

EXECUTIVE SUMMARY



WHAT IS HAPPENING INSIDE CLASSROOMS IN INDIAN SECONDARY SCHOOLS?

A Time on Task Study in Madhya Pradesh and Tamil Nadu



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This study was conceptualized and initiated by the World Bank in concurrence with the Ministry of Human Resource Development (MHRD) to understand the quantity and nature of time spent on teaching–learning in secondary school classrooms in India. The World Bank partnered with Educational Initiatives (EI) Private Ltd. to conduct the field survey of the study.

This report was prepared by Educational Initiatives for the World Bank, with Pranav Kothari, Raghav Rohatgi, Deepak Agarwal, Nischal Shukla and Archana Dwivedi as the key authors. It was supervised by Sangeeta Dey, Toby Linden and Namrata Raman Tognatta (all World Bank). We hope this report will be useful to policy makers, education administrators, teacher educators and schools.

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Executive Summary

The Government of India launched *Rashtriya Madhyamik Shiksha Abhiyan* (RMSA) in March, 2009 which is along the lines of *Sarva Shiksha Abhiyan* but with the focus on secondary education. The key objectives of the scheme are to enhance access to secondary education and to improve its quality. It envisages achieving universal access to secondary level education by 2017, and improving quality of education imparted at the secondary level by making all secondary schools conform to prescribed norms.

The objective of this study was to document and analyse the current use of classroom time and identify good practices to improve classroom teaching in Mathematics and Language in secondary education in support of the implementation of the RMSA scheme. This study has been carried out as part of the World Bank's support to RMSA with concurrence from the Ministry of Human Resource Development, Government of India.

This study¹ builds upon an earlier study on time-on-task which was carried out by the World Bank for elementary schools in Andhra Pradesh, Madhya Pradesh and Uttar Pradesh in 2006-2007². That study was instrumental in providing valuable insight on time spent and the nature of teaching in elementary classrooms. The current study aims to achieve the same in secondary schools.

Scope and Design

This study conducted in 2015-16 looked at the available learning time, teaching methods and learning materials available in the classroom along with the characteristics of students, teachers and schools to document how effectively instructional time was used in the class. The study also video-recorded teaching practices of a smaller subset of teachers in order to create a corpus of real-life examples of teaching practice that can serve as an effective learning tool in teacher training programs and generate discussion among educators and teachers on effective teaching practices. This is the first time such a study has been conducted in secondary education in India and therefore the main report goes into some of the technical issues addressed during the implementation, so that others can repeat and extend the study in other places.

The present study covered 150 secondary schools spread across 3 districts each in Madhya Pradesh (Balaghat, Gwalior and Jhabua) and Tamil Nadu (Coimbatore, Salem and Vellore). Language and Mathematics subject classes were observed in class 10 in each school. The following instruments were administered in each school: A) Stallings classroom observation tool; B) Questionnaire on teacher attitude towards gender inclusion/discrimination; C) Student Questionnaire; D) School & Teacher Questionnaire; and, E) Teacher Understanding of Student Knowledge Questionnaire. All these tools are discussed in detail in subsequent chapters.

1. What is happening inside classrooms in secondary schools? A Time on Task Study in Madhya Pradesh and Tamil Nadu 2015-16: Kothari, Pranav; Rohatgi, Raghav; Agarwal, Deepak; Shukla, Nishchal; Dwivedi, Archana (authors from Educational Initiatives Pvt. Ltd. who also led the field study). The study and report were supervised by Sangeeta Dey, Toby Linden and Namrata Raman Tognatta, Global Education Practice, The World Bank Group.
2. Here is the proper citation: Sankar, Deepa; Linden, Toby. 2014. How much and what kind of teaching is there in elementary education in India? Evidence from three states. South Asia: Human Development Sector; no. 67. Washington, DC; World Bank Group. <http://documents.worldbank.org/curated/en/2014/02/19231774/much-kind-teaching-elementary-education-india-evidence-three-states>

Key Findings

Overall, classes were held for 179 days in Madhya Pradesh (Figure 1) and 182 days in Tamil Nadu in the academic year 2014-2015 (Figure 2). Even though schools operate for 6 days a week in Madhya Pradesh the actual number of days on which classes were held was very slightly less than in Tamil Nadu because of a longer summer break (45 days in Madhya Pradesh as against one month in Tamil Nadu), more examination days (44 days against 27 days) and unscheduled closings. Discussion with state officials revealed that the number of unscheduled closings was as per their expectations and could be due to various reasons such as local festivals, state/district events or heavy rains.

