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Teacher and School Administrator Incentives for Improving Education Delivery in Khyber Pakhtunkhwa Province, Pakistan

About the project

Funded by: International Growth Center

Key Counterpart: Elementary and Secondary Education Department, Khyber Pakhtunkhwa

Impact: This project resulted in a formalized engagement between academics and the education department through a Memorandum of Understanding that led to further engagement between academics and policymakers.

This Policy Brief is based on an IGC report, "Teacher and School Administrator Incentives for Improved Education Delivery in Khyber Pakhtunkhwa (KP) Province, Pakistan" prepared by a team lead by Dr. Masooma Habib (CDPR) and was compiled by Mehroz Alvi (CDPR).

In brief

- Teacher absenteeism has a strong impact on student performance both in terms of learning outcomes and enrolment.
- Province-wide data shows that higher teacher attendance, parent-teacher councils, and better school infrastructure are associated with higher student enrollment.
- Carefully designed and monitored pay-for-performance programs can improve teacher attendance and quality.

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This study, prepared at the request of Department of Education, Khyber Pakhtunkhwa province, Pakistan, addresses the following questions: 1) What is the international experience on interventions related to teacher incentives that improve education outcomes? 2) How can the existing service rules be used to improve incentives for greater teacher effort and better education outcomes? 3) What explains the high variation of school performance in KP and what are the interventions, consistent with international experience and KP service rules that will help improve KP Education outcomes?

The context

Administrative and budgetary changes in recent years in Pakistan have devolved education to the provinces. In this devolved setting, the government of Khyber Pakhtunkhwa (KP) province is striving to improve the quality and delivery of its education system. Many challenges need to be addressed. Only 63% of 4-9 year olds were enrolled in school in 2012-13, with female enrollment at an even lower 56%. Net enrollment for middle school was barely 40%, indicating that the majority of children in the middle school age group have either dropped out or did not attend school. The mean level of teacher absenteeism rate is high at 16%, 21% and 17% for primary, middle, high schools respectively. Learning achievements in KP, as in the other provinces, remain alarmingly low. Only 40% of grade 5 children showed basic competencies in second grade level mathematics and languages tests.

As part of the overall reform effort to improve education outcomes, the KP government is focusing on the role of teachers and the effort they put in to improve learning. The education department employs 55% of the civil servants in the provincial government. With about 180,000 employees overall, teachers make up at least three quarters of the Elementary and Secondary Education department employment. Improving the performance of this large section of the civil service would significantly contribute towards better overall governance in the province.

An important recent initiative by the KP government is the establishment of an Independent Monitoring Unit (IMU)¹ to collect monthly data on key school-level indicators. The objective is to identify strengths and weaknesses in the schooling system including teacher performance. The availability of data provides the opportunity to KP education policy makers to engage with policy researchers in designing effective interventions, based on empirical evidence, that engender performance

transparency and strengthen incentives for improved teaching.

Lessons from national and international experience in teacher incentive programs²

International literature indicates that teacher incentives and other interventions have the highest impact in low performance settings (Murnane and Ganimian, 2014). To address the problem of teacher absenteeism, effective supervision by officials and community members is key in ensuring better teacher attendance as shown in India (Muralidharan et al, 2014).

Financial incentives for teachers can have a positive impact on learning (Muralidharan and Sundararaman, 2011; Glewwe et al, 2010; Andrabi et al, 2008). However teacher pay for performance schemes have to be carefully designed and monitored for their impact and implementation. A teacher bonus offer in a public private partnership program in Punjab, Pakistan had limited impact on test scores because the link between improvement in student scores and teacher bonuses had not been successfully worked out at the school level (Barrera-Osorio and Raju, 2010).

Tests associated with high stake penalties and rewards can be susceptible to manipulation (Glewwe, et al, 2010). Moreover modest financial incentives have as much impact on learning outcomes and teacher attendance as larger financial incentives (Muralidharan et al, 2014).

Incentivizing principals without independent monitoring has no impact on teacher attendance and improved learning (Kenya; Kremer and Chen, 2001). On the other hand, respect and regard for students, better classroom practices and instructional effort have a positive impact on student learning (Bihar, India; Pritchett, 2013; Ecuador; Araujo, 2013).

Consistent with the international experience, KP government is already providing incentives focused on low performing areas. Currently, seven districts viz., Kohistan, Battagram, Tor Ghar, Dir Lower, Dir Upper, Shangla and Tank have been identified as "hard areas" for girls' schools. Female education supervisors are given special allowances to visit and inspect schools. Moreover, the girls stipend program for secondary students has been launched in seven KP districts with low enrollments (Hangu, Peshawar, Bannu, Lakki, D.I Khan, Shangla and Nowshera). Girls have also been awarded scholarships in Torghar and Kohistan.

¹ The Independent Monitoring Unit (IMU) was set up as a three-year project and data collection started in March 2014.

² The review includes four synthesizing studies of the international education literature in teacher effectiveness and learning outcomes: Murnane and Ganimian's (2014) 115 impact evaluations in 33 low and middle-income countries; a study by Glewwe et al (2011) focusing on 43 out of 9000 studies published between 1990 and 2010; McEwan's (2014) metaanalysis of 77 random experiments focusing on improved primary learning, and Pritchett's (2013) analysis of studies and data on learning outcomes.

