

ACUE STUDENT, FACULTY, AND INSTITUTIONAL IMPACT RESEARCH

Independent Review Process and Findings

April 2019

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OVERVIEW

In April of 2019 the Association of College and University Educators (ACUE) convened a panel of experts in higher education research, evaluation, policy and faculty development. Panelists provided an independent assessment of ACUE's first four years of research on student and faculty impact. Committee members examined the methodologies and interpreted the findings of 10 studies completed by third-party evaluators and ACUE researchers in collaboration with offices of institutional research. Collectively, the studies present findings from hundreds of faculty members prepared and credentialed by ACUE in effective instruction for the thousands of students they teach.

Expert panelists were:

- Dr. Drew Allen, Executive Director of the Initiative for Data Exploration and Analytics (IDEAS) for Higher Education, Princeton University.
- Dr. Michael S. McPherson, President Emeritus of Spencer Foundation and Macalester College; co-chair of the Commission on the Future of Undergraduate Education.
- Dr. Linda B. Nilson, founding director, Office of Teaching Effectiveness and Innovation, of Clemson University; author of *Teaching at its Best*.
- Dr. Mary Deane Sorcinelli, Director Emeritus, Center for Teaching & Faculty Development, University of Massachusetts Amherst; author of *Faculty Development in the Age of Evidence*.

Committee members reviewed the research briefs and the complete technical papers for the ten studies. These publicly available studies meet journal standards and include papers accepted by and presented at the American Educational Research Association (AERA), the Professional and Organizational Development (POD) annual conferences, and other forums. The reviewers were also provided with relevant background and contextual materials including ACUE's paper "Connecting the Dots: A Proposed Accountability Method for Evaluating the Efficacy of Faculty Development and its Impact on Student Outcomes," and "The Essentials of College Instruction: ACUE's Course in Effective Teaching Practices," which is a comprehensive bibliography of the scholarly research which serves as the foundation of ACUE's courses and Effective Practice Framework.

Following the panelists' separate and preliminary review of these studies and materials, the committee convened in New York City to discuss their initial findings. Panelists also met with ACUE representatives, including chief academic officer Penny MacCormack, executive director of research Meghan Snow, and research associate Elizabeth Lawner to discuss clarifying questions. Panelists then independently drafted a summary of their final conclusions, which is included here and follows the summary below of the 10 studies they examined.

Inquiries about these studies or the review process and findings can be sent to research@acue.org.

SUMMARY OF REVIEWED STUDIES

In its first four years, ACUE has examined and produced 10 research studies on the student, faculty, and institutional impact of its offerings. These studies have been conducted by third-party evaluators and ACUE researchers in collaboration with offices of institutional research. These 10 studies, collectively, examine data from over 500 ACUE-credentialed faculty and more than 2,000 comparison faculty, and student data representing over 700,000 student enrollments. Of these student enrollments, more than 17,000 were in course sections taught by faculty who had earned their credential or were in the process of earning their credential. This constitutes one of the largest bodies of research and evidence to date that fully connects the impact of faculty development on changes in teaching practices and the consequent changes in student outcomes.

Study #1: Miami Dade College and Johns Hopkins University Center for Research and Reform in Education Evaluation of Student Engagement (Part A)

Miami Dade College (MDC), located in Miami, Florida, enrolls over 92,000 students across nine campuses. In this longitudinal study involving 57 faculty teaching over 6,100 students, researchers from Johns Hopkins University examined MDC's student course evaluations. Researchers found significant improvements in student ratings of instruction from the semester before faculty started an ACUE course to the semester after they earned their ACUE credential. Additionally, student course evaluations for the ACUE-credentialed faculty were significantly higher than university averages during the semester after faculty completed their ACUE course.

Study #2: Hanover Research evaluation of KC Scholars and Kauffman Foundation Initiative (Part A)

In this study, involving 228 faculty from six public and private baccalaureate and community colleges and universities across Kansas and Missouri teaching over 20,000 students, evaluators from Hanover Research examined faculty survey responses at approximately the midpoint of their ACUE course. Hanover Research found overwhelming rates of faculty reporting the ACUE course relevant and engaging. Moreover, faculty reported finding ACUE course content relevant regardless of years of experience, discipline, employment status, or institution. The six institutions where participating faculty were teaching were: Kansas State University, University of Central Missouri, Kansas City Kansas Community College, Baker University, Park University, and Donnelly College.

