

## Student Performance

Bihar Chhattisgarh Jharkhand Madhya Pradesh Rajasthan



**The Technology Tools for Teaching and Training (T4) program improves education quality through creative technology-based tools, dynamic partnerships and effective capacity building of teachers.**

The Interactive Radio Instruction (IRI) series is an innovative educational media program developed by Education Development Center's Technology Tools for Teaching and Training (T4) project in India, funded by the United States Agency for International Development (USAID). In collaboration with state governments and international and local partners, T4 is implemented in eight states—Rajasthan, Bihar, Madhya Pradesh, Karnataka, Chhattisgarh, Andhra Pradesh, Jharkhand and Delhi—with the objective of improving education quality through the use of technology tools for teaching and training.

In 2009, the T4 project partnered with state governments to deliver three Interactive Radio Instruction (IRI) series to students in 5 Hindi-speaking states: *English is Fun* Level 1 for Classes 1 and 2, *English is Fun* Level 2 for Classes 3 and 4, and *Jhil Mil* for Classes 4 and 5. In Karnataka, T4 and state partners supported the *Chukki Chinna* and *Chinnara Chukki* IRI series for students in classes 1-5. To assess the overall impact of the programs on the quality of teaching and learning, T4 and its implementing partners conducted student assessments and teacher observations, and also held focus group discussions with teachers, administrators and students.

**Report Genesis.** This report summarizes findings from assessments of the three IRI series conducted in 5 Hindi-speaking states--Rajasthan, Bihar, Madhya Pradesh, Chhattisgarh, and Jharkhand. Results from Karnataka are not included in this summary report because of a lack of direct comparability of the Kannada-based IRI programs to those in Hindi.

For the purpose of this analysis, a representative sample of 968 schools in 25 districts across the 5 states is used. Due to statewide implementation in some states, results from a comparison group (i.e. non-IRI) are not available. As a result, all student learning gains for IRI students are compared across the 5 states. State-specific reports provide additional information on comparisons of student learning gains between IRI and non-IRI students (Rajasthan for *English is Fun* Level 1 & Madhya Pradesh for *Jhil Mil*).

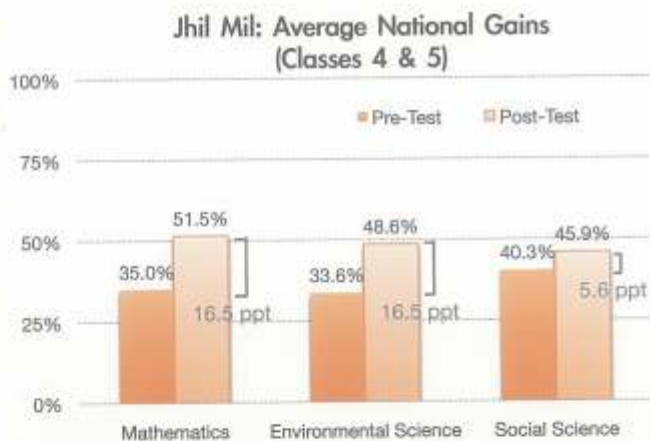
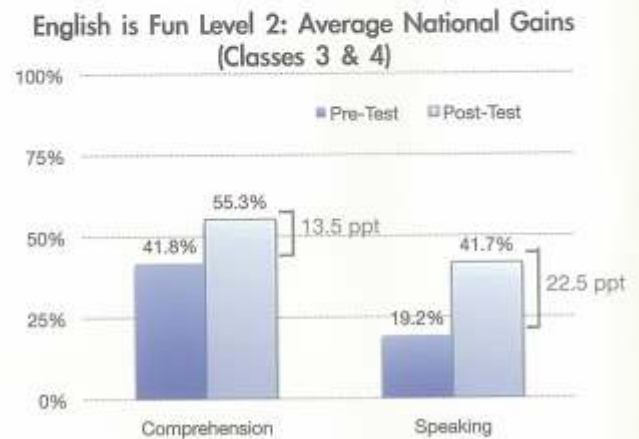
Between July and September 2008, pre-tests were administered in each state to gauge student learning levels; a post-test was subsequently held between February and March 2009. A total of 15,763 IRI learners participated in both exams.



