

TEACHER ABSENCE IN INDIA: A SNAPSHOT

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Abstract

Twenty-five percent of teachers were absent from school, and only about half were teaching, during unannounced visits to a nationally representative sample of government primary schools in India. Absence rates varied from 15% in Maharashtra to 42% in Jharkhand, with higher rates concentrated in the poorer states. We do not find that higher pay is associated with lower absence. Older teachers, more educated teachers, and head teachers are all paid more but are also more frequently absent; contract teachers are paid much less than regular teachers but have similar absence rates; and although relative teacher salaries are higher in poorer states, absence rates are also higher. Teacher absence is more correlated with daily incentives to attend work: teachers are less likely to be absent at schools that have been inspected recently, that have better infrastructure, and that are closer to a paved road. We find little evidence that attempting to strengthen local community ties will reduce absence. Teachers from the local area have similar absence rates as teachers from outside the community. Locally controlled nonformal schools have slightly higher absence rates than schools run by the state government. The existence of a PTA is not correlated with lower absence. Private-school teachers are only slightly less likely to be absent than public-school teachers in general, but are 8 percentage points less likely to be absent than public-school teachers in the same village. (JEL: O15, I21, H41, H52)

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1. Introduction

This paper presents new nationally representative data on teacher absence from unannounced visits to Indian primary schools.¹ The study covered 20 Indian states, representing 98% of the population, or roughly one billion people. Three unannounced visits were made to each of over 3,700 schools. The survey focused on government-run primary schools, but it also covered rural private schools and private-aided schools located in villages where government schools were surveyed.

Our absence data is from direct physical verification of the teacher's presence, rather than attendance logbooks or interviews with the head teacher. We consider a teacher to be absent if the investigator could not find the teacher in the school during regular working hours.²

2. Level of Absence

With one in four teachers absent at a typical government-run primary school, India has the second-highest average absence rate among the eight countries for which absence calculations based on a similar methodology are available (Table 1).³ Only 45% of teachers were actively engaged in teaching at the time of the visit.⁴

Within India, the absence rate ranged from 15% in Maharashtra to 42% in Jharkhand (Table 2).⁵ Absence rates are generally higher in low-income states: doubling per capita income is associated with a 4.7 percentage point lower predicted absence. The rates of teaching activity among the teachers who are present

1. Studies that have examined teacher or head teacher absence in India include the PROBE Report (1999) and the Pratiche Trust Report (2002), and Pandey (2005). Other studies of teacher absence in developing countries include Glewwe, Kremer, and Moulin (1999) in Kenya and World Bank (2001) in Honduras. This study differs in examining data that is as close as possible to being nationally representative and in exploring how absence correlates with a wide range of potential determinants at the individual, school, and policy levels.

2. The measured absence rates exclude part-time and volunteer teachers; those who are reported by the respondent to have transferred, worked in a different shift, retired/resigned, or died; and teachers at schools reportedly closed due to a scheduled holiday, extreme weather (such as rain or heat waves), school building construction or repair, and official school functions (such as exams and picnics). For details on survey methodology and absence definitions, see the full paper (Kremer et al. 2004).

3. Most of these estimates come from other countries covered by the same research project on provider absence in education and health, carried out by the authors of this study and using standardized methodology (Chaudhury et al. 2005).

4. Even with a generous allowance for the possibility that enumerators' visits diverted some teachers from teaching, it is unlikely that more than half of the teachers would have been teaching at the time of the visit. See Kremer et al. (2004).

5. Table 2 includes 19 of the 20 states surveyed. Fieldwork in the twentieth state, Delhi, was delayed for bureaucratic reasons, and the data were received too late to be analyzed here.

TABLE 1. Teacher absence rates by country.

| | Teacher absence (%) |
|------------------|---------------------|
| Peru | 11 |
| Ecuador | 14 |
| Papua New Guinea | 15 |
| Bangladesh | 16 |
| Zambia | 17 |
| Indonesia | 19 |
| India | 25 |
| Uganda | 27 |

Source: Chaudhury, Hammer, Kremer, Muralidharan, and Rogers (2005) for most countries; Habyarimana et al. (2005) for Zambia; World Bank (2004) for Papua New Guinea.

are lower in higher-absence states and schools. In some states, only 20% to 25% of teachers were engaged in teaching at the time of the visit.

