CIRP Research Update

Hundreds of research articles, presented papers and books have used CIRP data to examine various facets of the college experience. In this Research Update we highlight four articles we think would be of particular interest to CIRP users.

Linking Diversity and Civic-Minded Practices with Student Outcomes

Sylvia Hurtado, director of the Higher Education Research Institute (HERI), and Linda DeAngelo, assistant director for research at the Cooperative Institutional Research Program (CIRP), present national evidence of the positive impact of diversity and civic-related practices from the CIRP student surveys and the HERI Faculty Survey.

Looking at several longitudinal data sets that combine CIRP Freshman Survey (TFS) data on students entering college with additional data collected at the end of the first year via the Your First College Year (YFCY) survey, as well as at the end of the senior year via the College Senior Survey (CSS), the authors linked outcome measures with pre-existing characteristics of the students and experiences during college.

Using the CIRP Construct *Habits of Mind*, which measures the behaviors and traits associated with academic success in college and lifelong learning, they looked at the effects of participating in campus-facilitated educational experiences (e.g., student-faculty interaction, working on a professor's research project, service learning) and informal educational experiences (e.g., discussing course content with other students outside of class, studying with other students, having meaningful and honest discussions about race/ethnic relations outside the classroom with students of a different race/ethnicity). Results indicated that peer experiences during the first year of college were largely the most powerful experiences leading toward gains in habits of mind.

Similarly, when looking at the CIRP Construct *Pluralistic Orientation*, which identifies traits and skills necessary for negotiating a diverse workforce, positive cross-racial interaction, frequently performing volunteer work, leadership training and service learning all impacted gains in this area over four years of college.

Turning to the HERI Faculty Survey, the authors demonstrated that faculty who facilitate such experiences—for instance, using community service as part of a class—are more likely to use student-centered pedagogy and foster students' habits of mind. They are also more likely to win teaching awards on campus.

The authors use the CIRP surveys to show the link between campus climate, institutional practices and student outcomes. They demonstrate that different initiatives on campus, such as community service, and experiences assisting faculty with research, lead to desirable gains in both academic and diversity-related outcomes. Co-curricular experiences in college, such as interactions with diverse peers, also impact gains in these areas. Hurtado and DeAngelo close by telling us, "The nature of the climate, opportunities for learning about diversity, and civic-minded practices among faculty and staff are key features of inclusive learning environments that result in developing informed and engaged citizens."

Hurtado, S., & DeAngelo, L. (2012). Linking diversity and civic-minded practices with student outcomes: New evidence from national surveys. *Liberal Education, 98*(2), 14–23.

Using Validation Theory to Understand College Success

Hurtado, Cuellar and Guillermo-Wann (2011) examined students' sense of validation and advanced the connection between college success (including college completion) and both academic and interpersonal validation. Validation occurs when a faculty or staff member at an institution "takes an active interest in students and takes the initiative to reach out to them" (Hurtado et al., p. 55). The theory of validation was advanced using qualitative data, but in this article the authors describe how they developed quantitative survey measures on CIRP's new Diverse Learning Environments (DLE) survey, which enables validation theory to be more widely applied. Validation shifts the focus on college success and completion from a sole reliance on student engagement (which can be difficult for commuting students or those whose family and/or economic needs dictate less time on campus) to how students experience the learning environment.

The DLE contained seven questions related to academic validation in the classroom and six that addressed general interpersonal validation. It was pilot tested using 14 institutions, including three community colleges, six public 4-year institutions, and five private 4-year institutions. The authors then conducted construct validity and cross-validation tests on two separate sets of students, white students and students of color, to ensure that the constructs held for both populations.

Results showed that both academic validation in the classroom and general

interpersonal validation were measured well in the DLE, and that while the concepts worked slightly differently for both populations, each could be used to understand validation in college. White students and students of color experienced differential levels of both types of validation, with white students scoring higher in both cases. As the authors note, the DLE revealed that for students of color, a sense of validation depended more on the feeling that faculty empowered them to learn than it did for white students. Similar relationships were evident in students' feeling that their contributions were valued in class and whether or not staff recognized their achievements.

