

# Project-based learning yields better student outcomes

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Students in project-based learning classrooms across the United States

significantly outperform those in typical classrooms, according to studies announced by Lucas Education Research, along with five major universities, including the University of Michigan.

Lucas Education Research is a division of the George Lucas Educational Foundation, founded by the award-winning filmmaker in 1991. Two of the four [project](#)-based learning studies involved research teams from the U-M School of Education.

Nell Duke, U-M professor of [education](#), and Anne-Lise Halvorsen, associate professor of teacher education at Michigan State University, worked jointly on Project PLACE ([Project-approach to Literacy and Civic Engagement PDF](#)), which found that second grade students gained five to six months more learning in social studies and two months more in informational reading after receiving project-based instruction. Their project involved students from low-income backgrounds from underrepresented racial and ethnic groups.

The Project PLACE curriculum includes four projects covering economics, geography, history and civics. In one example of project-based learning, students develop a civics proposal in which they convey through letters and a group presentation to government officials ideas to make improvements to a public space, such as a local playground.

"Too often, students in high-poverty school districts are denied the opportunity to experience intellectually rigorous and engaging curricula," Duke said. "This study shows what can happen when that opportunity is available. Through project-based learning, students made contributions to their local community and showed growth on measures of achievement. I'm hopeful that the project-based learning approach that we studied will be taken up more widely."

In another study, [Multiple Literacies in Project-Based Learning PDF](#),

Annemarie Sullivan Palincsar, chair of educational studies and the Ann L. Brown Distinguished University Professor at U-M, and Joseph Krajcik, the Lappan-Phillips Professor of Science Education and director of the CREATE for STEM Institute at MSU, found that third grade students in project-based learning classrooms scored eight percentage points higher on a state [science](#) test than students who experienced typical science teaching methods. These effects held, regardless of reading level.

Their curriculum is aligned to Next Generation Science Standards, with an interdisciplinary focus emphasizing science learning and literacy and math knowledge and skill, as well as aspects of social and emotional learning. Questions that focus on real-world problems and complex scientific phenomena drive the learning and anchor the lessons. The approach includes curricular and instructional resources, assessments and professional-learning support for teachers.

"It is much easier to engage students in learning to use the literacy tools of reading, writing, viewing and speaking if there are interesting and meaningful reasons to use those tools," Palincsar said. "Consider how tedious it would be to practice playing musical scales if you did not put those notes together to play actual music that you and others can sing and dance to.

"If we do not begin teaching literacy and science in an integrated fashion and in the early grades, it will be very hard, if not impossible, to ensure that our citizens leave school with the capacity to make informed decisions regarding the world they wish to live in and leave for the next generation."

The two other studies announced by the foundation included University of Southern California-led research on achievement in high school AP classes when students are taught using a project-based version of the

course and a Stanford University study on using the methods for teaching middle school science.

"Education is the foundation of our democracy," said Lucas, chairman of GLEF. "Project-based learning offers students rigorous academic experiences that take them beyond the boundaries of textbooks and lectures. In the process, they learn critical thinking skills and the competence to solve problems in the world around them."

**More information:** The studies are available online:  
[www.lucasedresearch.org/research/research-briefs/](http://www.lucasedresearch.org/research/research-briefs/)

Provided by University of Michigan

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