Connecting the Dots:

A Proposed Accountability Method for Evaluating the Efficacy of Faculty Development and Its Impact on Student Outcomes

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Abstract

This paper presents an accountability method developed by the Association of College and University Educators (ACUE) to evaluate the impact of faculty development on teaching practices and student outcomes. This six-level evaluation approach is grounded in the industry training model of Kirkpatrick and Kirkpatrick (2007) and informed by Guskey's (2000) and Hines's (2011) application to educational settings. The six levels are (a) faculty engagement, (b) faculty learning, (c) faculty implementation, (d) student engagement, (e) course-level student outcomes, and (f) institutional outcomes. Methodological challenges that are present in evaluations of this type are also discussed, along with recommendations to mitigate their effects. ACUE developed this approach in order to conduct research-based evaluations of its partnerships with colleges and universities where faculty are credentialed through ACUE's courses in evidence-based instruction.

Introduction

Across the United States, there is a concern that current efforts to improve college graduation rates are insufficient to meet the economy's demand for a highly educated workforce and society's need for an informed populace. For example, a recent analysis by the Educational Testing Service (ETS) found that the 2020 degree attainment goal established by the federal government is unlikely to be met until 2041 for the general population and may still not be met through 2060 for African American, Hispanic, and other minority students (Nettles, 2017). Alongside concerns about the quantity of degree production are similar concerns about the quality of education, specifically the depth to which students are developing the higher order analytical and communication skills necessary for informed citizenship and purposeful lives (Arum & Roksa, 2010; Association of American Colleges & Universities, n.d.; Bok, 2017).

In response, there has been a growing focus on the importance of high-quality college instruction, characterized by the use of evidence-based teaching practices. The Commission on the Future of Undergraduate Education (2017), in its recent report *The Future of Undergraduate Education: The Future of America*, argued that "institutions need to devote far more attention to and support for the quality of teaching and the teaching workforce" as a key driver toward achieving the goal that "students in every program and institution receive the education they need to succeed in the twenty-first century" (p. 5). Similarly, the Association of American Universities' (AAU; 2017) Undergraduate STEM Education Initiative aims to "influence the culture of STEM departments at AAU institutions so that faculty members are encouraged and supported to use teaching practices proven by research to be effective in engaging students in STEM education and in helping students learn" (p. 4). In *The Struggle to Reform Our Colleges*, Derek Bok (2017), president emeritus of Harvard University, called for improved college teaching to ensure that faculty are equipped to use "methods of instruction that engage students actively . . . and produce deeper and more lasting learning" (p. 36). Bok (2017) suggested that it will take an outside effort to provide "help both to demonstrate the need for change . . . and assistance to ease the task of learning to teach in new ways" (p. 51).

Formal preparation of faculty members in effective evidence-based instructional practices may be viewed as too indirect a pathway to promote student achievement, particularly when compared to interventions such as intrusive advising and the use of predictive analytics and automated student alerts. However, on closer analysis, few—if any—other higher education professionals have as much direct contact with students and potential impact on their academic outcomes. In a typical semester, and particularly among instructional (i.e., adjunct, non-tenure-track, contractual) faculty, an educator will be in regular contact with 100 students or more (National Center for Education Statistics, 2017). In addition, students carrying a full load of courses spend upwards of 200 hours with their professors, compared to an average of 1 hour per semester with their advisor (EAB, 2016). When measured purely by teaching loads and contact time, the most efficient opportunity for institutions to take steps to retain, educate, and graduate more students is through their faculty.

