Paper: Disrupting Education: Experimental Evidence from Technology-Aided Instruction in India. Muralidharan, Singh, Ganimian, 2019.

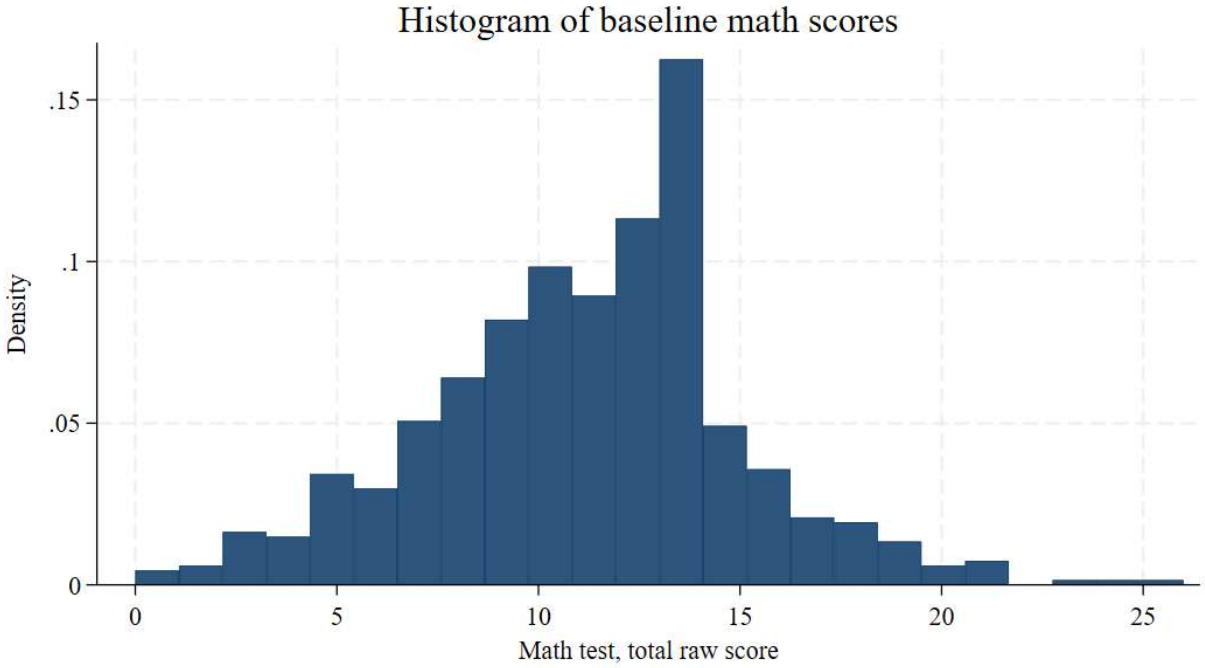
Summary:

In this paper, the authors study the effects of a personalized learning software on the academic progress of low income post-primary students in India. The software is combined with group instruction during an after school program. The authors frame the question as whether the software increases the productivity of instruction, as past research found no impact of additional group tutoring instruction, presumably since the actual grade level of students in one cohort were dispersed over as many as 6 levels. This paper finds that the software did complement instruction, boosting math and Hindi test scores by .37sigma and .23sigma, respectively, compared to the control group.

The authors set up a random lottery among interested families for vouchers to the after-school program. Then, they estimated the intent-to-treat effects using OLS and estimated the dose-response relationship using an IV model. In the IV model, they instrument for attendance of the program with the randomized voucher allocation. They compare baseline test scores to endline test scores for both the treatment and control groups after 4.5 months of the treatment group receiving the voucher. The control group, which lost the lottery, was not allowed to use the program until after the endline exams.

Data:

From the authors' README: "This dataset includes selected baseline covariates on study participants and their scaled test scores on independent assessments of math and Hindi at baseline and endline, in long format." It has 36 variables and 1,158 observations where each observation is one student and either their baseline or endline exam. The "treat" variable indicates treatment status of each student. It includes covariates about the students including their age, grade, gender, other tutoring use, and math performance.



This figure shows the distribution of math scores at the baseline exam for all study participants, both treatment and control.