Figure 1: Expected vs actual days on which classes held, Madhya Pradesh (2014-2015)

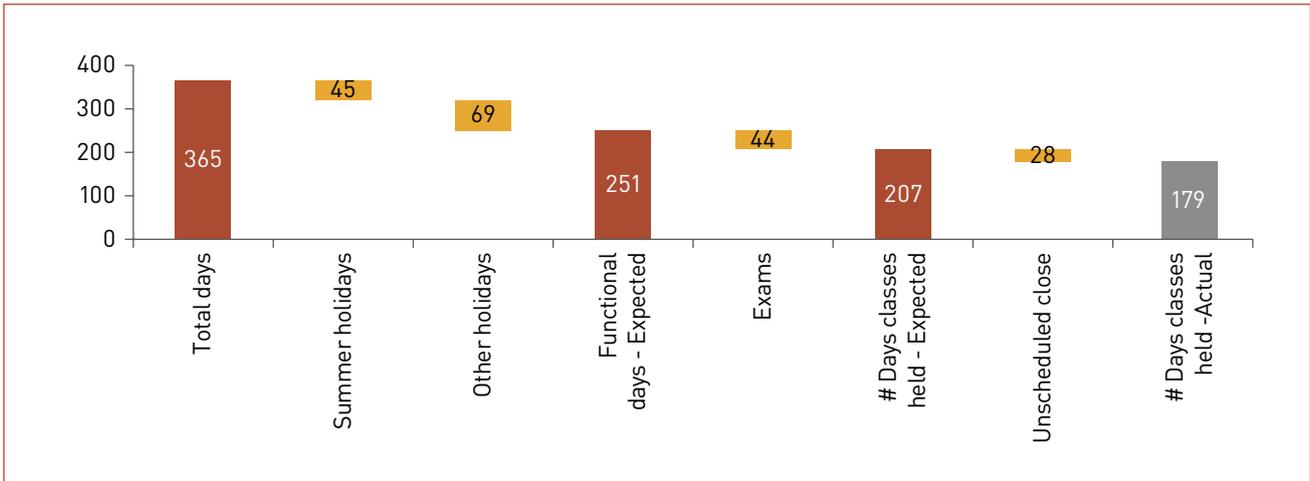
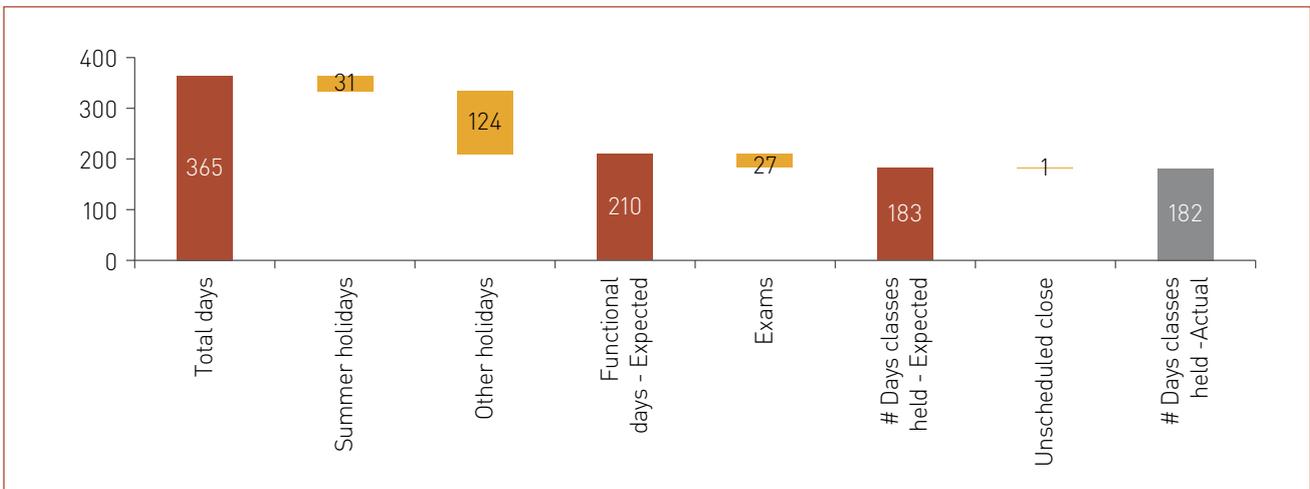


