



Improving teacher quality by rewarding good teaching

Children suffer when schools struggle to attract and retain high quality teachers. This struggle begins in hiring, as schools lack reliable ways to measure a candidate's teaching ability. One way to address this is performance pay, which is rapidly gaining popularity in schools worldwide, and amounts to paying teachers based on how well they teach. It makes use of candidates' knowledge about their own ability, ideally attracting better teachers who stand to gain more from accepting the job.

New research explores whether paying teachers based on their performance works well in practice, using a randomized controlled trial in Pakistan. While previous research focused solely on how performance pay incentivizes existing teachers, this research also estimates benefits that performance pay has in attracting better teachers. It also explores possible negative consequences of performance pay, like incentivizing teachers to focus on standardized test preparation at the expense of general child development. The work finds that performance pay is twice as effective at improving student outcomes as previously thought, and finds no evidence of negative consequences on the broader classroom environment for teachers who like performance pay.

KEY FINDINGS

- Tying teacher salaries to their students' test scores improves student test scores
- The effect is strongest among teachers who prefer to paid for performance
- These teachers also improve more holistic measures of learning
- Forcing performance pay on teachers who prefer standard contracts harms more holistic measures of learning

Research Approach

Between October 2017 and June 2019, researchers conducted a two-phase study across a private school chain in Pakistan with over 300 schools. The first phase was a contract choice experiment, and the second was a randomized controlled trial implementing various contracts.

Contract Choice Experiment

In the contract choice phase, 2,480 teachers were asked to choose between a flat wage or performance pay for their next year's payment contract. To make sure they took the decision seriously, they were told that their choice had some chance of being implemented. Some teachers were also told how they compared to other teachers before making their choice.

This allowed researchers to test whether better teachers chose performance pay. They measure the quality of a teacher by the teacher's value-added, which is a standard metric that captures how a teacher affects student standardized test scores after controlling for how well students performed in previous grades.



Job Choice Experiment

In the second phase, researchers randomly split schools into three groups and gave each group a different contract for the 2018-2019 school year. At schools in the first group, teachers were all given their choice of contract. In the second, all teachers were given a flat raise. In the third, all teachers were paid based on their performance.

Randomly assigning these three groups allowed researchers to measure how performance pay affected teacher movement between schools, the responses of existing teachers, and the classroom environment. They measured these effects using data collected from:

- Thousands of hours of in-classroom recorded video
- Student test scores and survey responses
- Teacher and principal survey responses
- Administrative data about teacher attributes