Decades of research from the scholarship of teaching and learning have identified specific evidence based teaching practices that improve student outcomes (Armbruster, Patel, Johnson, & Weiss, 2009; Burrowes, 2003; Freeman, Haak, & Wenderoth,

2011; Hattie, 2009; Kember & Gow, 1994; Marton, Hounsell, & Entwistle, 1997; Mazur, 2009; Prosser & Trigwell, 2006; Zimmerman, 2002). Despite this sizable research connecting specific instructional practices to improved student learning, there is less research that fully connects the dots between faculty development designed to improve instructional practices and the consequent impact on student-level outcomes (Devlin, 2008; Hénard & Roseveare, 2012; Hines, 2007), notwithstanding some emerging research (Condon, Iverson, Manduca, Rutz, & Willett, 2016; Seidman, 2012). One challenge to gathering evidence, as Hines (2011) noted in *How to Evaluate the Impact of Faculty Development Programs*, is that not all faculty development offerings are designed to impact student- or institutional-level outcomes: "Only high-impact efforts—intensive programs—will ripple to outer levels [impacts on student learning and institutional impacts]" (p. 12).

Background

In 2014, the Association of College and University Educators (ACUE) was founded to improve student outcomes through quality college instruction. In an effort to catalogue the evidence-based teaching practices that improve student achievement, ACUE reviewed over 300 citations from the scholarship of teaching and learning and engaged with teaching and learning experts across the country to develop the ACUE Effective Practice Framework©. The Framework was independently validated by the American Council on Education (ACE; 2017) and serves as a consensus statement of the teaching skills and knowledge that every college educator should possess in order to teach effectively, regardless of discipline (Association of College and University Educators, 2016).

ACUE develops and offers courses in effective teaching practices that are fully aligned to the Framework's five major units of study: designing an effective course and class, establishing a productive learning environment, using active learning techniques, promoting higher order thinking, and assessing to inform instruction and promote learning. ACUE's course on the foundations of effective college teaching recommends over 200 evidence-based teaching approaches. The course and its learning design are offered online and certified by Quality Matters (see Association of College and University Educators, 2017). To satisfy course requirements, faculty engage with content, are required to implement evidence-based practices, and write rubric-aligned reflections on their implementation, citing changes in student behaviors. Faculty who satisfy course requirements earn a Certificate in Effective College Instruction endorsed by the American Council on Education.

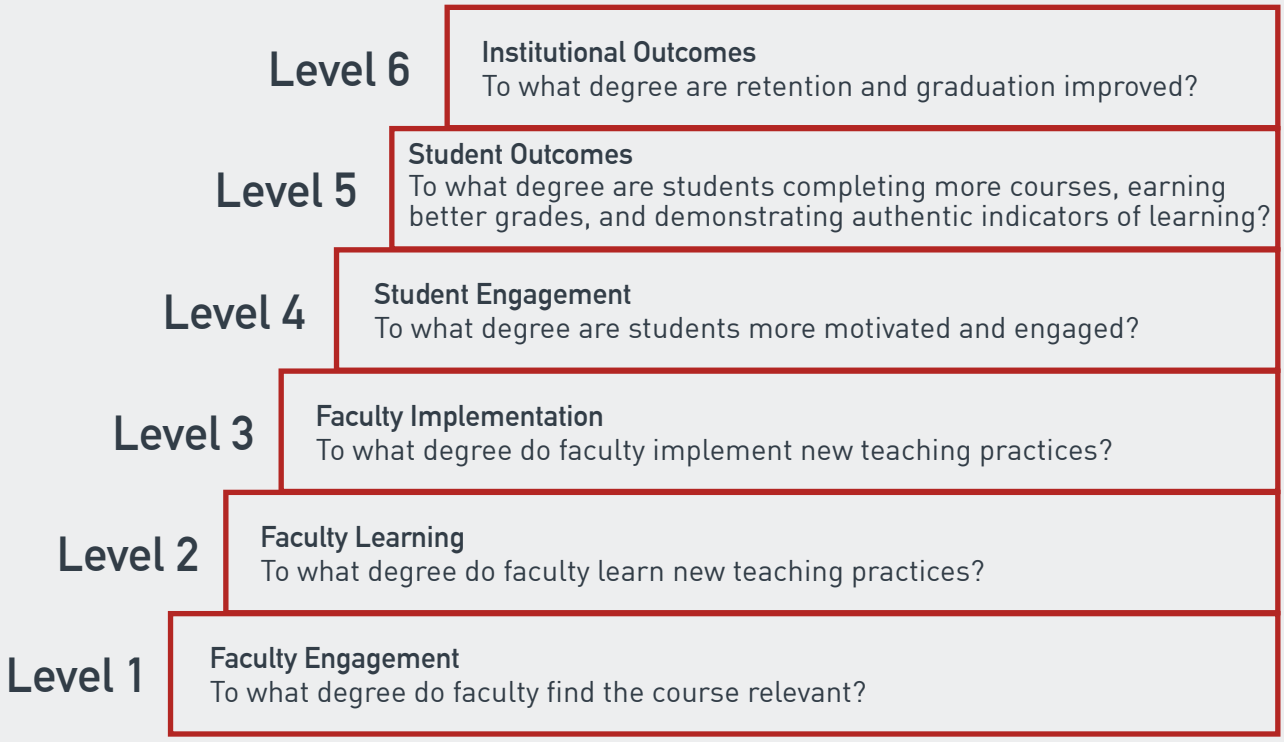
The comprehensiveness of ACUE's courses, requirement for faculty to apply and reflect on the implementation of new teaching practices in their classroom or online course, and the fact that this effort can be scaled to reach large numbers of faculty across a campus are features designed to meet the "high-impact" and "intensive" design (Hines, 2011) necessary to change teaching behaviors with a consequent impact on student and institutional outcomes. But, given the current climate of heightened accountability for both educational and fiscal performance, concrete measures can help to further justify investments in faculty and their pedagogical development as a student success intervention.