# OVERALL RESULTS

**THE TEST.** Student competency in English comprehension and speaking was evaluated to determine the effectiveness of the *English Is Fun* Level 1 and 2 programs. The Comprehension Tests for each series comprised 10 questions in both vocabulary and numeracy. The Speaking Tests included 7 questions that required students to either verbally express themselves or to carry out spoken instructions. To assess student learning gains as a result of participation in *Jhil Mil*, students were given an exam comprising three subgroups of questions--14 regarding basic arithmetical and geometrical operations, 12 regarding Environmental Sciences, and 9 related to Social Science.

**THE ANALYSIS<sup>1</sup>.** Comparison of scores between the IRI pre-test and the IRI post-test allows for the identification of learning gains achieved during the academic year. Since 4 of the 5 states implemented the IRI series statewide, comparison groups (i.e. non-IRI) were not available for inclusion in this summary analysis. Without comparison groups, the observed gains among IRI learners are attributable to traditional instruction, cognitive growth, as well as exposure to IRI. However, the effects of IRI exposure have been isolated and reported separately in state-specific reports.



An analysis of average test scores shows that in each series: *English is Fun* Level 1 (EiFL1); *English is Fun* Level 2 (EiFL2); and *Jhil Mil*; students made significant gains in English Comprehension and Speaking, Mathematics, Environmental Science, and Social Science in the period between pre-test and post-test.

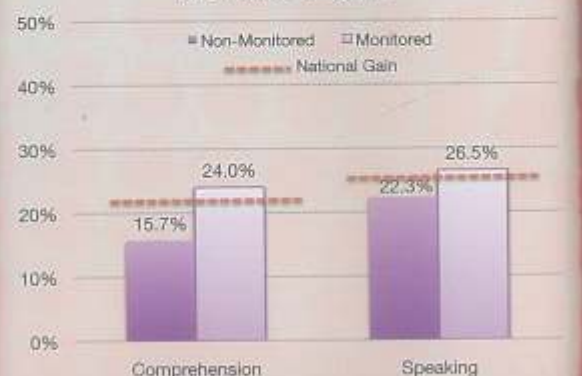
For example, Class 4 and 5 students participating in *Jhil Mil* (shown to the left) scored an average of 35% in Math at pre-test and 51.5% at post-test, representing a 16.5 percentage point gain. Similar gains across all subjects indicate that in addition to regular classroom instruction and cognitive growth of students over the school year, IRI is also a significant and positive influence on student learning.

## Why Monitor Program Implementation?

Monitoring the implementation of IRI in classrooms can have a significant impact in improving student learning gains. During 2008-09, T4 and NGO partners monitored implementation of the *English is Fun* Level 1 IRI series in Bihar and Rajasthan. These results are compared to those obtained under non-monitored conditions in Chhattisgarh and Madhya Pradesh to assess the benefits of monitoring, particularly in the early stages of implementation.

A comparison of gains shows that while students in un-monitored schools did achieve a 15.7% gain in English Comprehension and a 22.3% gain in Speaking, students in monitored schools made significantly greater gains of 24% and 26.5%, respectively.

**English is Fun Level 1: Overall Pre- to Post-Test Gains By Monitored States**



<sup>1</sup>While all results are shown in the graphs, only those differences that were statistically significant are discussed in the text. In other words, a difference in scores between two groups should not be interpreted unless it is discussed as a significant difference.



**IRI Series:** *English is Fun* Level 1  
**Grades:** Classes 1 and 2  
**Subjects:** English Comprehension and Speaking  
**Language of Instruction:** Hindi and Local Language  
**Program:** 120 Episodes (30 minutes each)