Study #3: Broward College

Broward College, located in Fort Lauderdale, Florida, enrolls over 40,000 students. This longitudinal study, conducted by ACUE and involving 11 faculty and more than 450 students, found that students recognized the use of specific evidence-based practices in classes taught by ACUE-credentialed faculty. Students reported greater use of the evidence-based practices that faculty learned through their ACUE course in the spring semester compared to fall, demonstrating faculty's increased use of such techniques over the time of their enrollment in their ACUE course.

Study #4: Delta State University (Part A)

Delta State University (DSU), located in Cleveland, Mississippi, enrolls over 3,700 students. This cross-sectional study, conducted by ACUE researchers in collaboration with DSU's Office of Institutional Research and Planning and involving 17 faculty teaching over 2,300 students, found a significantly higher rate of A, B, and C grades and Credit awarded and lower rates of D and F grades, Withdrawals, and No Credit assigned in courses taught by ACUE-credentialed faculty compared to courses taught by matched faculty through a paired-cohort methodology.

Study # 5: ACUE Credentialed Faculty Member Survey

In our inaugural member survey of faculty members approximately six months after they earned their ACUE credential in 2017, respondents reported that they sustained the changes they made to their practice and use of evidence-based approaches they learned in their ACUE course. Over half of these faculty (54%) reported that they used the practices at least once per class, and all reported they continued to use them multiple times per month.

Study # 6: City College of San Francisco

City College of San Francisco (CCSF), which is part of the California Community College system, enrolls over 60,000 students. This longitudinal study, conducted by ACUE researchers with support from CCSF's Office of Research and Planning and the Multicultural Infusion Project and involving 35 faculty teaching over 4,500 students, found that students in courses of participating faculty earned better grades during the year in which faculty earned their ACUE credential than in courses taught by the same faculty during the prior year. There was no similar improvement seen in comparison sections of non-participating faculty.

Study #7: Texas Woman's University

Texas Woman's University (TWU), located in Denton, Texas, enrolls over 15,000 students across three campuses. This longitudinal study, conducted by ACUE researchers and TWU's Center for Faculty Excellence with support from TWU's office of Institutional Research and Improvement, involved 18 credentialed faculty teaching over 3,700 students, including nearly 700 Black/African American students. The study found that course completion rates for Black/African American students taught by credentialed faculty improved from the year before faculty participated to the year during which they earned their ACUE credential. This improvement in rates of course completion for Black/African American students eliminated a pre-existing completion gap as compared to all other students.

Study #8: Miami Dade College (Part B)

This longitudinal study, conducted by ACUE researchers with support from MDC's Office of Institutional Effectiveness and involving 78 faculty teaching over 11,000 students, found that course grades increased in sections taught by ACUE-credentialed faculty. The improvement in student outcomes occurred from the semester prior to the faculty earning their ACUE credential (the baseline) to the semester during which they earned their credential.

Study #9: Delta State University (Part B)

DSU's Center for Teaching and Learning used a Return on Investment calculator developed by researchers at Ithaca S+R to estimate the financial return on their investment in faculty development. Based on the improved student success rates previously identified (Study #4), DSU found an estimated single-year ROI over five times their investment in effective teaching through ACUE.

Study #10: Hanover Research evaluation of KC Scholars and Kauffman Foundation Initiative (Part B)

In this study, involving over 300 faculty from seven public and private baccalaureate and community colleges and universities across Kansas and Missouri teaching over 35,000 students, evaluators from Hanover Research examined faculty survey responses on completion of their ACUE course. Hanover found that gaps in faculty members' confidence in using evidence-based practices learned through ACUE were reduced or eliminated. The seven institutions where participating faculty were teaching were: Kansas State University, University of Central Missouri, Kansas City Kansas Community College, Baker University, Park University, University of Missouri, and Donnelly College.