Figure 2: Expected vs actual days on which classes held, Tamil Nadu (2014-2015)



On an average, teachers were away from schools for 17.8 days in Madhya Pradesh and 20.6 days in Tamil Nadu. Personal leave accounted for the highest number of days away from school across all 6 districts. Teachers were not in school mainly due to personal leave, training and other official duties. The number of days spent in training was very low especially in Madhya Pradesh where teachers were in training for an average of 3.7 days in 2014-15 in comparison to 6.3 days in Tamil Nadu. Also, an analysis of teacher availability data by gender, age and experience shows that:

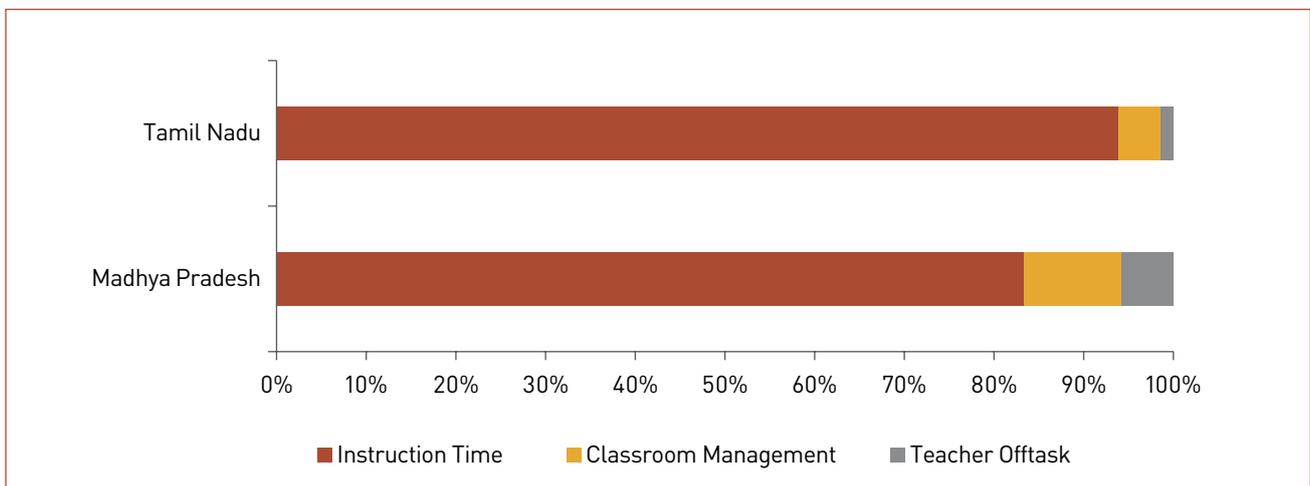
- ❖ Male teachers were in training and on official duties for significantly more days than female teachers in Madhya Pradesh. No such differences were found in Tamil Nadu.

- ❖ In Madhya Pradesh young teachers in the age group of 21 to 30 years took far less leave and also went on training or official duty for fewer days which resulted in them being away from school for an average of 10 days in comparison to approximately 19 days among other age groups.

