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Does Deeper Learning Improve Student Outcomes?

Results From the *Study of Deeper Learning: Opportunities and Outcomes*

For the *Study of Deeper Learning: Opportunities and Outcomes*, funded by the William and Flora Hewlett Foundation, experts at American Institutes for Research (AIR) set out to determine whether students who attended high schools with a mature and at least moderately well-implemented approach to promoting deeper learning actually experienced greater deeper learning opportunities and outcomes than would likely have been the case had they not attended these schools.

The study aimed to provide evidence about whether the *concept* of deeper learning—applied across a variety of reasonably well-implemented approaches and a diversity of students—has potential merit as a means for education improvement.

What Is Deeper Learning, and Why Is It Important?

What do today's students really need to learn in order to succeed, not only in the classroom but also later on in college, careers, and as engaged citizens? This question is the subject of considerable discussion and debate, particularly as efforts to increase student performance and college preparedness often fail to meet expectations.

Much of American education policy focuses on the need for students to develop deeper content knowledge and an ability to apply their knowledge and skills to tasks and situations inside and outside of school. The Common Core State Standards and Next Generation Science Standards reflect this dual focus on academic learning and real-world application.

Yet even staunch supporters of new standards believe the goals of education must reach further. Academic knowledge and skills alone won't enable students to successfully navigate a rapidly changing world, participate in a complex and increasingly diverse democracy, or engage fully in the ever-evolving 21st century workplace.

AIR's *Study of Deeper Learning: Opportunities and Outcomes* found that students who attended high schools that explicitly focused on deeper learning experienced superior outcomes when measured against students in comparison schools.

Students must be able to communicate their ideas effectively, think creatively, work collaboratively to solve problems, and manage their own learning. They need to develop dispositions—or mindsets—that empower them to confront new challenges, take initiative, and persevere through difficulties and setbacks.

This combination of (1) a deeper understanding of core academic content, (2) the ability to apply that understanding to novel problems and situations, and (3) the development of a range of competencies, including people skills and self-control, is called "deeper learning."

The William and Flora Hewlett Foundation identified six dimensions of deeper learning that, collectively, have become the focus of a national initiative to promote deeper learning in schools. These dimensions are:

- Mastery of core academic content
- Critical thinking and problem-solving
- Effective communication
- Ability to work collaboratively
- Learning how to learn
- Academic mindsets (Chow, 2010; Hewlett Foundation, 2013; Trilling, 2010)

Taking a slightly different approach, a National Research Council panel defined deeper learning as "the process through which an individual becomes capable of taking what was learned in one situation and applying it to new situations (i.e., transfer)." (National Research Council, 2012, p. 4). The concept of transferring information and skills learned in one setting to another is an important part of deeper learning.

As the definition and understanding of deeper learning evolves, experts look to research to learn how to measure its impact and use it as a strategy to improve outcomes for students.

Opportunities for Deeper Learning in Study Schools

Did students who attended high schools with at least moderately well-implemented approaches to promoting deeper learning actually experience greater deeper learning opportunities and outcomes than they would have had they not attended these schools? This question addressed a fundamental assumption that a well-implemented approach to deeper learning can result in more and better opportunities to develop critical competencies.

Research showed that deeper learning network schools applied a range of strategies and structures to foster deeper learning competencies. Those strategies and structures reported through interviews with school administrators and staff included:

- Project-based learning for mastery of core academic content and critical thinking skills
- Internship opportunities to develop connections to the real world
- Group work and long-term assessments such as portfolios and exhibitions to develop collaboration and communication skills
- Study groups and student participation in decision making to help develop academic mindsets and support learning how to learn

Students in these network schools reported experiencing more opportunities to engage in deeper learning through such strategies and structures than did similar students who attended comparison schools. Researchers found positive effects across all measures, including opportunities for complex problem solving, collaboration, communication, learning how to learn, creative thinking, assessments aligned with deeper learning, receiving feedback, interdisciplinary learning, and real-world connections. These effects were evident among a diverse group of students, including students who entered high school as either low or high achievers and students who did and did not qualify for free or reduced-price lunch.