Absence rates are considerably higher than could be accounted for by official nonteaching duties, such as staffing polling stations during elections or conducting immunization campaigns, which are sometimes cited as important causes of absence. Based on the responses of each school's head teacher or primary respondent, official nonteaching duties account for only about 4% of total absences. In other words, on any given day, only about 1% of primary teachers are absent because they are carrying out official non-teaching-related duties.⁶ Preliminary calculations by the authors suggest that 8–10 percentage points of absence could potentially be attributed to annual leave, medical leave, and other officially sanctioned reasons. This implies that variation across states in “potentially unauthorized” absence may be considerably greater than variation in raw absence rates.

TABLE 2. Teacher absence in public schools by state.

| State | Absence(%) | State | Absence(%) |
|------------------|------------|------------------|------------|
| Maharashtra | 14.6 | West Bengal | 24.7 |
| Gujarat | 17.0 | Andhra Pradesh | 25.3 |
| Madhya Pradesh | 17.6 | Uttar Pradesh | 26.3 |
| Kerala | 21.2 | Chhatisgarh | 30.6 |
| Himachal Pradesh | 21.2 | Uttaranchal | 32.8 |
| Tamil Nadu | 21.3 | Assam | 33.8 |
| Haryana | 21.7 | Punjab | 34.4 |
| Karnataka | 21.7 | Bihar | 37.8 |
| Orissa | 23.4 | Jharkhand | 41.9 |
| Rajasthan | 23.7 | Weighted Average | 24.8 |

6. While stated reasons for absence should be taken with a grain of salt, there does not appear to be any reason for head teachers to understate this cause of absence.

TABLE 3. Absence by type of school.

| | Public Schools | Nonformal schools | Private aided schools | Private schools |
|---------------------------|----------------|-------------------|-----------------------|-----------------|
| Weighted teacher absence | 24.8% | 28.0% | 20.1% | 22.8% |
| Rate of teaching activity | 44.8% | 42.9% | 58.8% | 48.5% |
| Number of observations | 34,525 | 393 | 3,371 | 9,098 |

3. Correlates of Teacher Absence

We discuss below how teacher absence varies with pay and daily incentives to attend work. We then discuss how absence rates vary with institutional structure, including ties between teachers and the local community, contract form, and type of school (public, private, and private-aided). The discussion below will occasionally refer to the simple differences in means shown in Tables 3–5, but focuses on the multivariate OLS regressions reported in Table 6 (very similar results are obtained from a probit specification). Note that these regressions are based on visit-level observations, meaning that each teacher-visit combination is treated as one observation.

Higher teacher salaries do not seem to be associated with lower teacher absence. We did not directly collect data on individual teacher salaries, but in every Indian state, salaries increase with education, experience, and rank. Teachers with a college degree are 2–2.5 percentage points more likely to be absent. Being ten years older increases the probability of absence by around 1.0–1.5 percentage points (though this effect becomes weaker after controlling for state fixed effects). Head teachers are 4–5 percentage points more likely to be absent than regular teachers (even after controlling for age and education). Since absence increases with all three of these variables, it is likely that better-paid teachers are more absent. Similarly, although regular teachers are typically paid much higher salaries than contract teachers, there is no significant difference in absence between the two groups. Finally, since nominal teacher salaries are very similar across states, relative teacher salaries are higher in poorer states, and yet poorer states have higher absence rates.

