



Digest of Recent Research

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Edited by Matthew J. Mayhew

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About the Digest

CIC's *Digest of Recent Research* is a compendium of summaries of research that independent college and university presidents are likely to find helpful. The *Digest* highlights timely research from scholarly journals and other publications with a focus on findings useful to presidents and to other leaders of independent colleges and universities. Edited by Matthew Mayhew, William Ray and Marie Adamson Flesher Professor of Educational Administration at Ohio State University, each *Digest* offers a brief summary of selected articles that includes a discussion of the findings and implications for action by the leadership of independent colleges and universities. CIC is grateful to the Spencer Foundation for its support of this series.

Article reviews in the *Digest of Recent Research* can be downloaded as a single document (PDF). For questions or comments about the *Digest*, please contact Lesley McBain, director of research projects, at lmcbain@cic.nche.edu.

About the Editor

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Invisible Colleges, Four Decades Down the Road

Tarrant, M., N. Bray, and S. Katsinas. 2018. "The Invisible Colleges Revisited: An Empirical Review." *Journal of Higher Education* 89 (3): 341–367.

SUMMARY

The purpose of this study was to examine empirically small private colleges with limited resources. The authors grounded their study in Astin and Lee's (1972) report, *The Invisible Colleges: A Profile of Small, Private Colleges with Limited Resources*, and in Clark Kerr's designation of these colleges as those with smaller enrollments, less selective admissions policies, lower national recognition, and often threatened by closure.

With these definitions as a guide, the authors used Adrianna Kezar's theoretical work on organizational change to describe how the 491 colleges identified by Astin and Lee have changed over time, from 1967–1968 to 2012–2013. Astin "graciously shared" (p. 347) the original list of invisible institutions with one of the authors of this study. The authors then employed the same methodologies used by Astin and Lee four decades ago to determine how these colleges have fared over time. Replicating 1972 procedures, the authors used the U.S. Department of Education's Integrated Postsecondary Education Data System (IPEDS) data to identify each college's status in 2012, including information on closures, enrollment patterns, selectivity indicators, religious affiliation, gender patterns, and geographic distribution. In addition, the authors examined some trends specific to historically black colleges and universities (HBCUs).

DISCUSSION OF THE FINDINGS

The authors frame their discussion in light of the "durability" (p. 358) these colleges have exhibited over 45 years. Specifically, 72 percent of all of the colleges designated as invisible in the data collection period of 1967–1968 remained open in 2012–2013, a trend that "speaks to their adaptability in a changing higher education environment, without changing their inherent commitment to providing higher education in the private sector" (p. 358). The authors also point out that 354 of the original 491 institutions not only kept their doors open, but also experienced increases in enrollment and selectivity.

One of the most "striking" (p. 361) findings of this study was in enrollment shifts from full to part-time over the past 45 years. In the original data collection period, more than half of these colleges enrolled 90 percent or more of their students full-time; by 2012–2013,

that number had shrunk to one-third. The authors credit campus leaders with staying on top of national college-going trends regarding the changing student population and with adopting strategies for recruiting women and adult learners as strategic means for staying afloat.

Much of the information on selectivity was subject to unavoidable methodological issues (for example, evolving selectivity metrics) due to changes in IPEDS data over time. Given these limitations, the authors noted, "Overall, we see that the invisible college survived and grew by following the overall trends that exist in the larger system as a whole: increased enrollment, higher selectivity, increased enrollment of part-time students, and enrollment of an increasing number of female students" (p. 361).

The authors also examined religious affiliation, gender patterns, and geographic distribution as well as some trends relating to HBCUs. Regarding religious affiliation, the authors note that

"a strong majority of the persisting invisible colleges continue to be affiliated with a religious denomination" (p. 360). These institutions also enrolled women at a slightly higher rate (60 percent) than their non-invisible elite counterparts (57 percent). Most of the 80 invisible colleges that closed over the 45-year period were located in the Midwest (49 percent), followed by the Northeast (28 percent), South (11 percent), and West (10 percent). Of particular interest, invisible HBCUs persisted at a higher rate (82 percent) than other invisible colleges (77 percent).

IMPLICATIONS FOR ACTION BY CAMPUS LEADERS

Campus leaders should be encouraged by the findings from this study. The majority of these invisible colleges are doing well, far beyond expectations set forth by Astin and Lee and Kerr 45 years ago. Although the authors could not

provide a step-by-step analysis of each college's strategy for sustainability and resiliency, they discuss the importance of population ecology and its role in innovative enrollment strategies that go beyond targeting one specific group of students.

