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## **Encounters With Diversity, on Campuses and in Course Work, Bolster Critical-Thinking Skills, Studies Find**

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Worries about the quality of undergraduate education tend to be magnified by concerns about the increasing diversity of students entering college.

Many colleges are already struggling to adequately teach students and to document their learning to the public. How well will those institutions be able to meet the needs of tomorrow's students, who will hail from more-varied racial, ethnic, educational, and economic backgrounds, than today's?

Four studies that are awaiting publication and were presented here at the annual meeting of the Association for the Study of Higher Education offer reasons for optimism. They find that students' scores on standardized tests of critical thinking grow when they encounter diversity, either when they come into contact with students from backgrounds that are different from their own or when they take diversity courses. And white students seem to benefit most.

The studies arrive as the U.S. Supreme Court considers the constitutionality of a race-conscious admissions policy at the University of Texas at Austin. During past court battles, advocates and foes of affirmative-action programs have cited research to bolster their claims, but the data often relied on student surveys.

"The challenge we've had up to this point is we haven't had enough empirical evidence," Luis Ponjuan, an associate professor of higher-education administration at Texas A&M University at College Station, said at the meeting. "The work we're doing today is going to inform the paradigm shift in higher education."

Several of the new studies are based on a rich pool of data, the Wabash National Study of Liberal Arts Education. It is a longitudinal study of full-time students who attended four-year colleges representing a cross section of regions, missions, and levels of selectivity.

The students were surveyed three times: in 2006, before they started their freshman year, again when they finished their first year, and once more in 2010, near the end of their senior year. They were assessed on a broad range of experiences and attitudes, as well as on aspects of their personality and behavior. They also took the Collegiate Assessment of Academic Proficiency, a standardized test of critical-thinking skills.

Two of the studies used similar methods and shared four co-authors, including Ernest T. Pascarella, a professor of higher education at the University of Iowa, and Charles F. Blaich, a professor of psychology and director of the Center of Inquiries at Wabash College, in Indiana, which produces the Wabash study.

In one of those two studies, described in a paper provisionally titled "Conditional Good Practices," the authors analyzed the responses of 2,212 students at 17 institutions in the Wabash study. The authors sought to quantify the impact that widely accepted practices had on educational outcomes after factoring in the students' background characteristics. The practices the researchers analyzed mirrored those identified by the National Survey of Student Engagement. They included working with a faculty member on a research project, involvement in cocurricular programs, and interactions with students who differed from them by race, national origin, religion, values, or political belief. Students were asked, for instance, how often they had engaged in honest and meaningful conversations with students whose race or ethnicity differed from theirs, and had taken cultural-awareness workshops.

The practices affected some groups of students positively, while having no impact on others, the authors found. Only one practice, interactions with diversity, had a statistically significant positive impact by the fourth year on all students. It did so on their critical-thinking skills, on their enjoyment of reading and writing, and on their intellectual curiosity. When adjusting for previous academic achievement, the results were even more pronounced.

The greatest benefits, wrote the paper's lead author, Tricia A. Seifert, an assistant professor in the Ontario Institute for Studies in Education at the University of Toronto, "accrued to students who entered college in 2006 with relatively low levels of critical-thinking skills."

The second of those two studies looked more narrowly at the interplay between scores on the critical-thinking test and interactions with diversity. It produced largely the same

results, finding a substantial relationship between interactions with diversity and the critical-thinking skills of students.

"The most pronounced cognitive benefits of diversity experiences during college," the authors wrote, "may actually accrue to white students."

### **More Contact, More Benefit**

While those two studies did not mention the current battles over affirmative action, a third drew an explicit connection to the legal and political fight under way.

In a paper describing his study, Nicholas A. Bowman, an assistant professor of higher education and student affairs at Bowling Green State University, laid out a theory of how students' contact with diversity relates to growth in critical-thinking skills. Using data from the Wabash study, he devised a model to argue that the effect is not linear, in which a small bit of exposure to diversity would correlate with an equally small bit of growth in critical thinking.