One reason why higher pay is not associated with lower absence may be that teachers feel little risk of being fired for absence. Only one head teacher in nearly 3,000 public schools reported ever dismissing a teacher for repeated

TABLE 4. Absence rates by type of teacher (public schools only).

| | Head | Deputy head | Permanent/ regular | Contract/ informal |
|------------------------|-------|-------------|-----------------------|-----------------------|
| Absence rate | 30.2% | 22.2% | 23.1% | 24.0% |
| Number of observations | 7,177 | 1,979 | 23,333 | 2,037 |

TABLE 5. Absence rates (in %) by various individual and school-level characteristics (public schools only).

| Category | Yes | No |
|---|------|------|
| Rich state (1996–97 per capita income > \$275)? | 21.7 | 28.0 |
| Female? | 21.9 | 27.2 |
| Older than 40 years? | 27.1 | 21.4 |
| Completed bachelors degree? | 24.2 | 21.7 |
| School has a toilet for teachers? | 21.6 | 27.1 |
| School has electricity connection? | 19.2 | 28.2 |
| Commute <30 minutes? | 21.4 | 25.2 |
| Rural school? | 25.2 | 22.9 |
| Head teacher is absent? | 22.2 | 18.5 |
| School inspected in the past 3 months? | 21.0 | 27.0 |
| Teacher originates from this town/village? | 21.6 | 23.3 |
| PTA has met in the past 3 months? | 21.0 | 26.5 |

Note: All differences in means are significant at the 5% level.

absence. While few teachers are subject to much risk of being fired, the costs and benefits of attending school on a given day could vary among teachers depending on working conditions, as well as on their vulnerability to sanctions (such as receiving undesirable postings). The vulnerability of teachers to those sanctions presumably depends both on the monitoring regime and on the teacher's level of power. (Power differentials may explain the higher absence rates of older, more educated, and more experienced teachers, as well as the finding that males are significantly more absent than females). Nonpecuniary factors other than working conditions could also affect teachers' costs and benefits of attending school.⁷

Teacher absence is considerably lower in schools with better infrastructure, a potentially important element of working conditions. The infrastructure index in Table 6 assigns one point each for the existence of toilets for the teachers, an electricity connection, a library, covered classrooms, and nonmud floors. Under this specification, each point on the index is associated with a 1.0 to 1.5 percentage-point reduction in the probability of absence—so that moving from 0 to 5 on the index reduces the predicted absence rate by 5.0 to 7.5 points. Since one of the ways in which better teachers might be rewarded is through better postings (to schools with superior infrastructure), we also test this relationship using only the teachers who are on their first posting; we find that better infrastructure is still significantly associated with lower teacher absence.

Other working conditions that might be expected to affect teacher motivation are the remoteness of the school and the teaching conditions. Anecdotal evidence

7. Teacher training, for example, is aimed in part at reinforcing teachers' professional motivation, and therefore might be hoped to improve attendance. In our data, however, having attended a training program in the past six months is not associated with lower absence in any of the specifications. Similarly, belonging to a district that has a recognition scheme for teachers is not associated with lower teacher absence.

TABLE 6. OLS estimates of teacher absence.