Although it may be tempting to examine only trends and benchmark data of institutions demographically and characteristically similar to one's own, findings from this article suggest that invisible college leaders demonstrated a vested interest in staying abreast of national college-going trends as well as of best

practices at other institutions (such as large public universities or community colleges). This was a factor in their institutions' persisting to the present day. Campus leaders may want to expand their vision of what constitutes peer and aspirant institutions in light of these findings.

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LITERATURE READERS MAY WISH TO CONSULT

Astin, A. W., and C. B. Lee. 1972. *The Invisible Colleges: A Profile of Small, Private Colleges with Limited Resources*. New York: McGraw-Hill.

Motivating Faculty Participation in Transformational Communities

Kezar, A., S. Gehrke, and S. Bernstein-Sierra. 2018. "Communities of Transformation: Creating Changes to Deeply Entrenched Issues." *Journal of Higher Education* 89 (6): 832–864.

SUMMARY

Higher education scholars and administrators have found moving communities from transaction to transformation a perennial challenge. Extrapolating findings from STEM faculty members to consider transformative change in higher education more broadly, this article provides welcome information on the ways higher education stakeholders can motivate faculty to participate in "communities that create and foster innovative spaces that envision and embody a new paradigm of practice" (p. 833). The authors used a multi-phase mixed-method design including observations, interviews, document analyses, and survey techniques to examine practice communities comprised of thousands of faculty members. The article articulates five criteria for inclusion, shared by each community: "(a) STEM education and reform as focus, (b) large in scale and leading to dissemination of best practices, (c) focused STEM reform within the context of postsecondary education, (d) long enough history so we could study not just formation but also outcomes and sustainability; and (e) the ability to survey community members" (p. 839). Examining these communities enabled the authors to identify ways administrators could motivate faculty members to participate in transformation efforts, many of which were initiated by college presidents.

The authors used Mezirow's (1991) transformational-learning theory to ground their understanding of practice communities and as a framework for interpreting findings. As such, the study was guided by theoretical assumptions regarding the nature of transformational learning and the processes needed to achieve such learning. To start, learning "is considered transformational if it involves a fundamental questioning or reordering of how one thinks or acts—a challenge to hegemonic or normative practices (Brookfield, 2012)." According to Mezirow, this process of disruption occurs in three phases, beginning with a disorienting dilemma, followed by a critical assessment of the reasons communities ascribed disorientation to the presented dilemma, and ending with an action plan intended to implement new strategies for moving through the presented dilemma.

These three processes helped the authors make meaning of the four communities of practice and their movement toward transformational change. The authors provided examples of how Mezirow's structural approach to transformation led to change within each community's respective context.

DISCUSSION OF THE FINDINGS

What makes a community of practice transformational? The authors found three distinctive characteristics that comprise a transformational community of practice: "(a) They focus on creating and fostering transformative learning; (b) they rely on philosophy to define the domain more than existing practice; and (c) philosophy is central to their community adhesion, engagement, action, and learning (p. 853)." In essence, communities of transformation center philosophy over existing practice: When

faced with disorienting dilemmas, transformational faculty members engage in processes that prioritize values over efficiencies when creating action plans to produce change.

IMPLICATIONS FOR CAMPUS LEADERS

Although the focus is on STEM, this study is important in other areas as well. First, the study is reminiscent of Howard Gardner's address at CIC's 2019 Presidents Institute, as he spoke of transformative frames as opposed to transactional ones: To paraphrase, yes,

learning is change, but not all change is necessarily transformative.

Second, the ways the authors used Mezirow's three steps to motivate faculty members to become actors in the process of transformational change were worth noting. Across communities, a similar sequential three-part structure was ascribed to the process of making meaning of existing problems and moving toward collective transformative action—identifying a dilemma and why it's disorienting; treating the disorientation as a platform for reflection; and using reflection to find innovative solu-

tions. Administrators who want to engage faculty members in transformative change may wish to adopt this theoretically based strategy.

Beyond process, the authors emphasize the use of philosophy and its careful articulation for engaging faculty members in making transformative change. Although perhaps trite, involving professors in values-based discussions appears to be critical in influencing trans-

formative change. What do faculty leaders value? Across communities, faculty members who engaged in transformational change discussed their collective values as a starting point for making meaning of the disorienting dilemma, for critically reflecting on it, and for developing a plan of action for moving forward. Using teaching as an example of a disorienting dilemma, transformative faculty members problematized tra-

ditional ideas of teaching by moving beyond discussions of what works and what does not, to what held and should continue to hold pedagogical value within the particular learning community. By articulating these values, transformative professors were able to codify a philosophy of learning to help guide decision making and move toward new, more useful practices.

