

# CCST Report Outlines Opportunities for Maker Education in California K-12 Classrooms

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Makerspaces offer intriguing opportunities for K-12 education in California, but challenges remain if they are to be adopted across the state, according to a new report by the **California Council on Science and Technology (CCST)**.

“The Maker Movement and K-12 Education: Current Status and Opportunities for Engagement in California” provides an overview of the history and trends in maker education in California K-12 institutions. The report is available for download at: <http://ccst.us/publications/2017/2017K-12makers.php>

“We set out to give an overview of what makerspaces look like in K-12 environments, and what maker-centered instruction and assessment of learning looks like at that level,” says CCST Senior Program Associate Brie Lindsey, PhD, a report coauthor. “In particular, we wanted to identify opportunities to build on existing engagements between K-12 institutions and higher education institutions, especially with regard to the California Community Colleges Maker Initiative, which CCST also collaborates on.”

The new K-12 report found that while there is significant interest in the maker movement among K-12 educators in California, actual implementation of maker education varies. As the equipment and environment used in many makerspaces are not always practical for K-12 schools due to resource constraints and the younger age of students, K-12 educators often only adopt certain aspects of maker education.

Also, the types of open-ended educational activities inherent to makerspaces cannot be readily measured by traditional education metrics, posing a challenge for those seeking to integrate makerspaces into K-12 curricula. However, many are finding potential for educators to incorporate the “maker mentality” into existing K-12 curricula and individual lesson plans.

The maker movement has become a focus of interest for educational institutions throughout the U.S. in recent years. While much of this focus has been among colleges and universities, many K-12 institutions have explored the movement as well.

Makerspaces are creative workspaces where people can gather to tinker, invent, and learn in a collaborative, unstructured environment. They tend to leverage relatively inexpensive, rapid-prototyping machinery such as 3-D printers and laser cutters, along with highly interconnected and supportive communities of software and hardware designers.

In 2015, the California Community Colleges Chancellor’s Office sought to systematically develop a network of makerspaces statewide, and commissioned CCST to author a report as well as a regional symposia series to provide community college leaders around California with a roadmap and community for planning and operating regional maker hubs (available at <http://ccst.us/projects/makerspace>).



“Exploring opportunities for the maker movement in California’s K-12 environment is a natural extension of the work we undertook for the California Community Colleges,” says CCST Executive Director Susan Hackwood, PhD. “There is a groundswell of interest and investment to bring maker education to California’s K-12 schools. Education organizations and leaders around the country are already actively growing this movement, and we hope this report adds to that conversation and serves as a helpful reader for anyone interested in STEM education innovation.”

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### **About the California Council on Science and Technology**

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