COMMITTEE MEMBERS

Dr. Drew Allen, Executive Director of the Initiative for Data Exploration and Analytics (IDEAS) for Higher Education, Princeton University.

Dr. Michael S. McPherson, President Emeritus of Spencer Foundation and Macalester College; co-chair of the Commission on the Future of Undergraduate Education.

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FINDINGS

Introduction

These are challenging times for higher education, with rising costs, growing pressures for greater student access and degree completion, and the imperative to support the success of all students—especially those that have not traditionally been well served by colleges and universities. But there is good news as well. Teaching and student learning have assumed a much more prominent place in the academic landscape. Many colleges and universities have established teaching and learning centers to support the work of faculty as they seek to improve the learning experience of their students. Many other public and private organizations are sponsoring initiatives to improve and assess the student experience in the classroom.

“Good teaching matters... students learn more from faculty who invest in their development as teachers [and] they need professional development initiatives like ACUE’s *Course in Effective College Teaching*”

In light of these developments, the four of us were invited to provide an independent assessment of a body of research on a faculty professional development intervention, ACUE’s Course in Effective College Teaching. The criteria guiding our review is a six-level approach for evaluating the impact of professional development that includes: faculty engagement, learning, and implementation of evidence-informed practices; student engagement and outcomes; and institutional outcomes (MacCormack, Snow, Gyurko & Sekel, 2018). Each of us independently reviewed ten in-depth studies. We then came together to discuss and provide feedback to ACUE on three core questions:

- are the evaluation methods sound;
- how meaningful are the findings, and
- how best to interpret and communicate those findings.

We collectively come to these three questions from years of experience as academic leaders, faculty, faculty developers, and researchers in public and private universities and foundations. As such, we are aware that both student and faculty success in the classroom requires a larger context—a campus culture—that supports and sustains the ongoing improvement of teaching and learning. It is a culture that puts students in the center—it is about teaching focused on student success. We also know that good teaching matters and that students learn more from faculty who invest in their development as teachers. As well, faculty members’ choices and actions are shaped by their institution and external influences that can be either barriers that discourage or

scaffolding that supports teaching improvement and innovation (Austin, 2011; Hutchings & Sorcinelli, in press). This suggests that faculty and students need a strong set of supports to learn about new pedagogical practices, to try them out, and to experience success. They need faculty professional development initiatives like ACUE's *Course in Effective College Teaching*, buttressed by leadership, resources, recognition, and reward.

“the range, depth and rigor of the ACUE studies... reinforce the link between faculty development, teaching improvement, and student learning”

We also recognize that systematically assessing faculty development programs requires skills, time and resources that a faculty development unit might not have. Evaluation is playing an increasingly prominent role in the field, however, and there is a growing evidence base indicating that faculty development, done well, has positive impacts on learning and teaching (Wright, Horii, Felten, Sorcinelli &

Kaplan, 2018). In this brief, we describe the ACUE program evaluation design and methods, summarize the most compelling faculty and student outcomes, and offer advice for future research efforts. We conclude that the range, depth, and rigor of the ACUE studies add to the foundational research on faculty development program evaluation and reinforce the link between faculty development, teaching improvement, and student learning.

Methods

Since 2017, ACUE has partnered with 12 institutions to carry out 10 large-scale individual research studies focused on evaluating the effectiveness of the ACUE intervention. These studies were conducted in a variety of higher education settings, including public and private baccalaureate and community colleges and universities across all regions of the country. Ranging from a small private college in the Midwest to the largest institution of higher education in the country, the sites for this research provided a diverse laboratory in which to track faculty and student outcomes. These studies, which involved collaborations with campus institutional research offices, and/or centers for teaching and learning, or external evaluators, employed quantitative and qualitative methods to address questions regarding impact and implementation.

Four studies employed surveys of faculty to collect data on attitudes and confidence toward teaching, perceptions about changes in the quality of teaching, feedback about the course, and changes in practices. In some studies, faculty were asked about their impression of the impact of the course on teaching skills and its value. One study analyzed information on end-of-each-module surveys about faculty learning and implementation of evidence-based teaching practices. In one case, faculty interviews were used to supplement the survey data to provide a richer understanding about the course.