Classroom observations using the Stallings³ tool noted how much time teachers were spending on various activities. Activities were further classified into – 1) Instructional activities: activities where teacher and students were involved in teaching and learning, and 2) Classroom management and other off-task activities: where the teacher was spending his/her time in managing the classroom or on other activities not associated with student learning. The average class time in both states was 45 minutes.

Overall, almost 89 percent of teachers’ time was spent on instructional activities (Figure 3). **However, there was significant difference in Madhya Pradesh and Tamil Nadu on how time is being spent in the classroom.** In Madhya Pradesh, 83 percent of the time was spent on instructional activities whereas this number was 94 percent for Tamil Nadu. In Madhya Pradesh, time being spent on classroom management and off-task activities was high at 11 percent and 6 percent, respectively, and was lower in Tamil Nadu at 5 percent and 1 percent respectively.

Figure 3: Breakup of teachers’ time in classroom across different activities



There were important differences in the way instructional time was used across subjects. Teachers were spending more time on ‘Discussion’ and ‘Reading Aloud’ in Language than in Mathematics classrooms. The observers found that ‘discussion’ in Language classrooms was mostly choral responses from students to simple recall questions from the lesson being taught. ‘Assignment/class work’ and ‘Copying’ activities took up a higher proportion of class time in Mathematics classrooms than in Language classrooms. The observers also found that most Mathematics teachers solved examples on the blackboard and asked students to copy them down which may explain more time in class work and copying in Mathematics classrooms. ‘Instruction, demonstration or lecture’ and ‘Assignment/class work’ dominate and take up almost 50 percent of class time across both subjects. Only 17 percent (approximately 7-8 minutes per lesson) of the class time was devoted for discussions in both the subjects.

3. The Stallings tool is a classroom observation tool that is like a snapshot that records the participants, their activities, and the materials being used in the classroom, at ten separate instances throughout a class period. The snapshot records people and activities as if they were being photographed during one brief instant. Each “snapshot” observation lasts for a duration of 15 seconds.

There were also differences in the teaching and learning materials used, though the range of such materials was very limited. In Mathematics classes in both states, teachers were using the blackboard for more than 50 percent of class time (Figure 4). In contrast to this, in Language classes, use of textbooks dominated and took up 40 percent of class time (Figure 5). In both subjects and states, use of other learning aids was limited and co-operative learning and use of ICT was almost non-existent in the classroom.⁴ Along with the materials available in the classroom, observers also noted if students had textbooks and notebooks of their own in the class. All students in both states had textbooks and notebooks in more than 90 percent of the classes observed.

