

# Study: Many college students not learning to think critically

## The Hechinger Report

Published Monday, Jan. 17, 2011

NEW YORK — An unprecedented study that followed several thousand undergraduates through four years of college found that large numbers didn't learn the critical thinking, complex reasoning and written communication skills that are widely assumed to be at the core of a college education.

Many of the students graduated without knowing how to sift fact from opinion, make a clear written argument or objectively review conflicting reports of a situation or event, according to New York University sociologist Richard Arum, lead author of the study. The students, for example, couldn't determine the cause of an increase in neighborhood crime or how best to respond without being swayed by emotional testimony and political spin.

Arum, whose book "Academically Adrift: Limited Learning on College Campuses" (University of Chicago Press) comes out this month, followed 2,322 traditional-age students from the fall of 2005 to the spring of 2009 and examined testing data and student surveys at a broad range of 24 U.S. colleges and universities, from the highly selective to the less selective.

Forty-five percent of students made no significant improvement in their critical thinking, reasoning or writing skills during the first two years of college, according to the study. After four years, 36 percent showed no significant gains in these so-called "higher order" thinking skills.

Combining the hours spent studying and in class, students devoted less than a fifth of their time each week to academic pursuits. By contrast, students spent 51 percent of their time — or 85 hours a week — socializing or in extracurricular activities.

The study also showed that students who studied alone made more significant gains in learning than those who studied in groups.

"I'm not surprised at the results," said Stephen G. Emerson, the president of Haverford College in Pennsylvania. "Our very best students don't study in groups. They might work in groups in lab projects. But when they study, they study by themselves."

The study marks one of the first times a cohort of undergraduates has been followed over four years to examine whether they're learning specific skills. It provides a portrait of the complex set of factors, from the quality of secondary school preparation to the academic demands on campus, which determine learning. It comes amid President Barack Obama's call for more college graduates by 2020 and is likely to shine a spotlight on the quality of

the education they receive.

"These findings are extremely valuable for those of us deeply concerned about the state of undergraduate learning and student intellectual engagement," said Brian D. Casey, the president of DePauw University in Greencastle, Ind. "They will surely shape discussions about curriculum and campus life for years to come."

Some educators note that a weakened economy and a need to work while in school may be partly responsible for the reduced focus on academics, while others caution against using the study to blame students for not applying themselves.

Howard Gardner, a professor at Harvard's Graduate School of Education known for his theory of multiple intelligences, said the study underscores the need for higher education to push students harder.

"No one concerned with education can be pleased with the findings of this study," Gardner said. "I think that higher education in general is not demanding enough of students — academics are simply of less importance than they were a generation ago."

But the solution, in Gardner's view, shouldn't be to introduce high-stakes tests to measure learning in college because, "The cure is likely to be worse than the disease."

Arum concluded that while students at highly selective schools made more gains than those at less selective schools, there are even greater disparities within institutions.

"In all these 24 colleges and universities, you have pockets of kids that are working hard and learning at very high rates," Arum said. "There is this variation across colleges, but even greater variation within colleges in how much kids are applying themselves and learning."

For that reason, Arum added, he hopes his data will encourage colleges and universities to look within for ways to improve teaching and learning.

Arum co-authored the book with Josipa Roksa, an assistant professor of sociology at the University of Virginia. The study, conducted with Esther Cho, a researcher with the Social Science Research Council, showed that students learned more when asked to do more.

Students who majored in the traditional liberal arts — including the social sciences, humanities, natural sciences and mathematics — showed significantly greater gains over time than other students in critical thinking, complex reasoning and writing skills.

Students majoring in business, education, social work and communications showed the least gains in learning. However, the authors note that their findings don't preclude the possibility that such students "are developing subject-specific or occupationally relevant skills."

Greater gains in liberal arts subjects are at least partly the result of faculty requiring higher levels of reading and writing, as well as students spending more time studying, the study's authors found. Students who took courses heavy on both reading (more than 40 pages a week) and writing (more than 20 pages in a semester) showed higher rates of learning.

That's welcome news to liberal arts advocates.

"We do teach analytical reading and writing," said Ellen Fitzpatrick, a history professor at the University of New Hampshire.

The study used data from the Collegiate Learning Assessment, a 90-minute essay-type

test that attempts to measure what liberal arts colleges teach and that more than 400 colleges and universities have used since 2002. The test is voluntary and includes real world problem-solving tasks, such as determining the cause of an airplane crash, that require reading and analyzing documents from newspaper articles to government reports.

The study's authors also found that large numbers of students didn't enroll in courses requiring substantial work. In a typical semester, a third of students took no courses with more than 40 pages of reading per week. Half didn't take a single course in which they wrote more than 20 pages over the semester.

The findings show that colleges need to be acutely aware of how instruction relates to the learning of critical-thinking and related skills, said Daniel J. Bradley, the president of Indiana State University and one of 71 college presidents who recently signed a pledge to improve student learning.

"We haven't spent enough time making sure we are indeed teaching — and students are learning — these skills," Bradley said.

Christine Walker, a senior at DePauw who's also student body president, said the study doesn't reflect her own experience: She studies upwards of 30 hours a week and is confident she's learning plenty. Walker said she and her classmates are juggling multiple non-academic demands, including jobs, to help pay for their education and that in today's economy, top grades aren't enough.

"If you don't have a good resume," Walker said, "the fact that you can say, 'I wrote this really good paper that helped my critical thinking' is going to be irrelevant."

(This article was produced by The Hechinger Report, a nonprofit, nonpartisan education-news outlet affiliated with Teachers College, Columbia University.)

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