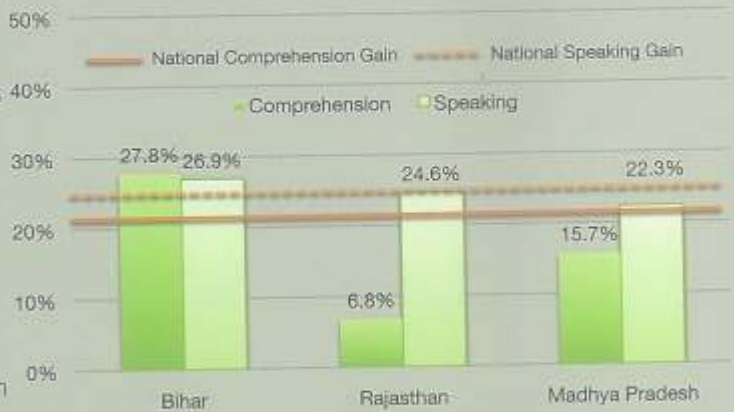


The graph at right summarizes pre- to post-test gains in Comprehension and Speaking scores from Bihar, Rajasthan and Madhya Pradesh. Significant improvements in student learning were seen across all three states. Comprehension gain scores from Bihar (27.8%) were significantly greater than those from Madhya Pradesh (15.7%), which in turn, were significantly greater than gains made by students in Rajasthan<sup>2</sup> (6.8%).

Despite the modest increase, IRI learners in Rajasthan still outperformed their non-IRI peers in both skill areas. In Speaking, gains observed in Bihar (26.9%) were greater than those in Rajasthan (24.6%), followed by gains in Madhya Pradesh (22.3%).

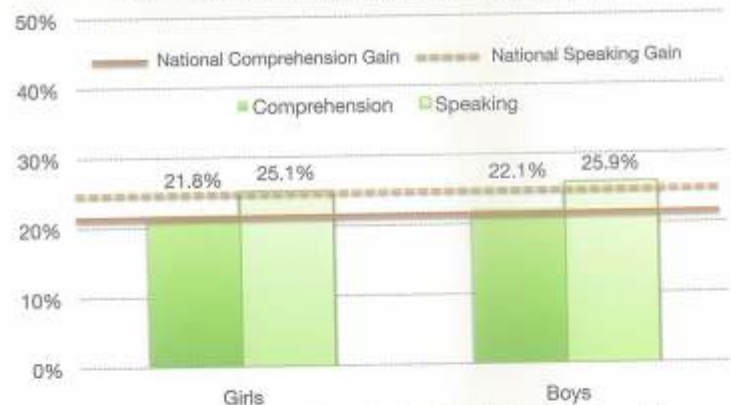
Nationally, gains in speaking exceed those in comprehension. While traditional instruction tends to focus more on comprehension skills (as suggested by the higher pretest scores in Comprehension in all 3 states), the IRI programs appear to address a gap in speaking skills (as suggested by the greater gains made between pre- and post-test in Speaking versus Comprehension).

**National Pre- to Post-Test Gains by State**

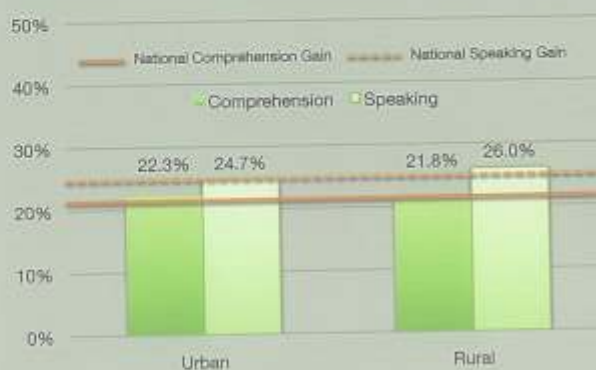


An analysis of learning gains by gender shows that both girls and boys participating in *English is Fun* Level 1 made significant improvements in English Comprehension and Speaking from pre-test to post-test. No significant differences were observed between girls' and boys' achievement, indicating that both groups benefitted equally from IRI programming.

**National Pre- to Post-Test Gains by Gender**



**National Pre- to Post-Test Gains by School Location**



The graph to the left compares gain scores achieved by urban and rural school location. In both Comprehension and Speaking, urban and rural schools made significant gains from pre- to post-test, and there were no significant differences in the learning gains achieved by either group. This suggests that IRI positively influenced student learning in English regardless of whether learners attended schools in urban or rural areas.