Figure 4: Frequency of use of different learning materials, Mathematics

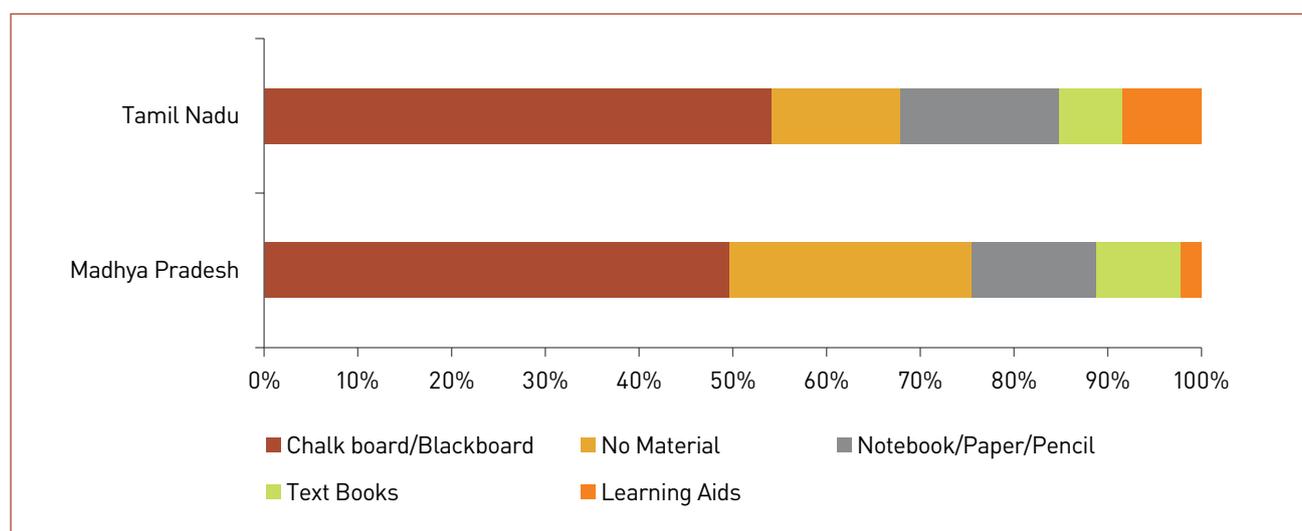
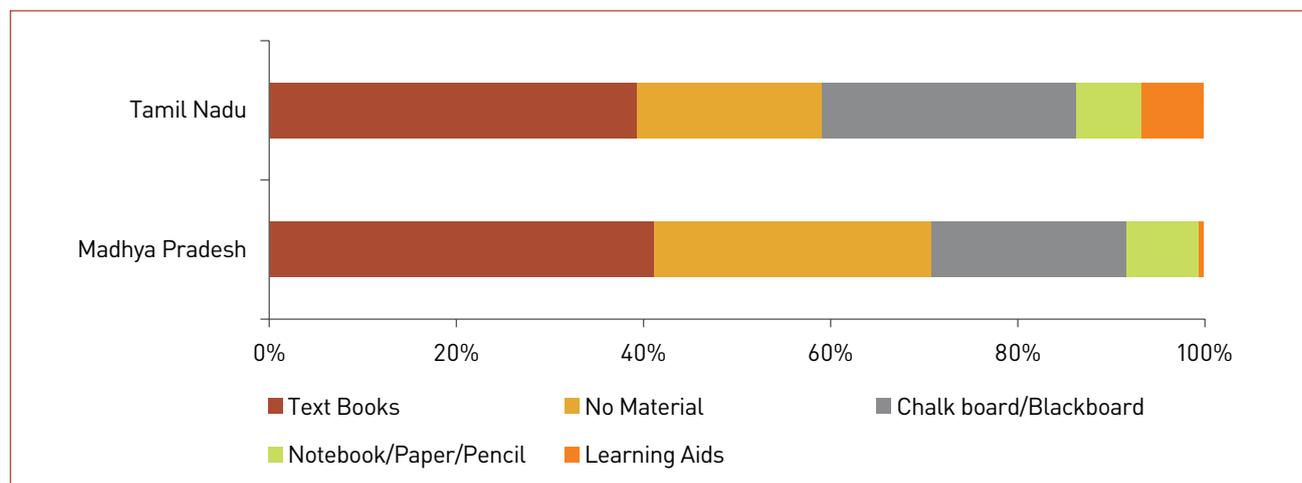


Figure 5: Frequency of use of different learning materials, Language



There was a stark difference between the two states in terms of availability of learning resources. Whereas Tamil Nadu reported more than 95 percent schools having 7 out of 9 learning resources⁵ on the survey questionnaire, this percentage was 38 percent in Madhya Pradesh. In Madhya Pradesh, learning resources were especially lacking in schools in the district of Balaghat.