“[ACUE’s] studies were conducted in a variety of higher education settings, including public and private baccalaureate and community colleges and universities across all regions of the country... [providing] a diverse laboratory in which to track faculty and student outcomes.”

The research design for seven of the studies also included student data—either from course evaluations, student surveys, or grades in courses taught by faculty involved with the intervention. Course evaluations were used in two studies to track changes in student feedback from baseline (pre-intervention) to post-intervention. Survey data collected from students as part of three studies were analyzed to understand changes in self-efficacy and perception and recognition of evidence-based classroom practice. Student performance (e.g., grades, course completion, etc.) in courses taught by faculty who took the ACUE courses were analyzed in four studies and, in several instances, compared to performance of students taught by faculty in matched comparison groups. By tracking changes in student outcomes across matched groups and across time, researchers were able to ameliorate some degree of potential bias.

As part of one study focused on return on investment (ROI), an institution's Center for Teaching and Learning piloted a tool developed by the American Council on Education (ACE) and Ithaka S+R to estimate the return on investment for the instructional intervention that ACUE provided.

In addition to these studies, ACUE collected and analyzed nationwide, cross-site survey responses from faculty during and after completing the course, as well as student feedback data from questionnaires administered across institutions. These comprehensive data collection efforts contributed supplemental data to help provide additional context to the findings from the 10 individual research studies.

Faculty Outcomes

Five studies we reviewed measured the level to which faculty course-takers were engaged and learning and implementing new teaching practices. Data sources included faculty surveys, faculty interviews, student questionnaires and, in one study, course evaluations. A first level measured faculty engagement in the course, and data documented that ACUE-trained faculty strongly endorsed the course. For example, in the nationwide member survey, 97% of the respondents agreed that the modules were relevant to their work. In a localized study, depending on the module, 94% to 100% of 353 faculty, who worked at seven different and varied institutions, reported the modules relevant to their teaching responsibilities. After the course, 100% of these faculty agreed with the following statements: “I am enthusiastic about teaching”; “My instructional choices have an impact on how students perform in my courses.” On another metric of course quality, 91% indicated that they would recommend the course to their colleagues. In another study involving 57 faculty at a large, multi-campus community college, 96% of the first ACUE cohort and 100% of the second cohort would recommend the course to their colleagues.

With respect to measures of a second level, faculty learning, the results are just as compelling as those for faculty engagement. In the seven-institution study, for instance, the average percentage of faculty who felt confident using the ACUE course’s evidence-based practices rose from 48 retrospectively before the course to 90 afterwards, and the gap between the least experienced (0-2 years) and the more experienced instructors shrank or disappeared entirely. Respondents generally reported learning about or learning more about most of the 208 techniques covered in the course. More specifically, over half of them indicated that they learned about or learned more about 163 of these techniques (78% of all techniques).

Measures of faculty engagement and learning “are compelling.”

Whether or not ACUE credentialed faculty implement what they have learned was the focus of a third level of evaluation. Most respondents in the seven-campus study implemented or planned to implement/adjust their use of 90% percent of the 208 evidence-based techniques the course covered. At a regional university in the South, faculty implemented 27 new practices immediately after completing the course and planned to implement 45 more. In the nationwide study, the figures were 27 and 54 practices, respectively, which student survey results confirmed. Furthermore, 100% of the credentialed faculty nationwide reported that they sustained these changes for at least one semester, and 54% said that they used one or more practices at least once per class session.

Student Outcomes

Success in engaging faculty and in helping them change their practice matters because it is the path by which students can learn more and become more successful, thereby helping meet institutional goals for student retention and graduation. In such a young program, it is too soon to measure the influence of ACUE's course on longer-term outcomes like graduation.