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LITERATURE READERS MAY WISH TO CONSULT

Brookfield, S. D. 2012. "Critical Theory and Transformative Learning." In *The Handbook of Transformative Learning: Theory, Research, and Practice*, edited by E. W. Taylor and P. Cranton, 131–146. San Francisco: Jossey-Bass.

Mezirow, J. 1991. *Transformative Dimensions of Adult Learning*. San Francisco: Jossey-Bass.

How Culture Shapes Faculty Members' Experiences—for Good or Ill—at Liberal Arts Colleges

Pifer, M. J., V. L. Baker, and L. G. Lunsford. 2019. "Culture, Colleagues, and Leadership: The Academic Department as a Location for Faculty Experiences in Liberal Arts Colleges." *Review of Higher Education* 42 (2): 537–564.

SUMMARY

"We have a lot of dysfunctional departments, because the administration allows them to be so. I've been chair for six years. Ever since I got tenure. There are no tools that I'm given; no training on how to deal with conflict or how to make it a better place. I've tried everything I can think of, and we're still dysfunctional. It's taken a toll on me and not been made any better. But there's absolutely zero support from the administration in trying to create a decent working environment at the departmental level, and there's no way for us to punish or reward people who behave poorly or well. God, I desperately want out, but I don't see any way. There's no one else to do it." (p. 554)

As the quotation above indicates, this study examined faculty members' work at liberal arts colleges (LACs) and the role departments play in shaping their experiences. Grounded in theories of positive organizational behaviors, the authors adopted a phenomenological approach to data collection, control, and analysis and interviewed 55 faculty members at liberal arts colleges, including Albion College, Allegheny College, Denison University, DePauw University, Earlham College, Hope College, Kalamazoo College, Oberlin College, Ohio Wesleyan University, Wabash College, and the College of Wooster. The interviews were structured to ascertain "faculty work and experiences within LACs" (p. 544). Findings provided information on department cultures (for example, positive and challenging department cultures), department colleagues (such as positive and challenging collegial relationships), and departmental leadership (challenging experiences with chairs, positive experiences as chairs, and challenging experiences as chairs). Among the many important implications, the authors suggest that institutional leaders need to do a better job of selecting, training, and supporting department chairs, who inevitably shape the culture in which faculty members work and students learn.

DISCUSSION OF THE FINDINGS

The authors categorized findings into three areas: department cultures, colleagues, and leadership. In the area of cultures, 14 of the 55 participants had positive department experiences, expressed by "cultural indicators within their departments such as traditions and rituals that helped socialize new faculty members into the institutions and fostered positive cultures over time" (p. 548). Examples of these include traditions of using department meeting times to celebrate the academic and personal achievements of faculty members and for issues related to problem-solving.

Frequently, the authors used examples of faculty members' exchanges with each other and with their chairs to illuminate department culture. Challenging department cultures were mentioned by 12 participants who spoke of seeming mismatches between faculty members' expectations of working in a liberal arts environment and their actual experiences. For example, one faculty member reflected on a conversation about research productivity with the department chair: "You know, if you're interested in this, you should've gone to an R1 institution'...So, I kind of had to go underground. I just never mentioned research in the department" (p. 549).

Turning to colleagues, the authors divided findings into those that reflected positive collegial relationships and those that were more challenging. Thirty of the 55 participants spoke about the importance of department colleagues in shaping their impressions and experiences within a liberal arts community. For these faculty members close friendships within the department were important, as they noted relying on their colleagues in times of "illness and life events" (p. 551). Nine participants mentioned challenging collegial relationships. Although their stories varied, the faculty members mentioned department size as a contributing factor. "If you're

in a small department where not everyone gets along, I'm sure that's very challenging. I don't know what the university—if and what—the university should do about that" (p. 551). Regardless of department size, the presence of challenging colleagues led to department reassignments, office relocations, and/or refusals to work on campus.

Finally, faculty members spoke about the importance of departmental leadership, and the problems challenging experiences created in that regard, in helping them achieve success. The evidence of challenging experiences with chairs was idiosyncratic to the participant's experience, with stories ranging from department chairs' general lack of support to even a chair's "meltdown" (p. 553). That said, negative experiences with chairs made large impressions on faculty members and were often articulated as reasons for general workplace dissatisfaction. As the authors summarize: "Particularly within LACs, there are often not many steps between chairs and provosts or presidents, which can add to the harm caused by ineffective chairs when they have influence at the highest levels of LAC leadership" (p. 553).