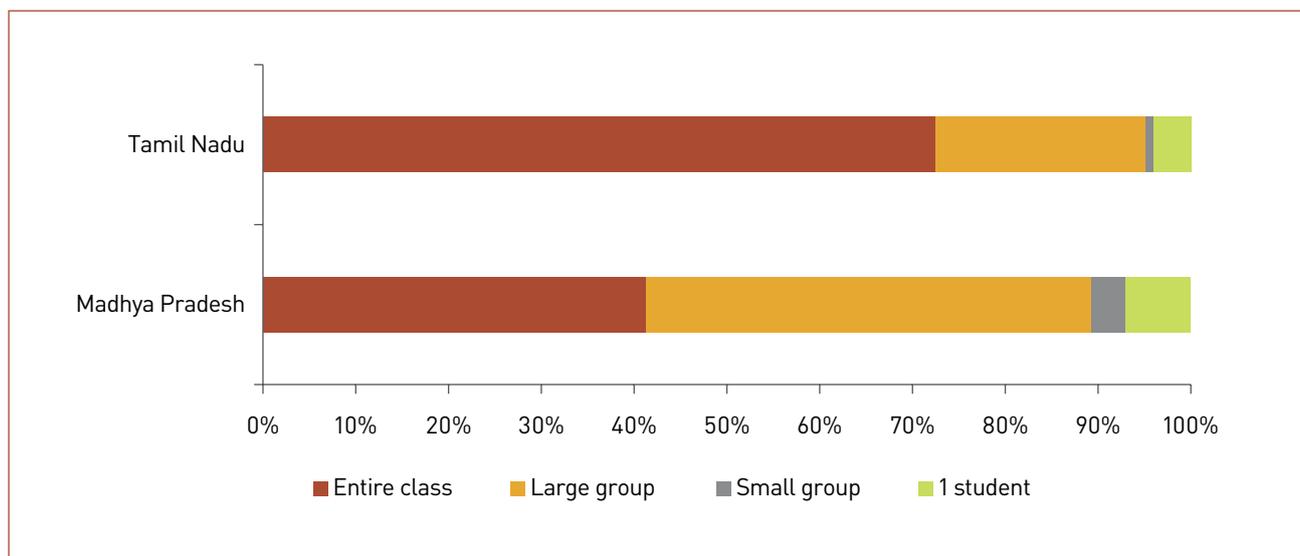
4. It should be noted that ICT tools may have been used in computer labs which were not part of this survey.

5. 9 Learning resources: science laboratory, computers, library, newspapers/magazines, encyclopaedia/dictionary, Television, charts/maps, blackboard and lastly >5 chalks available every day in the classroom

Only 11 percent schools in Madhya Pradesh reported having computers in comparison to 85 percent schools in Tamil Nadu.

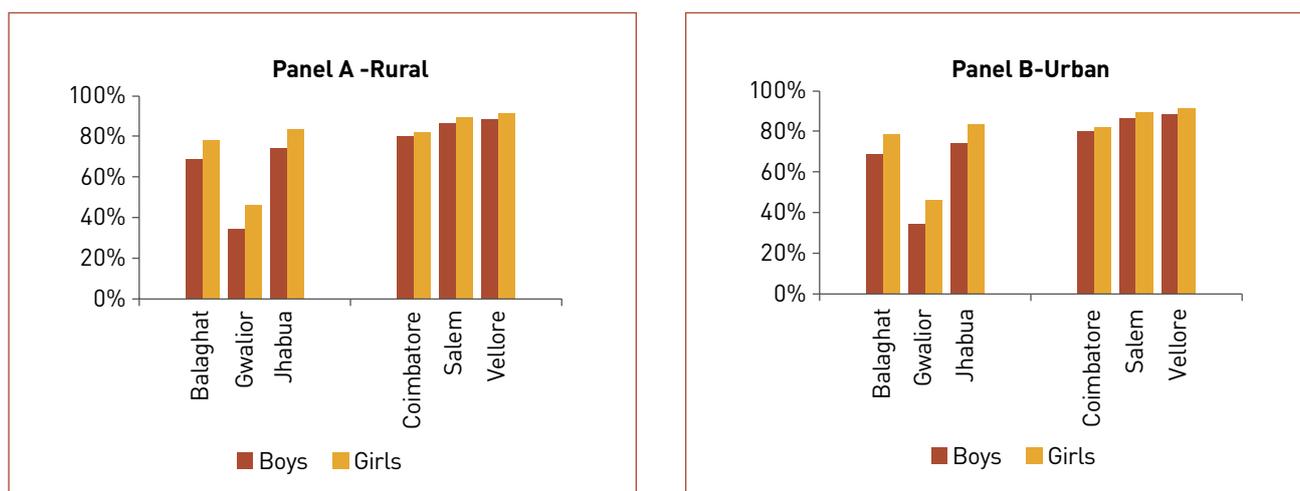
The involvement of students in Tamil Nadu was high as all the students were doing the activity carried out by the teacher for 73 percent of the classroom time (Figure 6). It was significantly lower in Madhya Pradesh where the entire class was involved for 41 percent of the classroom time⁶. However, it should be noted that when all students were involved this almost always meant that all students were doing the same activity, regardless of whether they were able to understand what was being taught.