Research Findings

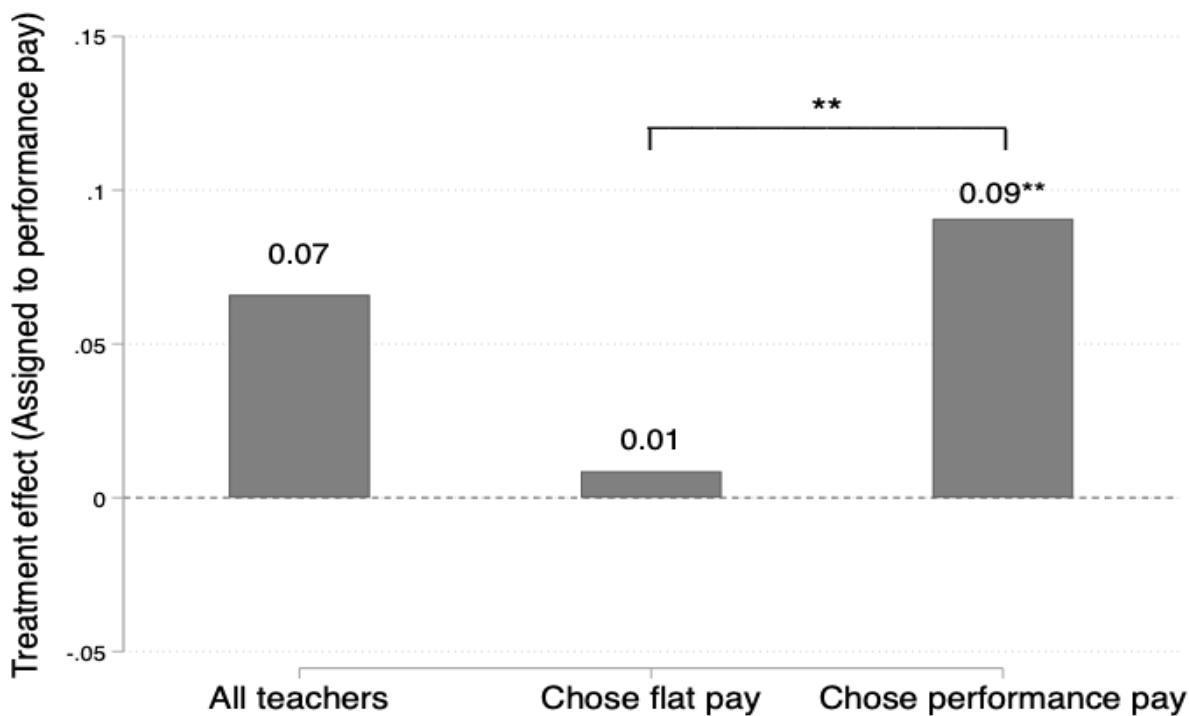
Performance Pay Attracts Better Teachers and Teachers Motivated By Incentives

In the contract choice experiment, teachers who chose performance pay were, on average, better teachers even with flat wages. The job choice experiment suggests they are also much more motivated by financial incentives. As well, many highly skilled teachers moved schools in order to receive performance pay, and lower skilled teachers moved to receive a flat wage.

Performance Pay works by making use of teachers' knowledge about their own skills

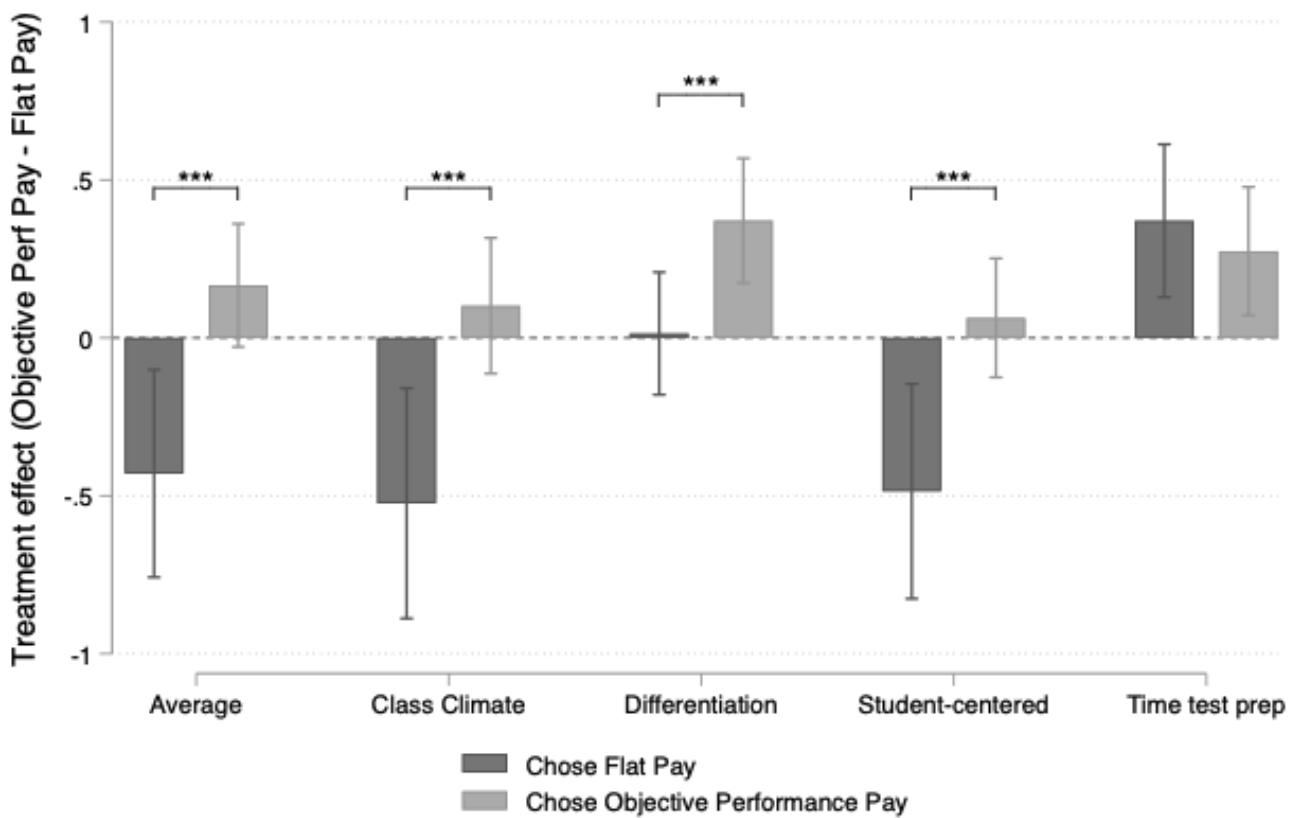
In the contract choice experiment, telling teachers how they compare to other teachers doubles the strength of association between teacher ability and which contract they choose. As well, knowing a teacher's contract choice more than triples how well we can predict teaching quality compared to just using standard hiring criteria.

