

Is using technology for learning a good idea?

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Monica Bulger takes a critical look at a recent OECD report about the benefits and drawbacks of using computers and technology to aid children's learning. She concludes that talking to children about what they like to learn and how is the best way forward to support them. Monica leads the Enabling Connected Learning initiative at the Data & Society Research Institute specialising in children's rights in digital and learning spaces.

As parents are equipping their homes with technology to support their children's learning, new findings suggest this might actually be in vain. In a recent report, *Students, computers and learning: Making the connection*, the OECD finds that while moderate use of educational technologies relates to improved PISA scores, 'students who use computers very frequently at school do a lot worse in most learning outcomes, even after accounting for social background and student demographics.' This finding is certainly counter to many reports of learning improvements with technologies. So with these conflicting findings, where might the truth lie?

As Sonia Livingstone found in her 2012 review of research on the benefits of ICTs in education, measuring learning is challenging given the varied expectations of 'success' in learning, the complex factors contributing to learning outcomes, and the expense of longitudinal studies. Likewise, the variety of learning technologies available and in use, combined with diverse pedagogies, lead to inconclusive findings.

Neil Selwyn challenges the often binary nature of educational technology research. Whether learning outcomes are improved with or without technology is the commonly asked question, but should it be? Technology is simply a tool, Selwyn argues, and factors such as pedagogical application, teacher engagement and the socio-cultural background of the student all influence the efficacy of any learning experience.



Technologists like **Nicholas Negroponte** promote the idea that in the hands of a child a laptop can transform their world. Perhaps it can, but unfortunately, these anecdotal claims have caused many to believe they can simply drop laptops into a classroom, add internet access, parachute a variety of devices into poor, rural areas, and magically, learning outcomes will improve. This **myth of an easy technical fix** has led to misspent resources in struggling school districts as well as large ones. As demonstrated in the US by the failure of iPads in the **Los Angeles Unified School District** and **New York City School's recent ending of their relationship with Pearson**, evaluations of technology use must be paired with consideration of the broader ecosystem of support and training.

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When the OECD seeks to explain learning scores with high or low use of technology, they are pursuing a limited view of how learning happens. Much of the interesting work around technology and education looks at the broader picture of how children's everyday social and digital practices impact their education (see, for example, ***It's Complicated***, ***The Class***, ***Leveling Up***, ***The Digital Edge***).

Questionable measures

In the OECD's report, **measures of computer use are based on unverified self-reports from school principals**. Their responses are then 'weighted so that they are proportionate to the number of 15-year-olds enrolled in the school.' ICT use in schools was measured by 'frequency of browsing the internet for school', with analysis comparing 'once a week or more' as high frequency use. Thus, the measure of educational technology use is constructed from principal reports of whether internet browsing occurs once a week *in their school*, and is then applied to all students within that school, regardless of their actual experience, yet analysed against individual student performance on the PISA tests.

Better ways to measure educational technology use

- Ask the children. As part of the demographic data collected by PISA tests, adding questions about use of technology in the classroom would be a stronger and more accurate measure. School administrators might feel pressured to report on ideal use or expected use rather than actual use, but asking an entire cohort of students about their use will likely result in more accurate averages. Further, given the number of classes and teachers at any given school, expecting principals to be aware of specific practices might be unreasonable.
- Limiting the questions to frequency of internet browsing may not address the rich classroom practices of technology engagement. More interesting measures could be developed through classroom observation or focus group discussions with teachers, or a review of a growing and diverse body of research. Using **multiple methods** can address technology use from the teacher and student perspectives while also measuring academic performance. Starting points might be how technologies are used for creating materials in classrooms, how they are used for learning science, maths, history or art, how they are used for communicating with peers, their local community, and beyond the classroom.
- If truly aiming to measure the effects of potentially excessive classroom internet use on student learning outcomes, more precise measures (e.g., daily use) would be more effective.
- Finally, any responsible analysis of 15-year-old students' learning performance must take into account their lived experience. Plenty of evidence shows that **household income level and parents' education level** are crucial predictors of a child's academic performance. The OECD **reports** that economic, social and cultural status accounts for 12% of variation in performance on maths and reading scores across OECD countries. So instead of removing socioeconomics as a variable when evaluating the effects of educational technology use, it would be interesting to add it in, and see how the effects of technology on learning scores might shift when relative poverty is considered.

Parents can also think about these measures in the home, when working out what best supports their child. Talking to children about what they like and what they find challenging is a way to step



beyond whether the technology is helping them learn, and opens up a broader range of possibilities for understanding and supporting their learning experience.

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