At this stage in the program's development, measurable student outcomes focus on performance in individual courses, and the main success metrics are course completion, grades, and student course evaluations. Six of the studies we reviewed reported evidence on the impact of the ACUE course on average levels of one or more of these metrics. Two studies focused on course grades in a pre-post framework, examining grades received by students in a faculty member's courses before and after the faculty member took the ACUE course. In both studies, which were at community colleges, students received higher grades in the semester(s) during which the faculty member was completing her course than they had prior to the faculty member starting the ACUE course. A third study, at a public university, compared the grading patterns of faculty members who had taken the ACUE course with those of a matched group of similar faculty, and found that students taught by faculty who were taking the course received higher grades than those for the matched faculty. One study, at a public university, compared course completion rates for students in the semester when a faculty member was completing the ACUE course to the same faculty member's course completion rates a year earlier. Completion rates were higher in the more recent year. Finally, a study at a community college found that course evaluations improved for faculty after they took the ACUE course. All the results reported here were statistically significant.

None of these three measures—grades, completion rates, and course evaluations—is a completely satisfactory measure of student performance but is often what educational program evaluators have to work with. Based on the analyses performed in these studies, we cannot completely rule out the possibility that faculty grading standards became easier after they took the course, resulting in higher average course grades and a higher course completion rate. We have no evidence that this is the case, and we judge that it is much more likely that grades and completion rates went up because the faculty became better at teaching.

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The student questionnaire was carefully constructed to direct students' attention to specific instructional behaviors, rather than more general qualities of the instructor. While this adds to our confidence that the reported improvements point toward better learning, it is always difficult to be sure that students are responding to the specific questions asked, rather than their general reactions to the instructor. Thus, we need to acknowledge the possibility that the improved student course evaluations for faculty who were taking the ACUE course reflected a more pleasant or congenial classroom atmosphere rather than indicating improved learning.

Of course, no study is airtight, and we recognize that the very limited time that has elapsed from the beginning of ACUE limits the kinds of evidence of impact available to be examined. Going forward it will be possible to capture stronger behavioral outcomes of having a teacher or teachers who have taken ACUE's course, including improved graduation rates, and persistently higher grades for students who have been educated by faculty who have taken ACUE's course.

Conclusion

In sum, we find in these studies an impressive body of work evaluating this important effort at teaching improvement. It is important to realize that this entire effort is less than five years old, and the fact that so much well-planned and well-executed evaluation work has been done, with more in the works. In our report, we have noted limitations in the findings to date, which are for the most part linked to the fact that evidence about longer-term outcomes is not yet available.

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We look forward to the continuing development of the ACUE enterprise and we strongly encourage continued and, where possible, enhanced research and evaluation of the work. Below we offer our thoughts on ways to further strengthen future studies.

Next Steps

While the rigor of the research designs are largely a function of the availability of data at the individual sites, opportunities for more rigorous evaluation designs and more fine-grain analysis of data should be pursued, including: 1) Collection and analysis of more granular data (i.e., at the faculty and student-level) to allow for more robust quantitative analyses, including clustered regression analyses and the use of approaches like hierarchical linear modeling to further tease out potential bias; 2) tracking of longer-term outcomes, such as student persistence and graduation, as well as results of instruction for longer periods of time after faculty participation in the intervention; and 3) consideration of opportunities to integrate experimental (e.g., random assignment of faculty participation) and quasi-experimental (e.g., more complex propensity score matching or use of instrumental variables) designs, particularly in institutions or settings that have existing budgetary or space constraints that would allow for these research approaches.

Drew Allen, Michael S. McPherson, Linda B. Nilson, Mary Deane Sorcinelli

New York City, April 2019

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COMMITTEE MEMBER BIOGRAPHIES

Drew Allen

Drew Allen is the Executive Director of the Initiative for Data Exploration and Analytics (IDEAS) for Higher Education, a new educational “startup” office within the Woodrow Wilson School of Public and International Affairs at Princeton University. He leads collaborations between scholars and Princeton University administrators to advance research and data analytics projects that simultaneously benefit administrative decision-making and operations as well as the larger higher education research and policy community. His research focuses primarily on the evaluation of higher education policies and organizational structures, with a particular focus on workforce outcomes. Prior to the launch of IDEAS, he was the Associate Dean for Data Analysis and Operations at Princeton and founding Director of the Office of Research, Evaluation, and Program Support at the City University of New York (CUNY). Allen received a Master’s degree in Quantitative Methods in the Social Sciences from Columbia University and a Ph.D. in Higher and Postsecondary Education from New York University.

