Readme

Instructions for replication

November 2016

This readme file provides a summary explanation to replicate the results presented in the paper "Technology and Child Development: Evidence from the One Laptop per Child program." This paper is forthcoming at the *American Economic Journal: Applied Economics*.

For further instructions, please contact Julian Cristia at jcristia@iadb.org.

1. General instructions

To replicate the results presented in the paper you need to create a folder with the name "bd_finales" in your working director and place in that folder the following Stata data sets:

- docente.dta
- estudiante.dta

Then, you need to run the do file "resultados.do." The final results are stored in the folder "resultados" which is automatically generated during execution of resultados.do.

Note that fdr.do is the do file which generates sharpened two-stage q-values for tables 6, 8, 9 and 10 of the manuscript. The do file uses the Stata code described in Anderson (2008). This do file can be downloaded from:

http://are.berkeley.edu/~mlanderson/downloads/fdr_sharpened_qvalues.do.zip

2. Tables and figures generated

The do file resultados.do will generate results for:

- Tables 2 to 10
- Figure A1
- Tables A1 to A3

Note that we are not providing the data and code to produce Table 1. Producing this table involves matching the study sample with the school census in Peru. We cannot provide the data used to produce this table to maintain the confidentiality of schools, principals, teachers and students participating in the study.

Finally, resultados.do will generate other results mentioned in the text of the manuscript. In particular, the do file generates statistics about:

1. Number of treatment and control groups
2. P-value of effects on Raven
3. P-value of effects on cognitive skills summary measure
4. Prevalence of correct timing
5. Characteristics of the population
6. Fidelity
7. Attrition

3. Description of the process to produce the final data sets and results

In what follows, we describe the three main steps that were involved in producing the empirical analysis presented in the paper.

Step 1: Initial preparation of data sets

This step involves reading raw data, anonymizing any identifier at the student, teacher, principal and school level and producing a number of files that will be used in the second step. Additionally, this step processes log data and produces indicators of log activity in the laptops. There is one log file extracted for each laptop and in this step all these log files are merged and processed.

Step 2: Data preparation for analysis

This step involves reading the output files generated in step 1 and processing them to generate the final data sets. In particular, there are four do files that are run:

1. director.do. This do file analyzes the data collected at the school level. In particular, it uses the data collected during the interview to the principal. The output file is director.dta and the unit of observation of this file is a school.
2. docente.do. This do file analyzes the data collected at the teacher level. In particular, it uses the data collected during the interview to the teacher. The output file is docente.dta and the unit of observation of this file is a teacher.
3. insumoestudiante.do. This do file analyzes the data collected at the student level. In particular, it uses the data collected using the following instruments: interview to the student, interview to the family, intrinsic motivation inventory, self-perceived school competence inventory, Math tests, Reading tests, Raven test, verbal fluency test, coding test. It also uses administrative data from the second grade national standardized examination. The output file is insumoestudiante.dta and the unit of observation of this file is a student.
4. estudiante.do. This do file combines the files director.dta and insumoestudiante.dta to generate a data set that contains information at the school and student level. The output file is estudiante.dta and the unit of observation of this file is a student.

Note that there are two final data sets that are produced in this step. These data sets are: docente.dta and estudiante.dta.

Step 3: Production of tables, figures and statistics

This step uses docente.dta and estudiante.dta to generate all the tables, figures and statistics that are presented in the manuscript and in the online appendix. This step is described in more detail in the sections 1 and 2 of this document.

4. References

Anderson, Michael. 2008. “Multiple Inference and Gender Differences in the Effects of Early Interventions: A Reevaluation of the Abecedarian, Perry Preschool, and Early Training Projects.” *Journal of the American Statistical Association* 103 (484): 1481–1495.