Outcomes for Students in the Study

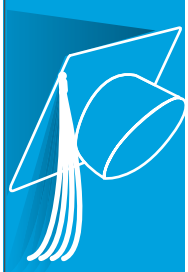
AIR analyzed data for students who attended well implementing network schools and students in comparison schools in California and New York to assess the outcomes of deeper learning strategies and structures. After accounting statistically for differences in student background characteristics, researchers identified the following results:

TEST SCORES

On average, students in deeper learning network schools achieved higher scores on the OECD PISA-based Test for Schools (PBTS)—a test that assesses core content knowledge and complex problem-solving skills—in reading, mathematics, and science than did similar students in comparison schools. These students also earned higher scores on state-mandated English language arts and mathematics tests.

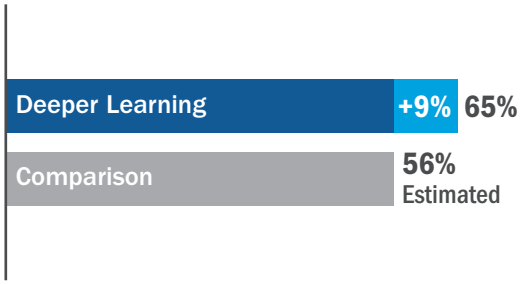
INTERPERSONAL AND INTRAPERSONAL SKILLS

Students in deeper learning network schools reported higher levels of collaboration skills, academic engagement, motivation to learn, and self-efficacy. There were no significant differences between students who attended network schools and non-network schools relative to reported creative thinking skills, perseverance, locus of control, or self-management.

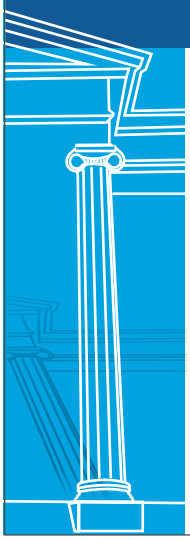


ON-TIME HIGH SCHOOL GRADUATION

Students in deeper learning network schools were more likely to graduate from high school on time (within four years of entering Grade 9) than were students from comparison schools. The graduation rate among network school students was estimated to be about 9 percentage points higher than the graduation rate among similar students in comparison schools.*

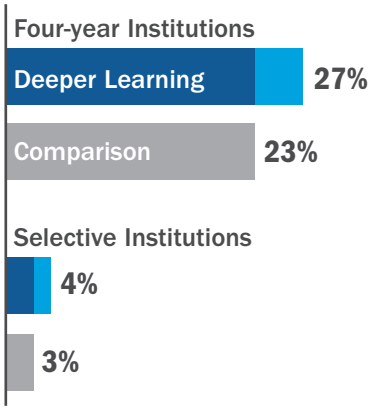


* These graduation rates may appear lower than typically reported graduation rates because students who transferred to another district prior to graduation were classified as non-graduates. According to the California state and New York City data systems, published graduation rates for schools in this study ranged from 48 percent to 100 percent, with an average graduation rate of approximately 77 percent.



COLLEGE ENROLLMENT

Students in deeper learning network schools and comparison schools had similar overall rates of enrollment in postsecondary institutions. However, students who attended deeper learning network schools were more likely to enroll in four-year institutions (27 percent compared with 23 percent) and in selective institutions (4 percent compared with 3 percent).



About the Study

For the ***Study of Deeper Learning: Opportunities and Outcomes***, AIR's research team examined a set of selected high schools associated with 10 established networks from across the country. These networks embrace the goals of deeper learning, promote instructional practices that their member schools believe are likely to lead to deeper learning competencies, and participate in the Hewlett Foundation's Deeper Learning Community of Practice. Schools in the network serve a diverse and traditionally underserved group of students, including substantial populations of students living in poverty and, in some cases, large populations of English language learners.

To examine whether students in these high schools benefitted from greater opportunities for deeper learning and more enhanced outcomes than they probably would have experienced in other schools, AIR also included students from a set of comparison schools that served similar student populations and were located in the same geographic locales as the network schools.

For more information on the *Study of Deeper Learning: Opportunities and Outcomes*, visit www.air.org/deeperlearning.

About AIR

Established in 1946, American Institutes for Research (AIR) is an independent, nonpartisan, not-for-profit organization that conducts behavioral and social science research on important social issues and delivers technical assistance, both domestically and internationally, in the areas of education, health, and workforce productivity.

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