Michael McPherson

Michael S. McPherson served as President of the Spencer Foundation for fourteen years before retiring in 2017. Earlier he was President of Macalester College in St. Paul, Minnesota for seven years. He is a nationally known economist whose expertise focuses on the interplay between education and economics. McPherson is co-author or editor of several books, including *Lesson Plan: An Agenda for Change in American Higher Education*, *Crossing the Finish Line: Completing College at America’s Public Universities*, *The Student Aid Game*, and *Economic Analysis, Moral Philosophy, and Public Policy*. McPherson was founding co-editor of the journal *Economics and Philosophy*. He co-chaired the Commission on the Future of Undergraduate Education, which was convened in 2015 by the American Academy of Arts and Sciences and authored *The Future of Undergraduate Education*, *The Future of America*. He is currently a Senior Research Fellow at the Mellon Foundation and a non-resident Fellow at the Urban Institute. McPherson holds a BA in mathematics, a MA in economics, and a Ph.D. in economics, all from the University of Chicago.

Linda Nilson

Linda B. Nilson, Ph.D. is director emerita of the Office of Teaching Effectiveness and Innovation (OTEI) at Clemson University and author of *Teaching at Its Best: A Research-Based Resource for College Instructors*, now in its fourth edition. Her latest books are *Online Teaching at Its Best: Merging Instructional Design with Teaching and Learning Research* with Ludwika A. Goodson and *Creating Engaging Discussions: Strategies for “Avoiding Crickets” in Any Size Classroom and Online* with Jennifer H. Herman. Dr. Nilson’s career as a full-time faculty development director spanned over 25 years. Before coming to Clemson University, she directed teaching centers at Vanderbilt University and the University of California, Riverside and was a sociology professor at UCLA. She has published many articles and book chapters and has given about 500 keynotes, webinars, and live workshops at conferences, colleges, and universities both nationally and internationally on dozens of topics related to college teaching and scholarly productivity. Dr. Nilson was a National Science Foundation Fellow at the University of Wisconsin, Madison, where she received her Ph.D. and M.S. degrees in sociology. She completed her undergraduate work in three years at the University of California, Berkeley, where she was elected to Phi Beta Kappa.

Mary Deane Sorcinelli

Dr. Mary Deane Sorcinelli is Professor Emeritus and Senior Fellow, University of Massachusetts Amherst and Co-PI, Undergraduate STEM Education Initiative, Association of American Universities (AAU). Previously, she was associate provost and founding director, Center for Teaching & Faculty Development, UMass Amherst. Mary Deane's research is in the areas of faculty professional development, mentoring, improvement of teaching and learning, and the role of teaching centers in fostering 21st century faculty learning. She has published over 100 articles, book chapters and books, most recently co-authoring *A Center for Teaching and Learning Matrix* (2018). Mary Deane was President of the Professional and Organizational Development (POD) Network in Higher Education and has received national and international recognition, including the Spirit of POD Award for outstanding lifetime leadership in faculty development, Distinguished Scholar in Residence at Mount Holyoke College, and Senior Scholar, American Association for Higher Education (AAHE). She has worked in some 15 countries and was awarded a Fulbright Specialist to Education City, Qatar, a Distinguished Visiting Professor, American University in Cairo, Egypt, and a Whiting Foundation Fellow, National University of Ireland Galway. Mary Deane holds a doctorate in educational policy from UMass Amherst and a master's degree in English Literature from Mount Holyoke College.

This review was prepared by the authors in their personal capacity. The opinions expressed in this document are the authors' own, and may not reflect the official policy or position of any organization with which they are affiliated.

About ACUE

The Association of College and University Educators (ACUE) believes that all college students deserve an extraordinary education and that faculty members play a critical role in their success. In partnership with institutions of higher education nationwide, ACUE supports and credentials faculty members in the use of evidence-based teaching practices that drive student engagement, retention, and learning. Faculty members who complete ACUE's Course in Effective Teaching Practices earn a Certificate in Effective College Instruction endorsed by the American Council on Education. ACUE's Community of Professional Practice connects college educators from across the country through member forums, podcasts, and updates on the latest developments in the scholarship of teaching and learning.

To learn more, visit acue.org.

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