In addition to interviewing faculty members about their experiences with chairs, the authors interviewed faculty

members who had served or were serving as chairs. Positive experiences as chairs typically included comments about administrative support, both in terms of mentorship from the top and staff support within the department. As the only offered "unanticipated finding from the study" (pp. 553–554), given its principal focus on faculty members not serving as chairs, the authors addressed challenges regarding the role of being a department chair: "The three main ways in which these roles presented challenges seemed to be an inability to effectively manage difficult departmental colleagues and mitigate the negative effects of their behaviors on the department, frustration with trying to chair a department of more senior colleagues and/or prior to receiving tenure, and a lack of administrative training and support for their work as department chair" (p. 554).

IMPLICATIONS FOR ACTION BY CAMPUS LEADERS

One faculty member remarked, "I had no concept of what that meant to be a chair in an academic institution. I know I did a horrible job" (p. 555). At CIC colleges and universities, administrators should not assume that exposure to the work of colleagues as chairs necessarily results in faculty members knowing how

to perform the job themselves. What are administrators doing to support chairs? Beyond course buy-outs and staff support, faculty members may need some sort of coaching as they assume the role of department chair. Providing mentorship programs might help them create a more positive department culture.

The authors found that effective leaders used meetings well, including providing an appreciative environment for their colleagues and addressing departmental problems. Using meetings solely to communicate information can undermine faculty success. Faculty members want to develop strong relationships with colleagues and work on building solutions together; the personal interactions that come with meetings are opportunities for achieving these objectives. Squandering such opportunities by merely communicating information—something that could often be done over email—erodes faculty confidence in leadership and may contribute to more negative feelings about the department culture.

As a reminder, CIC offers an annual series of Workshops for Department and Division Chairs to provide training for new chairs and a listserv for chairs to share resources and programmatic ideas as well as to seek support from colleagues.

ABOUT THE AUTHORS

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LITERATURE READERS MAY WISH TO CONSULT

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Will Student Bystanders Intervene? Testing an Intention-Assessment Instrument

Mayhew, M. J., M. A. Lo, L. S. Dahl, and B. S. Selznick. 2018. "Assessing Students' Intention to Intervene in a Bystander Situation." *Journal of College Student Development* 59 (6), 762–768.

SUMMARY

The purpose of this study was to introduce and test an instrument designed to assess students' intention to intervene in bystander situations related to sexual and partner violence. The authors grounded the development of their instrument in the social-ecological model of violence, developed by Dahlberg and Krug (2002), and Latané and Darley's (1970) decision model of helping. By combining environmental and contextual considerations with cognitive processes, the scenario-based instrument is intended to fill a gap in current measures of bystander intervention by college students. The instrument uses multiple scenarios and possible behavioral responses to measure students' intention to intervene along the continuum of sexual and partner violence while also considering multiple perspectives and relationships to those involved.

DISCUSSION OF THE FINDINGS

The scenarios and items were initially devised in 2006 as a component of a grant competition from the U.S. Department of Education to study campus violence (see Mayhew, Caldwell, and Goldman 2011). For the final instrument tested in this study, respondents were presented with two hypothetical sexual and partner assault scenarios, each casting respondents in differing relationships to the characters described in the prompts. The first scenario describes a male student, who has not been drinking very much, leaving a party with a female student, who is clearly intoxicated. Respondents read this scenario three separate times assuming different relationships to its actors (namely, friends with the male student, friends with the female student, and a stranger to both students). The second scenario presents a situation in which upstairs neighbors who are known to be in a turbulent relationship are heard arguing, with some noises leading the downstairs neighbor (the respondent) to believe that the situation has turned physically

violent. After being presented with these scenarios, respondents were asked to rate the likelihood of reacting with specified behaviors (for example, saying something at the time to either actor or calling an authority figure).

Results from confirmatory factor analysis (CFA) suggest the items on this instrument, combined across all scenarios, acceptably fit a one-factor model. In addition, the Cronbach's alpha is .92, indicating high covariability among the 14 items. In other words, these scenarios and items work together to measure college students' bystander intervention intentions.

Subsequent research (see Dahl 2019) using this measure assessed the scenarios in which students were most likely to intervene. Students were most likely to intervene in the party scenario in which the student was a friend of the woman under duress. Students were the least likely to intervene in the party scenario where they did not know either the man or the woman.

IMPLICATIONS FOR ACTION BY CAMPUS LEADERS

This instrument offers another vehicle for the assessment of students' likelihood to intervene as bystanders in situations involving possible sexual and partner violence beyond attitudes toward rape, willingness to intervene, and past intervening behaviors. When designing educational programs for faculty members, staff, and students, campus leaders should consider the present barriers to intervention in these situations, including the potential bystander's relationship to the victim and/or the perpetrator, diffusion of responsibility, pluralistic ignorance (when unaware, inactive bystanders look to other unaware, inactive bystanders for cues on how to react and all subsequently fail to identify the situation as one requiring intervention), a bystander's self-perception of his or her helping ability and potential for intervention in the situation, and ambiguity of the situation. These hurdles influence bystanders' attitudes toward intervening, as well as their perception of social pressure and the degree of difficulty associated with interventional behaviors.

