Disrupting Education? Experimental Evidence on Technology-Aided Instruction in India

ECON 280 – Part 3

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1 Main Result

Although there are a few important main results of the paper, I decided to replicate and discuss the ITT effects of being selected into Mindspark on student outcomes measured in Math and Hindi test scores. They find that there was a positive effect of this program on these outcomes. This is one of the main results because it shows that these after school technology-aided programs help boost test scores for children. The main results are found in Table 2 of the paper.

The empirical framework is pretty simple here. They regress the final test score on an indicator of whether the student was treated or not along with some controls and fixed effects. It is just an OLS regression. In another of their main results, they use an instrumental variable approach as their empirical framework. Since program attendance may be endogenous to expected gains from the program, they instrument for attendance with the randomized offer of a voucher. They then identify the average effect of an extra day of attending the Mindspark centers on test scores. They call this the average causal response of the treatment. They find that an extra day of attending the Mindspark centers increased test scores by 0.0067σ in math and 0.0043σ in Hindi.

For the replicated table, I copied the table made from the STATA code in R. The table made in STATA does not look like the table in the paper. It looks like they made additional editing outside of STATA.

Replication of Table 2

	(1)	(2)	(3)	(4)
Treatment	0.369	0.227	0.374	0.238
	(0.064)	(0.063)	(0.062)	(0.061)
Baseline score	0.584	0.713	0.568	0.684
	(0.032)	(0.032)	(0.039)	(0.037)
Constant	0.326	0.175		
	(0.045)	(0.044)		
Num.Obs.	535	537	535	537
R2	0.403	0.493	0.453	0.540
Strata fixed effects	Y	Y	N	N

Robust standard errors in parentheses. Treatment is a dummy variable indicating a randomly-assigned offer of Mindspark voucher till March 2016. Tests in both math and Hindi were designed to cover wide ranges of achievement and to be linked across grades, as well as between baseline and endline assessments, using common items. Scores are scaled here using Item Response theory models and standardized to have a mean of zero and standard deviation of one in the baseline.