Figure 6: Student involvement



In Madhya Pradesh, a student attendance rate of 70 percent was recorded on the day of observation in comparison to 88 percent in Tamil Nadu schools. There was no significant difference in enrolment or attendance rates for boys and girls across rural and urban schools (Figure 7).

Figure 7: Attendance of boys and girls across rural and urban schools

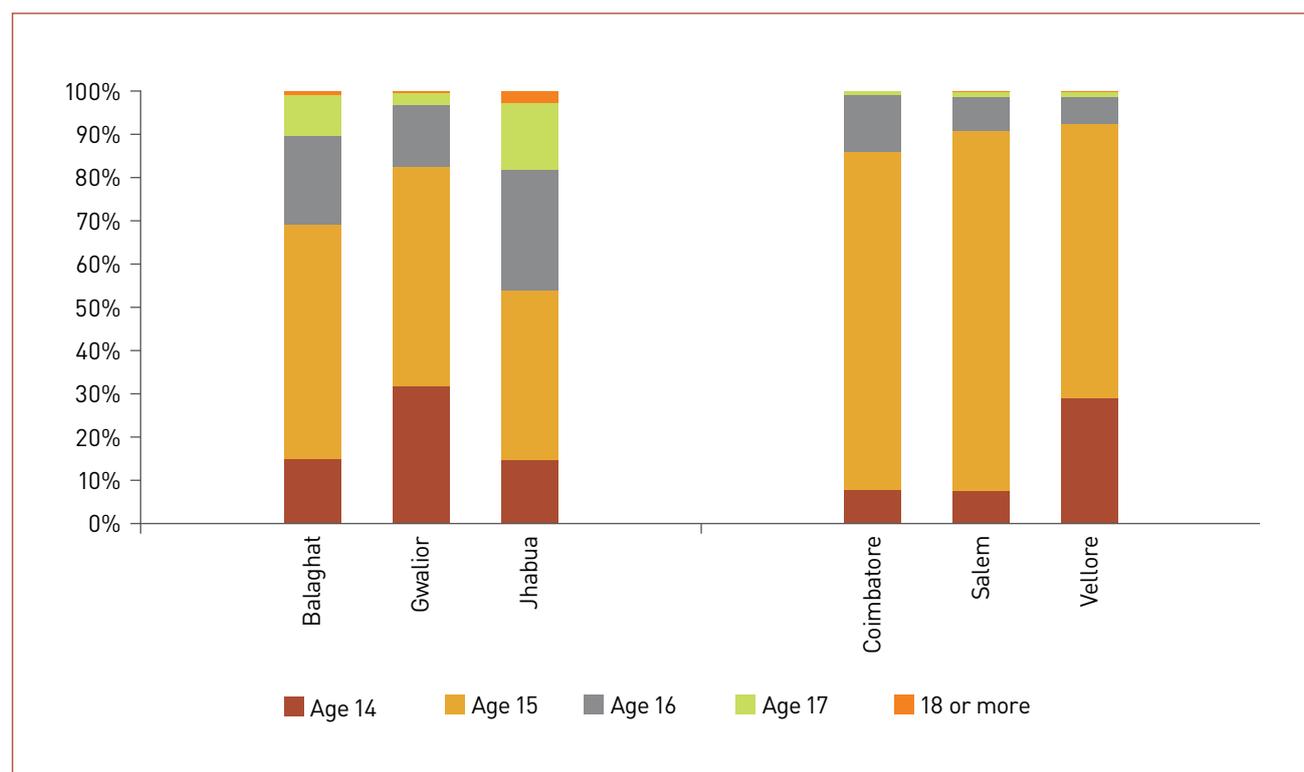


⁶ The Stallings Manual identifies 4 categories of student participation to be used during the class observations: ‘Entire Class’ – All the students are involved in the activity, ‘Large Group’ – 6 or more students are involved in the activity but not the entire class, ‘Small Group’ – 2 to 6 students are involved in the activity, ‘1 student’ – 1 student is involved in the activity independently.