Figure 1: Treatment Effect by Contract Choice



Research Findings

Figure 2: Treatment Effects on Classroom Observations by Contract Choice



Offering Performance Pay Attracts Teachers who care about general child development

Teachers who preferred and were given performance pay in the job choice experiment were no less likely to volunteer to help financially disadvantaged students than teachers given flat wages. Their students also had better scores even on non-memorization questions and were less likely to dislike school.

Forcing Performance Pay on Teachers who do not want it Harms the Classroom Environment

Classroom footage showed that teachers who preferred a flat wage but received performance pay in the job choice experiment had significantly worse classroom environments than teachers who wanted performance pay. They yelled at their students more, and engaged in less student-focused instruction.

Analysis

The evidence shows that performance pay improves teaching quality, not just by motivating existing teachers but also by attracting teachers with more ability or who respond highly to incentives. **Taken together, the effect of performance pay on student test scores is twice as large as previous research estimates.**

This favourable result is driven by the way performance pay makes use of teachers' knowledge about their own skills and response to incentives. This is clear from the fact that teachers respond more to performance pay when given more information about their ability.

This allows performance pay to do a better job of filtering candidates than traditional hiring practices, which is further evidenced by the finding that a teacher's choice of contract is a useful signal for their ability even after controlling for the information normally used to make hiring decisions.

Finally, the evidence from student surveys, classroom footage, and teacher surveys suggests that performance pay does not attract teachers who focus on test scores at the expense of students' holistic development. Such negative consequences typically associated with performance pay are concentrated amongst teachers who would have preferred a flat wage but are forced into a performance pay contract. This underscores the value of offering teachers contract choice.

Policy Recommendation

→ It is suggested that policymakers prioritizing children's education offer performance pay contracts to teachers to improve teaching quality. These contracts attract teachers who improve student test scores without sacrificing holistic student development.

The recommended policy would give teachers the option to choose whether to receive performance pay, since forcing uninterested teachers into performance pay could harm a child's long-term development even if test scores aren't directly impacted.

Even if this ideal policy is not feasible, it is still expected that implementing performance pay at a school-wide level would benefit students. This would require judgement as to whether the benefits of incentivizing and attracting excellent teachers outweigh the potential harm to holistic learning from giving weaker teachers their second-choice contract.