural areas.

- 1 Bloom, N., R. Lemos, R. Sadun, and J. Van Reenen. 2015. "Does Management Matter in Schools?" *The Economic Journal* 125 (584): 647–74.
- 2 Finan, F., B. Olken, and R. Pande. 2015. "The Personnel Economics of the State." National Bureau of Economic Research Working Paper No. 21825, NBER, Cambridge, MA.
- 3 Chen, L., F. Child, E. Dorn, and R. Morales. 2019. "An Interview with Former Peruvian Minister of Education Jaime Saavedra." <https://www.mckinsey.com/industries/social-sector/our-insights/an-interview-with-former-peruvian-minister-of-education-jaime-saavedra>.
- 4 The negative impact was 0.1 SD in reading and 0.09 SD in math.
- 5 The researchers used data from the first, multiple-choice phase of the evaluations, which were strongly predictive of the candidate's overall score in the evaluation.
- 6 Miller, A. 2013. "Principal Turnover and Student Achievement." *Economics of Education Review* 36: 60–72.

RESULTS IN EDUCATION FOR ALL CHILDREN (REACH)

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