KP civil service rules and policies affecting teacher incentives

No single, readily available document lists the civil service rules relevant for the KP education system. Identifying the rules requires sifting through many documents. This was done by the research team at the request of the government and a booklet was prepared that could be shared with education department staff and schools.

The detailed review of the rules carried out by the research team shows that the civil service rules for KP teachers and administrators potentially contain a number of incentives to improve teacher performance and student learning. However, these incentives are not currently aligned to the government's objectives of improving education outcomes. Promotion and up-gradation policies, performance evaluation reviews and transfer policies are not linked to teachers' attendance rates or student learning. A clearer criterion for measuring teacher performance on the basis of student learning needs to be developed within the framework of existing rules and policies.

Statistical analysis to explain variation in school performance

Analysis of the Independent Monitoring Unit (IMU) 2014 school level data³ showed that schools in KP are predominantly primary level (80%) and boys only (60%). There is a huge variation in student attendance rates ranging from 2% to 100% for primary schools and 5% to 100% for secondary schools. There is also a large variation in school size with mean enrollment of around 170 students but ranging from 10 to 2848 students. The mean number of teachers falls between 4-5 for primary schools and 9-10 for middle/secondary schools, yielding a student teacher ratio of 37:1 for primary and 23:1 for middle/secondary schools. The average teacher absenteeism rate, as in other provinces, is also high at almost 20%.

Consistent with evidence from other provinces, middle/secondary schools are better equipped with basic infrastructure facilities compared to primary schools. A typical school in KP has 4 basic facilities out of 5 as captured by the infrastructure index⁴ both at the primary and secondary levels. Middle/secondary schools have higher enrollments with a larger number of sanctioned teaching posts when compared with primary schools.

To explain the variation in school performance, a statistical model was constructed and

applied to the IMU data. Reduction in absenteeism of teaching and non-teaching staff, active parent teacher councils and school-level infrastructure are associated with significant positive gains in attendance to enrollment rates. More importantly, ensuring teacher presence for two additional days at a typical single teacher school has as much of an impact on attendance to enrollment rate as investing in one new infrastructure facility for the school. Thus incentives designed to increase teacher presence are a crucial first in improving education outcomes in KP.

Data shows high variation in school performance within districts and tehsils. To study why some schools perform better or worse than others (beyond what can be captured by the statistical model), focus group interviews representing high performing schools were conducted.

Teacher and administrator focus group discussions

Two focus group discussions were conducted, one each with administrative officials and teachers from KP districts representing high and low performing schools.⁵ The discussions revealed specific insights into the dynamics of varying school performance.

Reasons for high performance included leadership skills and personal commitment by district officials and school heads to achieve results; frequent school visits by government monitors, including the IMU staff; monthly meetings to recognize dedicated teachers based on attendance and results, and active Parent Teacher Councils (PTCs).

A major reason for low performance was lack of teachers and unfilled vacant teacher posts. This resulted in overloading existing teachers, who are also required to perform non-teaching duties such as administering polio vaccinations. Other reasons given for low performance were: teacher inductions and postings made on the basis of political affiliations rather than merit; ineffective performance evaluations; complicated rules for postings, transfers and promotions unlinked to performance; lack of enforcement of rules calling for disciplining teacher truancy; wide spread cheating in school matriculation board exam serving as a deterrent to real learning by students; lack of rewards or recognition for teachers who attend regularly, and the existence of tribal systems causing difficulties for local administrators in reporting teacher absence.

³ School level data for student learning is not currently available, and a link between ASER and IMU data was formed to create a proxy for learning by using attendance to enrollment ratios for a working sample of 21,000 schools.

⁴ Generated by indexing five different components of infrastructure i.e. Building availability, boundary wall, water functional, electricity functional, and toilet functional.

⁵ The first group included officials from district administration representing tehsils with low (Shangla, Bunner and Kohistan) and high (Kohat and Mardan) performing schools. The second group consisted of teachers and principals representing low and high performing boys and girls primary, secondary, and higher secondary schools from Peshawar.

Recommendations concerning teacher incentives to improve performance

The recommendations presented below are based on the analysis of IMU data, focus group discussions with teachers and administrators, and the review of literature and legislative rules.

Short-Term Recommendations

- Focus on improving teacher incentives in low performing schools and areas. Interventions can be combined with existing programs on girls' scholarship stipend and the "hard area" allowance for female education supervisor. However, follow up and monitoring of program implementation is essential to ensure that interventions have the intended effect.
- Focus on reducing high teacher absenteeism
- Fill vacant teacher posts to reduce teacher shortage
- Increase monitoring of schools and teachers by administrators, principals and community
- Give recognition awards for teachers who attend regularly
- Allow modest monetary compensation for sanctioned leave not availed
- Ensure that teacher and staff evaluations for promotions and transfers include penalties for high absence rates
- Develop performance measures in the IMU data base for students, teachers and schools
- Combine on-going infrastructure improvement initiatives such as Tameer-e-school with improved teacher attendance and student learning

Medium-Term Recommendations

- Introduce teacher assessments; results of these assessments can be linked to repercussions on promotions and postings.
- Make Parent Teacher Councils more effective.
- Introduce low stakes standardized student assessment in grade 5 and 8.
- Arrange student and teacher remedial classes depending on the needs of the area and school
- Align teacher performance to progress at the school level
- Change classroom practices regarding student discipline, teacher attitude and teaching content.
- Pay equal attention to building infrastructure as well as improving activities inside school buildings: teacher presence, teacher skills and subject knowledge and the standard of student learning.

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