More than 95 percent students in both states responded positively when asked if they like to come to school and feel that education is important. Approximately the same number of boys and girls responded yes. Moreover, there was no significant gender bias in either state in classroom practices. The survey observed if teachers were asking questions, praising, scolding or offering to do classroom management predominantly for one gender group in the class.

Around 50 percent of students in Madhya Pradesh and 74 percent of students in Tamil Nadu were 15 years old (i.e., the expected age for class 10) (Figure 8). In Madhya Pradesh, schools had diverse groups in terms of age, as at least 18 percent of students were younger than 15 years and more than 30 percent of students were older than 15 years. This diversity of student ages poses an additional challenge to teachers in responding effectively to the different educational needs of students.

Figure 8: Distribution of student's age, by district



Principals and students generally perceived effective teachers and teaching in the same way as the expert observations in this study. Principals' rating of teachers were moderately positively correlated with time spent on instruction in the classroom and student involvement. Effective teaching practice as perceived by students was also moderately positively correlated to involvement of students.

In order to understand if teachers were able to identify errors made by students, 10 questions were given to Language and Mathematics teachers whose classroom practices were observed. The test was voluntary with no time limit.

On an average, in each state, Language teachers were able to identify student errors 50 percent of the time and Mathematics teachers got 40 percent of the questions correct (Table 1). The performance of Madhya Pradesh teachers was found to be slightly higher than that of Tamil Nadu teachers in Mathematics as well as Language. Across all the districts, performance of teachers in the district of Gwalior was the highest (with the Language teachers getting 53 percent of the questions right and Mathematics teachers getting 47 percent of the questions right).

Table 1: Teacher understanding of student knowledge

Language		Mathematics	
District	Overall % correct	District	Overall % correct
Gwalior (MP)	52.7	Gwalior (MP)	47.4
Salem (TN)	50.0	Coimbatore (TN)	38.9
Balaghat (MP)	49.2	Vellore (TN)	38.3
Jhabua (MP)	48.0	Jhabua (MP)	37.7
Coimbatore (TN)	47.1	Balaghat (MP)	35.0
Vellore (TN)	43.9	Salem (TN)	34.8

While teachers were able to identify errors made by students correctly for some of the questions of lower class levels, there were cases where most teachers missed fundamental conceptual errors made by students. Also, responses on some of the questions of higher class levels (classes 8, 9 and 10) seem to indicate that the teachers probably had the same wrong notions as their students.

The study also created separate videos that capture teaching-learning practices in Language and Mathematics in each state. The purpose of this video compilation is to serve as a starting point for a discussion among teachers, teacher trainers, principals and other key stakeholders on classroom practices that can best support student engagement and student learning to suit their specific learning environments.

Conclusion

This study highlights the need to examine further the link between classroom practices and student outcomes. Teachers are spending substantial class time on instructional activities but results from the National Achievement Survey indicate this is not leading to good enough student learning outcomes. Most of the time all students are involved in what is happening in the classroom; but this is because they are all doing exactly the same thing. The study did not find teaching practices that addressed the different learning and ability levels of students in the classroom. Furthermore, re-examining the content of teacher preparation and training programs to ensure content mastery and effective pedagogical practices among teachers will be crucial for teacher effectiveness and student learning. Finally, there were small but notable differences across districts in instructional practices; these differences could be the result of district-level processes for teacher recruitment and pre- and in-service training.

All the material from the study, including the questionnaires and the edited video material, is available for use by governments and researchers.



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