<sup>2</sup>In Rajasthan, *English is Fun* Level 1 was implemented with students in classes 1-4. For this summary report however, student results from Classes 1 and 2 only, are considered for comparability across states.

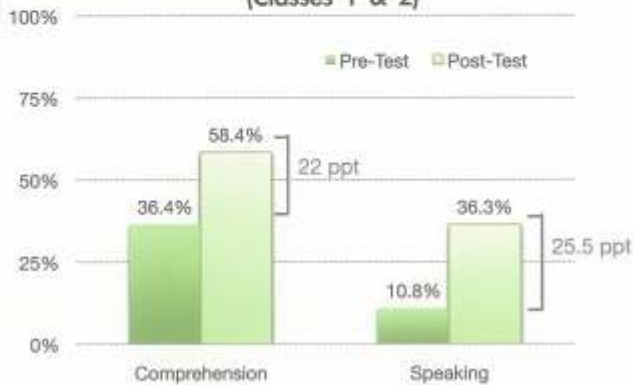


# OVERALL RESULTS

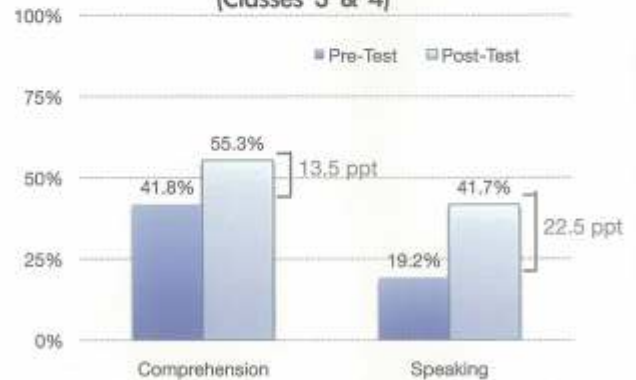
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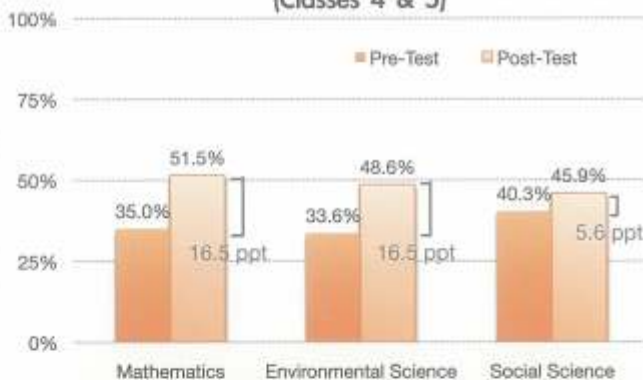
English is Fun Level 1: Average National Gains (Classes 1 & 2)



English is Fun Level 2: Average National Gains (Classes 3 & 4)



Jhil Mil: Average National Gains (Classes 4 & 5)



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English is Fun Level 1: Overall Pre- to Post-Test Gains By Monitored States



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As of 2009, T4's IRI series, Group Teaching and Learning (GTL) software, and educational videos have delivered content in English, Mathematics, Social Science and General Science to classrooms throughout the country, reaching over 31 million children across 8 States.

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## TECHNOLOGY TOOLS FOR TEACHING & TRAINING

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**IRI Series:** *Jhil Mil*

**Grades:** Classes 4 and 5

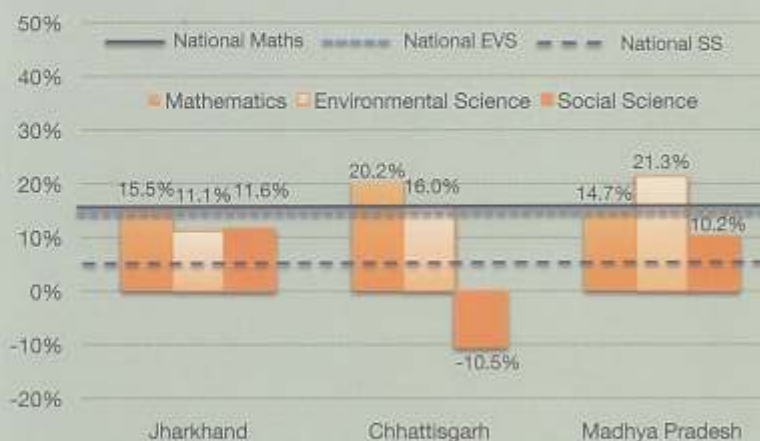
**Subjects:** Maths, Environmental Science, Social Science