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LITERATURE READERS MAY WISH TO CONSULT

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Mayhew, M. J., R. J. Caldwell, and E. G. Goldman. 2011. “Defining Campus Violence: A Phenomenological Analysis of Community Stakeholder Perspectives.” *Journal of College Student Development* 52: 253–269.

What Is the Impact of “High Impact” on College Students’ Early Careers?

Wolniak, G. C., and M. E. Engberg. 2019. “Do ‘High-Impact’ College Experiences Affect Early Career Outcomes?” *The Review of Higher Education* 42 (3): 825–858.

SUMMARY

This study used the most recent nationally representative data set tracking college students into the workforce and provided new empirical evidence on the influence of several “high-impact” experiences (see Association of American Colleges & Universities 2007) on the early career outcomes of recent college graduates. Specifically, the authors examined the influence of five high-impact practices (undergraduate research, diversity/global learning opportunities, service and community-based learning, internships, and culminating senior capstone courses) on four early-career outcomes: earnings, job satisfaction, sense of commitment to one’s job, and continued learning and challenge in one’s place of employment.

The participants of this study were based on a nationally representative sample of 640 students who participated in the Educational Longitudinal Study (ELS 2002). Of that original sample, 596 college students participated in the 2012 follow-up study, and in doing so provided data that led the authors to suggest that early career outcomes were influenced primarily by collegiate experiences outside of the scope of traditional high-impact practices. Specifically, the three early career outcomes were associated with students’ majors, whether that major aligned with their early career choices, and graduate degree attainment. No high-impact practice shared significant relationships with all of these outcomes.

DISCUSSION OF THE FINDINGS

High-impact college experiences do not appear to be particularly influential across post-college outcomes—“a noteworthy finding, one that will benefit institutions by providing a clearer understanding of the importance of helping students select a college major and secure jobs related to their majors, over and above the influence of the kinds of ‘high-impact’ college experiences often emphasized within institutions” (p. 852). Of the five practices examined, none shared significant relationships with all of the early career outcomes.

That said, three practices were associated with increased occupational earnings. Students who participated in internships earned 4 percent more than their peers who did not. Similarly, students with study-abroad experience earned 5 percent more than their counterparts who chose not to study abroad. Interestingly, students who participated

in an undergraduate research project reported nearly 7 percent lower earnings than students who did not have this experience—a finding that the authors attribute to these students’ increased likelihood of pursuing a graduate degree, “thus influencing their time in the workforce, possibly translating to lower earnings” (p. 844).

Only one other outcome was associated with participation in a high-impact practice: whether students continued learning and felt challenged in their place of employment was significantly related to their participation in a community-based project while in college.

Three noteworthy factors were related to early-career outcome achievement across the four areas. First, a self-reported indicator of whether students’ choice of major aligned with their current job was related, with greater alignment leading to greater achievement across these early-career outcomes. Also, students who attended graduate school were more likely to achieve these

early-career outcomes. Finally, education majors reported significantly lower earnings but significantly higher rates of job-related satisfaction, commitment, and challenge when compared to majors in STEM fields.

IMPLICATIONS FOR ACTION BY CAMPUS LEADERS

Small college administrators continue to face an environment of resource scarcity; therefore, it is important to recognize not only the desirable effects but also the potentially limited influence of specific—and sometimes costly—college experiences such as traditional high-impact practices. This study has confirmed what others (see Johnson and Stage 2018; Mayhew et al. 2016) have also suggested: Traditional “high-impact” practices may not be highly impactful after all. Although administrators might be tempted to leverage such practices as competitive advantages for

driving institutional enrollment, in truth, few of these practices are influential.

So what works? What helped students achieve these outcomes? It may be that the kinds of majors and career-oriented programmatic interventions known to “cultivate career decision-making efficacy, vocational identity, and major selection yield a more positive influence in the years immediately after college than internships, study abroad, and other

programmatic offerings” (p. 852). Administrators may need to help students strategically align their curricular and co-curricular experiences with their desired career trajectories without prematurely closing off opportunities for learning and growth in areas that may benefit later career outcomes or life goals.

Officers in career services may need to develop a four-year approach to providing a developmentally appropriate curriculum for students. (CIC’s 2015

research brief *Career Preparation and the Liberal Arts* offers institutional examples of blending liberal arts education and career preparation.) How this curriculum is introduced and executed will certainly differ among and between majors. That said, results from this study suggest that career envisioning cannot and should not wait until the student’s third or fourth year.

