### The Use and Misuse of Computers in Education: Evidence from a Randomized Controlled Trial of a Language Arts Program

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**Abstract**

This paper presents the evaluation of the program Computers for Education. The program aims to integrate computers, donated by the private sector, into the teaching of language in public schools. The authors conduct a two-year randomized evaluation of the program using a sample of 97 schools and 5,201 children. Overall, the program seems to have had little effect on students’ test scores and other outcomes. These results are consistent across grade levels, subjects, and gender. The main reason for these results seems to be the failure to incorporate the computers into the educational process. Although the program increased the number of computers in the treatment schools and provided training to the teachers on how to use the computers in their classrooms, surveys of both teachers and students suggest that teachers did not incorporate the computers into their curriculum.

**Gender Connection**

Gender Informed Analysis

**Gender Outcomes**

Gender disaggregated school performance

**IE Design**

Clustered Randomized Control Trial (Clustered at school level)

**Intervention**

Computers for Education, an alliance between the public and private sector to refurbish computers donated by private organization, install them in public schools, and run a program that teaches teachers to use computer in specific subjects, especially in Spanish. This is an existing large-scale national program in Colombia. Among the objectives are: (i) support the education of the children in basic areas (language, math, natural and social sciences) by integrating the use of ITCs with pedagogical projects and activities, and (ii) encourage collaborative learning, creativity, and improve teachers’ and students’ confidence in the use of technology by integrating ITCs to their pedagogic processes.

**Intervention Period**

2006

**Sample population**

100 interested schools are randomly assigned to treatment and control groups. Only schools with 80 or more students were selected. There are 3889 control students and 4327 treatment students in grades 3-9.

**Comparison conditions**

The control group received no computers from the program

**Unit of analysis**

Student Level
### Evaluation Period
August/September 2006 - May/June 2008

First, the program successfully increases the number of computers in the school (by 15 computers) and increases students’ use of the computers. Second, despite this success, the program has little impact on students’ math and Spanish test scores. The program also has little effect on a host of other academic variables including hours of study, perceptions of school, and relationships with their peers. The reason seems to be that despite the program’s focus on using the computers for teaching students in a range of subjects (but especially Spanish), the computers were only used to teach the students computer usage skills. The evidence suggests that student use of the computers for their intended purpose was limited -- only 3 to 4 percent of the students in both treatment and control groups reported to use the computers in the language class for example. The results emphasize the importance of program implementation and monitoring. There are also no significant gender differences reported.

### Primary study limitations
There was very high levels of attrition (37%) mostly due to migration.

### Funding Source
Computers for Education and Ministry of Communication, Knowledge for Change Program

### Reference(s)

### Link to Studies