**Language of Instruction:** Hindi and Local Language

**Program:** 60 Episodes (30 minutes each)



**National Pre- to Post-Test Gains by State**



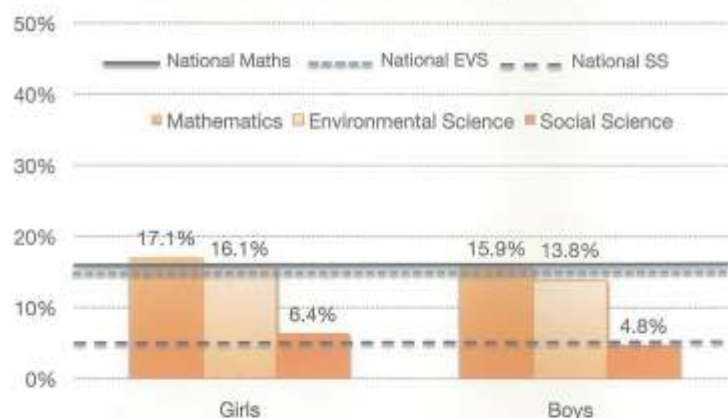
The graph to the left summarizes average pre- to post-test gains from Jharkhand, Chhattisgarh, and Madhya Pradesh participating in Mathematics, Social Science, and Environmental Science. Class 4 and 5 students show improvements in all subjects in all states (except in Social Science in Chhattisgarh—possible reasons for which are discussed in detail in the state report).

In Mathematics, students from Chhattisgarh achieved significantly higher gain scores (20.2%) than students from Jharkhand (15.5%) and Madhya Pradesh (14.7%). In Environmental Science, students in Madhya Pradesh obtained significantly higher gains (21.3%) than their peers in the other two states.

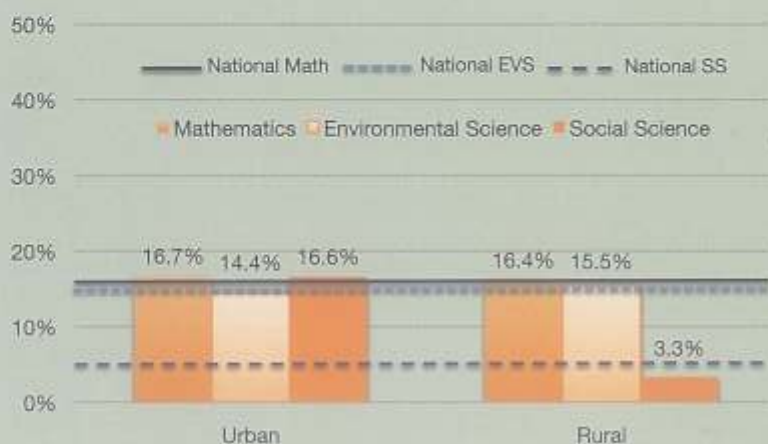
Both boys and girls made significant improvements in all three subject areas. Girls, for example, made average gains of 17.1% in Mathematics, 16.1% in Environmental Science, and 6.4% in Social Science. These pre- to post-test improvements were significantly greater than the average gains made by boys.

This suggests that girls benefitted more than boys across all subjects over the course of the school year.

**National Pre- to Post-Test Gains by Gender**



**National Pre- to Post-Test Gains by School Location**



Analysis of gain scores by school location show that students attending schools in urban and rural areas significantly improved their performance in all three subjects tested.

In Mathematics and Environmental Science, no statistical difference was observed between urban and rural learners, indicating that students benefitted equally during the academic year, irrespective of their school's location. In Social Science, however, students in urban schools made significantly greater gains than students in rural areas.