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LITERATURE READERS MAY WISH TO CONSULT

Association of American Colleges & Universities (AAC&U). 2007. *College Learning for the New Global Century: A Report from the National Leadership Council for Liberal Education & America’s Promise (LEAP)*. Washington, DC: AAC&U. www.aacu.org/sites/default/files/files/LEAP/GlobalCentury_final.pdf.

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Student Loans and College Graduation

Zhan, M., X. Xiang, and W. Elliott III. 2018. "How Much Is Too Much: Education Loans and College Graduation." *Educational Policy* 32 (7): 993–1017.

SUMMARY

The purpose of this study was to offer advice concerning the relationship between educational loans and graduation rates and how this relationship varies based on race and ethnicity. The authors appropriately used discrete-time survival analytic techniques to determine the borrowing patterns of 3,445 individuals across 15 survey administrations. Limited by their secondary data source (the 1997 National Longitudinal Survey of Youth), the authors were unable to pinpoint the type of loan (subsidized, unsubsidized, state, federal, or private) and its relationship to graduation rates, but they were able to identify the amount borrowed that seemed to tip the scales in favor of not completing college. In short, educational loans shared a positive relationship with graduation rates, but only up to a point: \$19,753. Beyond that figure, the relationship between educational loans and graduation rates began to weaken for everyone, including students who identified as black or, in the authors' language, "Hispanic" (p. 993).

DISCUSSION OF THE FINDINGS

Two findings from this study were of particular interest. The first involved the curvilinear relationship between borrowing and completion. From the authors' analyses, there came a point where borrowing too much could begin to compromise completion: For the overall sample, this figure came to about \$20,000. Keeping in mind that these data were collected for a specific cohort of students (those born between 1980 and 1984 and who reported attending a four-year college or university), results suggested that completion was positively associated with borrowing up to \$20,000, but negatively associated with borrowing over that figure. This trend held even after controlling for a range of student characteristics, college experiences, and financial resources.

The second point of interest involved how this tipping point varied based on race and ethnicity. For black students, the tipping point was about \$21,000 while for Hispanic students, the tipping point was about \$24,000. The authors scrutinized these findings, given their expectation that minority students

would have a lower borrowing tolerance threshold than those of white students. They suggested that a more current and robust data set might yield different results, so "we must be cautious interpreting these findings" (p. 1009).

IMPLICATIONS FOR ACTION BY CAMPUS LEADERS

When does borrowing inhibit completion? Given that high-dollar debt has recently been defined as "\$100,000" or more per student borrower (p. 1011), the finding that just about \$20,000 is the tipping point where borrowing becomes a hindrance to completion is concerning. This level is the average amount of debt for graduates of private colleges and slightly more than the level for graduates of public institutions. Although the authors encourage caution in interpreting their findings, this may serve campus administrators as a descriptive data point and a means for helping their financial aid officers counsel student borrowers.

The study also linked borrowing with completion practice, particularly for minority students. The authors conceded

that they "found little evidence that having educational loans is helping reduce racial and ethnic disparities in college completion rates" (p. 1011). This linkage highlights the necessity of thoughtfully designing completion practices to ensure that minority students in particular learn and persist. Too often, higher education stakeholders overly differentiate issues of affordability, access, and accountability. To students, these distinctions may not matter much; they just want to be able to afford college, learn something while in college, and complete a degree to get a better job and a better life. Ensuring that administrators and faculty members collaborate in designing comprehensive approaches may help both their minority students and other students persist.

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Developing Undergraduates' Innovation Capacities and Curricular Interventions

Mayhew, M. J., B. Selznick, L. Zhang, A. Barnes, and A. Staples. "Examining Curricular Approaches to Developing Undergraduates' Innovation Capacities." *The Journal of Higher Education*. November 2018.

SUMMARY

College campuses nationwide are striving to develop innovators, as the skills and abilities generally associated with innovation (such as creativity, teamwork across difference, and persuasive communication) are in increasingly high demand among both students and employers. Yet, few studies to date have sought to investigate the effects of curricular interventions specifically designed to promote such capacities (namely, beliefs about self, social skills, and cognitive abilities theoretically associated with being an innovator). Using an instrument detailed in the October 2018 issue of the *Digest of Recent Research*, "Measuring Students' Capacities for Innovation" (No. 5), this study investigated undergraduates' development of innovation capacities by employing a pre-test/post-test design across three course conditions at one institution.

