

Coding, Robotics, Makerspaces Poised to Grow in Schools, Report Says

Coding and robotics highlighted in report

By Sarah Schwartz

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Coding and the rise of STEAM (science, technology, engineering, arts, and math) learning are the trends to watch in K-12 educational technology this year, and schools may be expanding robotics programs and makerspaces, which are physical environments for hands-on learning, predicts a recent report from the [New Media Consortium](#) and the [Consortium for School Networking](#). [← Back to Story](#)

For the [NMC/CoSN Horizon Report](#), researchers consulted with 61 education and technology experts to predict the five-year impact of emerging technologies in K-12 schools. The annual report identifies six trends driving technology adoption, six challenges facing schools and districts, and six upcoming technological developments in schools.

Along with the report, the organizations also released a [digital toolkit designed to help schools and districts implement technological change](#), said Keith Krueger, the CEO of CoSN.

"There's so many new technologies and exciting things happening, it's hard to spend time focused on what's most important," he said. The report "gives educational leaders a focused lens to say, 'These are the really important things happening this year.' "

To decide on each year's trends, challenges, and developments, the panel of experts examined a wide range of potential topics, eventually coming to consensus on those identified in the report and the timeline for their adoption.

Some trends are geared toward workforce development. Coding as literacy, the idea that basic computer science and computational skills are as important to teach as reading and writing, was identified as a trend shaping curriculum and driving the adoption of new software in the classroom over the next year or two. Coding offers students skills that are vital to a range of professional fields, including marketing, data analysis, and web development, the report argues.

Makerspaces and STEAM learning are also predicted for widespread adoption within this timeline. Those disciplines encourage interdisciplinary and entrepreneurial thinking, the report said. Tinkering with 3-D printers and animation software, the authors contend, fosters creativity and encourages persistence through failure.

'Hype and Wishful Thinking'

But the report doesn't always address the instructional purpose of the often-expensive technologies it promotes, said Audrey Watters, an education writer and speaker on ed-tech issues. And, she said, some trends appear in the report for a few years in a row and then disappear—like mobile learning—even though they haven't been widely adopted in schools. Watters has written a commentary on the report on her popular blog, [Hack Education](#).

"I think [the report] helps fill in a justification for grant applications, for budget demands," she said, "but really, I'm not sure that it's indicative of anything."

Watters gave the example of virtual reality, which was identified as being two to three years from adoption in the 2016 and 2017 Horizon K-12 Edition. Truly immersive virtual reality experiences are very

expensive, she said, and cheaper alternatives, like Google Cardboard, provide an experience more akin to watching a movie.

"I think a lot of this is hype and wishful thinking about the future and not really connected to what schools can do, what schools want to do, or what the technology can even offer," Watters said. Only 5 percent of teachers use virtual reality in the classroom, and just 23 percent said they would feature it in their ideal school environment, according to a **2016 Project Tomorrow study**.

The report is not meant to be a prescriptive technology checklist, said Krueger, but rather a jumping off point for conversations with school boards, parent-teacher associations, and other community stakeholders about how technology can help educators meet their instructional goals.

"I think that the power of it is that you can say, 'In the larger world of K-12 education, these are the big trends right now. Do any of these have relevance for what we're trying to solve?' "

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