| | Dependent variable (visit-level observation): | | |
|---|---|------------------------------------|---|
| | [1] No state or village fixed effects | [2] With state fixed effects | [3] With village/town fixed effects |
| Gender (1 = Male) | 1.34 (0.54)** | 2.09 (0.53)*** | 2.06 (0.53)*** |
| Age | 0.12 (0.03)*** | 0.05 (0.03) | 0.08 (0.03)** |
| Has a college degree | 2.31 (0.51)*** | 1.89 (0.51)*** | 1.86 (0.51)*** |
| Attended training in last 6 months | 0.26 (0.59) | 0.17 (0.60) | -0.58 (0.65) |
| Head teacher | 4.19 (0.64)*** | 4.54 (0.62)*** | 4.61 (0.64)*** |
| Contract teacher | -0.6 (1.32) | 0.06 (1.25) | 1.49 (1.28) |
| Belongs to a teachers union | -0.31 (0.64) | 0.56 (0.64) | -0.07 (0.73) |
| Married | 0.56 (0.75) | 1.12 (0.74) | 0.94 (0.76) |
| Has children of school age (5–14) | -1.08 (0.53)** | -1.06 (0.51)** | -0.84 (0.51)** |
| Paid regularly (1 = yes) | 0.5 (0.79) | 0.18 (0.78) | 1.86 (0.96)* |
| Recognition/award scheme exists in district | -0.87 (0.68) | -0.9 (0.65) | -0.08 (0.85) |
| School infrastructure index (1–5) | -1.5 (0.32)*** | -1.49 (0.32)*** | -0.93 (0.39)** |
| Rural school | 0.77 (0.84) | -0.09 (0.79) | |
| Distance to nearest paved road (1–5) | 0.84 (0.37)** | 0.95 (0.37)** | 1.08 (0.64)* |
| Multigrade teaching | 1.17 (0.70)* | 0.67 (0.67) | 0.9 (0.82) |
| Pupil–teacher ratio | -0.05 (0.02)*** | -0.04 (0.02)** | -0.08 (0.02)*** |
| School has been inspected in past 3 months | -2.28 (0.66)*** | -1.94 (0.64)*** | -2.45 (0.85)*** |
| Mean parental education of 4th-grade children (1–7 scale) | -1.42 (0.36)*** | -1.15 (0.38)*** | -0.74 (0.46) |
| Duration of current posting (years) | -0.04 (0.04) | 0 (0.04) | 0.02 (0.04) |
| Teacher’s place of origin is village/town where school is located | -0.37 (0.54) | -0.96 (0.53)* | -0.86 (0.56) |
| PTA exists | -0.79 (0.96) | 0.44 (0.92) | -1.83 (1.21) |
| PTA met at least once in last 3 months | -1.7 (0.72)** | -1.36 (0.68)** | 0.16 (0.87) |
| Midday meal exists | -1.99 (0.70)*** | -1.36 (0.97) | -2.35 (1.33)* |

(continued)

TABLE 6. CONTINUED.

| | Dependent variable (visit-level observation): | | |
|--------------------------------|---|------------------------------------|---|
| | [1] No state or village fixed effects | [2] With state fixed effects | [3] With village/town fixed effects |
| Government public school | 2.34 (1.23)* | 3.58 (1.21)*** | 7.88 (1.37)*** |
| Private aided school | 0.01 (1.41) | 1.65 (1.41) | 7.54 (1.64)*** |
| Log of state per-capita income | -6.73 (2.49)*** | | |
| Constant | 51.14 (9.80)*** | 22.81 (2.45)*** | 15.59 (2.82)*** |
| Observations | 41725 | 43130 | 43142 |
| R-squared | 0.09 | 0.09 | 0.18 |

Notes: Robust standard errors clustered at the school level are given in parentheses.

The binary dependent variable (0 = Present, 1 = Absent) has been multiplied by 100 to allow the coefficients to be read as percentage changes.

Regressions include a full set of controls for the day of week of the visit, for the round of the visit, and for the time of day of the visit relative to the school day.

*significant at 10%.

**significant at 5%.

***significant at 1%.

shows that many teachers prefer less remote schools. In our data, teachers in schools that are far from a paved road are nearly 4 percentage points less likely to be in school than those closest to a road. Schools whose teachers have to simultaneously teach multiple grades (multigrade teaching) have a slightly higher rate of absence in the column 1 regression, although the effect is not significant when state fixed effects are included.

Although inspections in India are often considered toothless, teachers in schools that had been inspected in the three months prior to the visit were about 2 percentage points less likely to be absent. Because school inspections may not be allocated randomly,⁸ we also test an alternative measure of inspection intensity: the fraction of the schools in a district that have been inspected recently (since inspections are determined at the district level). Moving from a district with no inspections in the past three months to one where every school has been inspected in the past three months is associated with a seven-percentage-point lower level of teacher absence (equivalent to nearly 30% of the level of absence observed in the data).⁹ The addition of state fixed effects makes this result insignificant, however, raising the possibility that the average inspection variable may be picking up the general quality of educational administration in the state.

8. However, if we believe that schools with problems may be inspected more often, then our coefficients would understate the relation between inspections and reduced absence.

9. See the full paper for these tables.

Local communities could potentially provide an alternative source of monitoring. One way to interpret the lower absence rates in schools with more educated parents and high pupil-teacher ratios is that local monitoring is more effective when parents are more educated and more parents could potentially complain about absence. (Of course, alternative explanations, including reverse causality, are possible in each case.) Similarly, schools with PTAs that have met in the past three months have lower absence. This could reflect either the importance of local community or a tendency for more conscientious teachers and headmasters to organize PTA meetings.