Instead, it is "curvilinear," he wrote, which means that initial contact with diversity often results in negligible growth in critical-thinking and other measures, like psychological well-being and leadership skills.

Sometimes scores on those measures go down after one such interaction, Mr. Bowman said. Such a dynamic makes sense, he added, because initial contact with difference often reinforces stereotypes. After two or more instances of meaningful contact with people from different backgrounds, Mr. Bowman said, the growth starts to become more evident, and eventually increases rapidly.

"College diversity interactions only lead to educational benefits when these experiences occur frequently," he wrote.

He argued that his findings had implications for a central consideration that emerged during oral arguments at the Supreme Court. The justices wondered how much racial and ethnic diversity colleges should seek, and how many minority students were needed to compose a "critical mass" of members of that group.

Mr. Bowman said his research suggests that more contact with diversity yields more educational value. "Critical mass might be the minimum level at which you see benefits," he said at the meeting.

The fourth study used a different test of critical-thinking skills, the essay portion of the Collegiate Learning Assessment, or CLA.

Sable Manson, a third-year doctoral student at the University of Southern California, presented research led by Darnell Cole, an associate professor of education there. He and his colleagues tracked 529 undergraduate students who took a course that satisfied a diversity requirement at a large private research university.

The courses were organized by type. Some explicitly advanced goals of inclusion and social justice, like a class in intercultural communication. Others, like African-American art, dealt with difference more implicitly; they were part of more-traditional disciplines but focused on the contributions of cultures that have tended to be underrepresented in the canon.

The courses were not the only contributing factor. Ms. Manson and her fellow researchers wanted to see whether service-learning projects also played a role in bolstering critical-thinking skills. Students in the study took the CLA before participating in an eight-week service-learning project and again after. Those who took courses like African-American art, which are grounded in the more-traditional disciplines, witnessed the biggest growth. Students in these courses saw their scores increase by nearly one-third of one point on the six-point critical-thinking scale.

### **'Cognitive Dissonance'**

Several of the authors said in interviews that the findings were not surprising in the context of one of higher education's long-established purposes: that students attend college to be exposed to new and unfamiliar ideas.

Students who enter college immediately after high school are often trying to sort out who they are, and coming into contact with people from different backgrounds, whether in class or informally, often spurs discomfort, reflection, and, eventually, learning. "It creates a level of cognitive dissonance where you have to think, struggle, and reconcile these ideas," Ms. Seifert, of Toronto, said in an interview after her paper was presented.

Several researchers emphasized that diversity goes beyond race. Mr. Bowman pointed out during a discussion of his paper that questions on the Wabash survey include differences in national origin, religion, values, and political beliefs.

Other scholars have argued that diversity courses and interactions with difference may contribute to critical-thinking because faculty who teach such courses and engage in frank discussions about difference are also likely to engage in other practices that tend to produce learning. They also tend to teach in ways that prod students to take a more-active role in their courses, said Thomas F. Nelson Laird, an associate professor in the

department of education leadership and policy studies at Indiana University at Bloomington.

"It would appear that faculty who latch onto good educational practices don't just latch onto one," Mr. Laird said in an interview. He presented research last month at a meeting on diversity and teaching sponsored by the Association of American Colleges and Universities. "They see this as an avenue to good education."

Mr. Pascarella, of Iowa, said that he and his colleagues had tried to counter the possibility that background factors and influences could overlap to create the appearance of a positive relationship where none existed.

"We're scientists. We try to disprove things," he said, describing the statistical controls they put in place. And, after a session on Friday, he engaged in a thought experiment.

"What if we found the opposite?" he asked, referring to the relationship between diversity and gains in critical thinking. He wondered: Would his fellow scholars have greeted the findings as warmly? Would their work have been published? "That's always been in the back of my mind."

*Correction (11/20/2012, 12:20 p.m.):* This article originally neglected to mention the lead researcher in the study of gains on the Collegiate Learning Assessment. That researcher was Darnell Cole, an associate professor of education at the University of Southern California. The study was presented at the meeting by Sable Manson, a doctoral student at USC. The article has been updated to reflect this correction.