The first condition was a "full dose" semester-long course titled Leadership and Innovation (n = 11). The second was a "partially dosed" set of courses that received a single-session curricular intervention led by the same facilitator, an expert on the research and teaching of undergraduate innovation (n = 22). The third was a "no dose/control" group that received no intervention (n = 16). It is important to note that students were randomly assigned into either the partially-dosed or the no-dose conditions. In addition, the sample included students from business and STEM majors as well as the social sciences, arts and humanities, and other fields of study.

DISCUSSION OF THE FINDINGS

After accounting for age (which proved to be the only relevant student background characteristic), pre-test score, and the possibility that students' course selection could bias the results, the study expectedly found that when compared with students in the no-dose group, students in the full-dose course (Leadership and Innovation) made gains in innovation capacities. Intriguingly, results suggested that even greater gains were made by students in the partially-dosed group; that is, students who only received the short-term single-session intervention.

As the authors summarize: "The results of this study support the claim that targeted, innovation-specific curricula influence the development of undergraduate students' innovation capacities" (p. 15). Reflecting on these efforts,

the authors find support for the continued importance of promoting the development of innovation capacities among *all* students, not only those pursuing business or STEM fields. They also consider the importance of both using reliable, valid metrics to understand the effectiveness of educational efforts and considering *how* the theoretical underpinnings of metrics could productively guide pedagogical strategies and curriculum building.

IMPLICATIONS FOR ACTION BY CAMPUS LEADERS

The results of this study have three implications for campus leaders who are in charge of sustaining and supporting innovation efforts on their campus. First, the findings emphasize the importance of clearly defining and measuring innovation capacities as a collegiate outcome

while also offering quantitative mechanisms for examining the effectiveness of innovation-related efforts. Having a definition and a measure is a far better starting point for innovation conversations than beginning with an open-ended request for stakeholder input. Second, the results highlight the efficacy of short-term, low-cost interventions. Often with innovation, it can seem like much is getting spent, but little is actually getting done. This study offers solutions for reversing this trend to ensure that valuable resources are generating more, not less, return. Finally, it provides evidence that locating innovation within the academic curriculum, rather than only the co-curriculum, can provide opportunities for more students to access these vital knowledge bases and leave college prepared to thrive in the global knowledge economy.

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Gamifying Gender Bias Recognition and Reporting

Cundiff, J. L., C. L. Danube, M. J. Zawadzki, and S. A. Shields. 2018. "Testing an Intervention for Recognizing and Reporting Subtle Gender Bias in Promotion and Tenure Decisions." *Journal of Higher Education* 89 (5): 611–636.

SUMMARY

Under the premise that gender bias is ubiquitous within the academy, the authors developed an experiment to examine the effectiveness of an intervention designed to enable participants to recognize and report gender bias in promotion and tenure decisions. Participants were randomly assigned to one of three conditions. In the first condition, participants experienced the intervention, the Workshop Activity for Gender Equity Simulation in the Academy (WAGES-Academic; Shields et al. 2011), a "gamelike simulation of subtle sexism in the academic workplace" (p. 618). In the second condition, participants received information on gender equity in the workplace but did not participate in the simulation. In the third condition, participants played a modified version of Chutes and Ladders. This part of the experimental design was intended to "be similar to WAGES in terms of engagement and the active-learning format but without information about subtle sexism" (p. 619). The study took place in two phases in order to assess the two outcomes: recognizing *and* reporting gender bias. Results from the study indicated that WAGES participants were statistically more likely to recognize and report gender bias.

DISCUSSION OF THE FINDINGS

Compared with participants in the control conditions (information only and Chutes and Ladders), WAGES participants were better at detecting gender bias in promotion and tenure materials. To reach these conclusions the authors conducted a two-phase study. The first phase invited WAGES participants to play a game designed to teach participants about gender bias situations within the context of the academy. The second phase asked participants to evaluate reviews of a simulated tenure and promotion case for inclusion of subtle (for example, "absences were presumably due to family obligations") or blatant (for instance, "comparing her with male faculty [who] seldom prioritize family commitments over academic commitments") gender-biased language. Across the various participant groups studied, it was clear that WAGES participants were statistically more likely to be able to detect gender bias in promotion and tenure materials.

WAGES participants also were better at reporting gender bias in promotion and tenure materials when compared to participants in the control conditions. To assess reporting, the authors asked participants to anonymously respond yes or no to the following statement: "I have concerns that this review was unfair and would like to officially report my concerns to the committee" (p. 622). Not only did the authors find that WAGES participants were more likely to report these concerns, but they also found that participants were statistically more likely to report blatant expressions of sexism, when compared with subtle or no forms of sexism.

