Is it the way they use it? Teachers, ICT and student achievement

# Details

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* Learning
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## Sample

Three databases are used:
1) The first data-source is an ad hoc ICT survey conducted on a representative sample of students in their second year of up- per secondary school (10th grade) in the Lombardy region [...] The final sample contains 2025 students from 100 classrooms randomly drawn from 51 randomly selected upper secondary schools. [...]
2) The second data-source is another ad hoc survey conducted on all the teachers of the 100 classrooms covered with the first sur- vey. The survey was web-based and about 634 teachers answered. [...]
3) In order to get “objective”information on student achievement, we used administrative data from the Italian National Institute for the Evaluation of the School System (INVALSI)".
(Comi et al., 2017, p. 26)

## Implications For Policy Makers About

Other

## Other PolicyMaker Implication

investing on teachers' ICT training

# Abstract

We provide evidence on whether ICT-related teaching practices affect student achievement. We use a unique student-teacher dataset containing variables on a wide set of very specific uses of computer and ICT by teachers matched with data on national standardized tests for 10th grade students. Our identification strategy relies on a within-student between-subject estimator and on a rich set of teacher's controls. We find that computer-based teaching methods increase student performance when they increase students’ awareness in ICT use and when they enhance communication. Instead, we find a negative impact of practices requiring an active role of the students in classes using ICT. Our findings suggest that the effectiveness of ICT at school depends on the actual practice that teachers make of it and on their ability to integrate ICT into their teaching process.

# Outcome

"Our main contribution to the existing literature consists in en- lightening the relevance of teachers’ practices in making ICT in classrooms effective or not for student achievement. Our analyses rely on a large number of specific practices considered and on the evaluation of the effect of different sets of practices separately. The results confirm that ICT per se is not necessarily beneficial for student learning, as already shown by previous studies. In addi- tion, we provide evidence on which ICT-related teaching methods matter for student achievement. More specifically, computer-based teaching practices increase student performance if they are aimed at increasing students’ awareness of ICT use and at improving their navigation critical skills, developing students’ ability to distinguish between relevant and irrelevant material and to access, locate, ex- tract, evaluate and organize digital information. We also find a pos- itive effect of ICT communication-enhancing practices, particularly in the case of math. In this case, the channel may be related to the enhancement of parental awareness of their children achieve- ment or to an easier communication among teachers, favoring the sharing and mutual adoption of good practices. Instead, we find a negative effect of practices requiring an active role of students in class in utilizing ICT, particularly in the case of Italian language, probably due to the required investment of time and to the dra- matic changes that they imply in classrooms." (Comi et al., 2017, pp. 36-37)