While a priori reasoning suggests local monitoring could potentially affect teacher behavior, the regressions do not provide much guidance about how policies could reduce absence by strengthening ties between schools and local communities. Teachers who are from the local community do not have lower absence rates than teachers from outside the community after the controls in Table 6 are included. The duration of a teacher's posting at the school has no significant relationship with absence. Absence rates in nonformal schools, which are staffed by teachers from the community, are higher than in regular government schools (Table 3). Schools with and without parent-teacher associations have similar absence rates.

It is worth considering the implications of alternative forms of contractual arrangement. Contract teachers in the public system have much lower wages (typically less than a third of the wages of regular teachers), are presumably easier to dismiss, and have a similar level of absence (Table 6).

Private schools similarly have much lower wages than public-school teachers (regular teachers in rural government schools typically get paid about 3 to 8 times more than their counterparts in the rural private schools), but also a greater chance of dismissal for absence (35 out of 600 private schools reported a case of the head teacher dismissing a teacher for repeated absence or tardiness, compared with the 1 in 3,000 in government schools noted earlier).

Private-school teachers are only a little less likely to be absent than public-school teachers in general (Table 3), but are 8 percentage points less likely to be absent than public-school teachers in the same village¹⁰ (Table 6, column 3). Mechanically, this is because private schools are disproportionately located in villages with particularly high absence rates in government schools. Advocates of private schools may interpret the correlation between the presence of private schools and weakness of public schools as suggesting that private schools spring up in areas where government schools are performing particularly badly, while opponents may argue that the entry of private schools leads to exit of politically

10. While teachers in private aided schools have lower absence rates than those in private schools in the entire sample, they also have a much higher absence rate (7.5 percentage points more) than private-school teachers in the same village.

influential families from the public school system, and further weakens pressure on public-school teachers to attend school.

4. Teacher Absence and Student Outcomes

A 10% increase in teacher absence is associated with 1.8% lower student attendance, as well as with a 0.02 standard deviation reduction in test scores on a simple 14-question test given to a sample of 4th-grade children. These coefficients are robust to controls but small in magnitude. They may underestimate the impact of teacher absence for two reasons, however. First, measurement error in estimating absence rates for the relevant teachers will attenuate the coefficients downward. Second, if marginal students drop out of school in response to high teacher absence rates, those students who remain in school may have different background characteristics than students in schools with lower teacher absence. (On the other hand, to the extent that high teacher absence spurs strong students to move to private schools, these coefficients may be biased upward.)

5. Conclusion

With one in four government primary school teachers absent on a given day, and only one in two actually teaching, India is wasting a considerable share of its education budget, and missing an opportunity to educate its children.

While our results show that the primary education system is functioning very inefficiently, they can provide only tentative guidance as to how it may be fixed. One way of interpreting our findings is that overall teacher compensation has little effect on absence, since teachers cannot be fired and attendance rates do not affect compensation. On the other hand, factors that influence the daily costs and benefits of attending school have a much larger influence on absence rates. For example, better infrastructure provides a stronger incentive to attend school on a particular day. Similarly, improving monitoring increases the marginal cost of teacher absence. While we find that inspections are associated with lower absence in some specifications, we find little evidence to suggest that greater local ties are associated with lower absence. Teachers in private schools and contract teachers, who face very different incentives, have similar or lower absence rates while being paid a fraction of government teachers' salaries.

The study suggests it may be worth exploring a variety of potential reforms. These range in political difficulty from improving school infrastructure; to increasing the frequency of inspections; to experimenting with new, potentially more effective forms of local control or contracting with teachers; to such fundamental reforms as increased use of private schools. However, in order to assess the impact of any of these reforms, rigorous randomized evaluations should be put in place.

Such evaluations should monitor a range of educational outcomes to ensure that these reforms not only increase the educational input of teacher attendance, but also help achieve the fundamental objective of improving student learning.

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