IMPLICATIONS FOR ACTION BY CAMPUS LEADERS

Why is this relevant for CIC member institutions? First, the study is predicated on the assumption that gender bias occurs within academe and serves as a reminder that most practices—especially those considered high-stakes such as

tenure and promotion—favor men. Too often, assumptions like these are acknowledged by leadership but not meaningfully addressed. The authors do an admirable job of taking this assumption and testing it via a well-designed experimental study that examines gender bias in both recognition and reporting.

Second, people who are taught about gender bias in the academy can apply this information to detect and report gender bias in reviews of tenure and promotion materials. According to the authors' findings, the WAGES participants were able to extrapolate lessons learned about gender bias in the academy and apply them in the context of detecting and reporting reviewers' gender biases in adjudicating a simulated tenure and promotion case.

Third, the intervention used in the study is a low-cost, "non-threatening way [that] may increase detection and reporting of gender bias in higher education institutions" (p. 611). Often, interventions designed to curb attitudes and behaviors related to racism, sexism,

homophobia, and classism are quite costly, and thus rarely considered viable in resource-stretched environments. The Workshop Activity for Gender Equity Simulation in the Academy (WAGES-Academic; Shields et al. 2011)

is not only a viable means for addressing gender equity issues in the academy, but potentially an enjoyable one. The WAGES game could be used as part of faculty orientation, not only as a way to deliver information about gender bias in

the academy, but also as a vehicle to communicate the institution's values. As an added bonus, it could be an ice-breaker for new faculty members.

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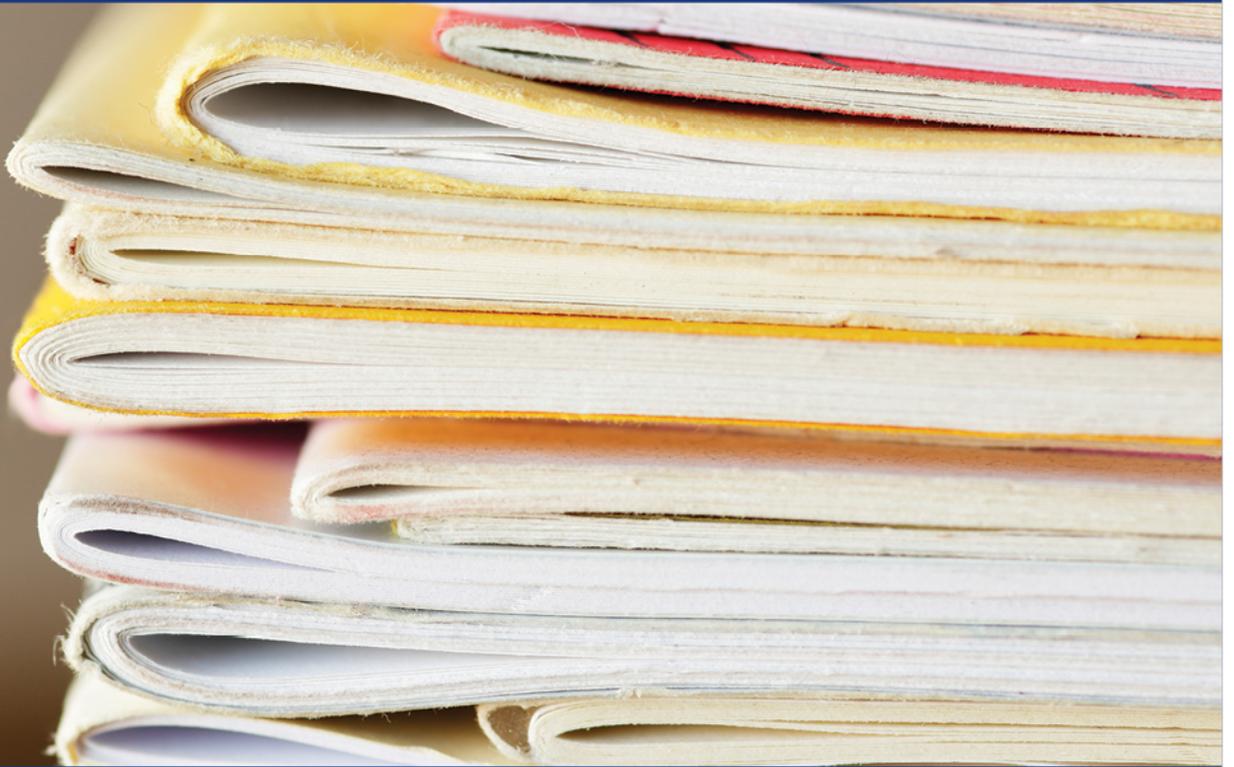
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