Having established the effectiveness of the quantitative measures of validity on the DLE, the authors close by calling for further research using these measures, especially with diverse populations. They note that institutional researchers administering the DLE can link validation to CIRP outcomes measures such as habits of mind and pluralistic orientation, as well as local data on retention and persistence.

Hurtado, S., Cuellar M. & Guillermo-Chan, C. (2011). Quantitative measures of students' sense of validation: Advancing the study of diverse learning environments. *Enrollment Management Journal, 5*(2), 53–71.

Institutional Practices Lead Toward Increasing Student-Faculty Interaction Among STEM Students

With national imperatives for universities to remain competitive in the science, technology, engineering and math (STEM) fields, it is important to understand what institutional and individual barriers exist, how these barriers can be minimized, and if the problems and solutions are different at different types of institutions. Using a mixed-method approach that combined use of the CIRP Freshman Survey (TFS) and the Your First College Year Survey (YFCY) with interviews and focus groups, Hurtado and her colleagues (2011) examined how student experiences and perceptions relate to student-faculty interaction for prospective STEM students at the end of the first year of college. As previous CIRP research has shown, increased student-faculty interaction leads to greater cognitive and affective gains in college, but such interaction is less likely to happen at larger institutions.

Both participating in a preprofessional or department club and working on a professor's research project were experiences that increased student-faculty interaction. Black students exhibited different findings that depended on the type of institution they attended. In general, Black students tended to interact less with faculty than other students. This depended heavily on the type of institution, however. At historically Black colleges or universities, Black students were more likely to interact with faculty than Black students at predominantly white institutions, at less selective institutions, and at smaller institutions. However, similar effects on Latino/a students at Hispanic-serving institutions were not seen in the data.

Studying with other students in college, discussing course content with students outside of class and feeling successful in managing the academic environment were also factors that pointed toward greater student-faculty interaction by the end of the first year of college.

The authors closed with recommendations that colleges and universities promote programs and activities that facilitate such positive interactions as listed above, and especially shape the type and magnitude of such interventions by taking into account the size and selectivity of the institution. By following such recommendations, we will eventually begin to see increases in the numbers of STEM graduates entering the workforce.

Hurtado, S., Eagan, K. M., Tran, M. C., Newman, C. B., Chang, M. J., Velasco, P. (2011). "We Do Science Here": Underrepresented students' interactions with faculty in different college contexts. *Journal of Social Issues, 67*(3), 553–579.

College Experiences with Diversity Have Long-Lasting Impact

Bowman, Brandenberger, Hill & Lapsley (2011) show that the impact of having diverse experiences in college carries into later life. The authors used CIRP Freshman Survey (TFS) data combined with College Senior Survey (CSS) data from the same students four years later, all at a single medium-sized Catholic university in the Midwest. The authors then followed up with the group by administering a survey they designed for the students to take 13 years after graduation.

Using CSS data on the college experience, Bowman and his colleagues could determine whether both curricular experiences—such as participating in a racial/cultural awareness workshop and taking an ethnic studies class—and experiences outside of class—such as socializing with racially diverse peers—had a discernible effect 13 years after college. The outcomes they were interested in were satisfaction with life, volunteering, personal growth, recognition of racism, and having an identified and engaged purpose, among others.

The authors found that college diversity experiences did indeed have an impact, even over a decade after leaving college. Students who had participated in racial awareness workshops were more likely to recognize racism later in life, as well as to volunteer, experience more personal growth and have a more engaged purpose. There were no differences, however, in life satisfaction or control over one's life. Results of having taken an ethnic studies course were similar. The authors conclude with a recommendation that colleges and universities increase efforts to make such opportunities for students widely available, given the multiple benefits that have lasting life effects.

Bowman, N. A., Brandenberger, J. W., Hill, P. L., & Lapsley, D. K. (2011). The long-term impact of college diversity experiences: Well-being and social concerns 13 years after graduation. *Journal of College Student Development*, *52*, 729–739.