

**ZMATH 2016c.01063**

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**Orchestrating the XO computer with digital and conventional resources to teach mathematics.**

J. Comput. Assist. Learn. 31, No. 3, 202-219 (2015).

Summary: Recent research has suggested that simply providing each child with a computer does not lead to an improvement in learning. Given that dozens of countries across the world are purchasing computers for their students, we ask which elements are necessary to improve learning when introducing digital resources into the classroom. Understood the orchestration as the coordination of conventional and digital resources, we examine whether effective resource orchestration improves student learning. To do so, an 8-month study was undertaken across 17 schools in Uruguay, involving 544 fourth grade students. A treatment group worked under an orchestrated strategy, while a control group followed the national strategy, which includes the One Laptop per Child Computer (XO). Our study confirmed that the national strategy alone is capable of producing significant progress in student learning. However, we also found that the orchestration produces a statistically significant improvement in the results when compared to the control group. The main finding indicates that when teachers have an orchestrated strategy to integrate digital and non-digital resources, student learning is enhanced in relation to the curricular objectives. Finally, we discovered that learning is improved in the treatment group when there is systematic use of resources, and when the school's infrastructure facilitates the use of the technology.

*Classification:* U72 F32 F42

*Keywords:* determinants of effectiveness; resource integration; resource orchestration; teachers' work in the classroom; teaching mathematics; XO computer

doi:10.1111/jcal.12081