Proposed Accountability Approach

The following accountability proposal is designed to connect the dots from faculty development interventions, such as ACUE's courses, to strengthened instruction, continuing to improved student and institutional outcomes. The approach is informed by Donald Kirkpatrick and James Kirkpatrick (2007), leaders in evaluating industry training; Thomas Guskey (2000), who developed a framework for evaluating professional development; and Susan Hines (2011), a faculty development director with numerous publications on how to evaluate the impact of faculty development programs in higher education.

These and other researchers have identified a set of sequential stages of change that are typically present for the acquisition of new skills. Overall, Kirkpatrick and Kirkpatrick (2007) and Guskey (2000) found that attitudinal changes precede behavioral changes, and that both are measurable. This suggests that effective faculty development interventions must prompt attitudinal changes, followed by behavioral changes in faculty and their teaching, if we are to reasonably expect both attitudinal and behavioral changes in students and their academic performance, as described in the following six levels of change.

Evaluation Measures



Note. This six-level evaluation approach is grounded in the industry training model of Kirkpatrick and Kirkpatrick (2007) and informed by Guskey's (2000) and Hines's (2011) application to educational settings.

Input Measures

Level 1: Faculty Engagement

Kirkpatrick and Kirkpatrick (2007), Guskey (2000), and Hines (2011) determined that the degree to which a training or faculty development intervention met its overarching goals began with participants' initial reactions to the program. Those who were satisfied or found the training engaging and relevant to their work were more likely to learn what was intended. Research has connected perceived relevance and engagement to increased learning in student and adult learners (Kember, Ho, & Hong, 2008; Wlodkowski & Ginsberg, 2017). Although perhaps obvious, this suggests that measures of participants' initial satisfaction are leading indicators of the degree to which participants will continue along the intervention's planned process of change. Aligned to this approach, ACUE's proposed first level evaluates the level of engagement of faculty members in ACUE's program. Within ACUE's courses, participating faculty members are surveyed, in real time, about the usefulness and relevance of course content, whether they would recommend the course to colleagues, and other indicators of engagement.

Level 2: Faculty Learning

Continuing with the research of Kirkpatrick and Kirkpatrick (2007), Guskey (2000), and Hines (2011), if a program's participants are engaged, we can then reasonably expect to see the acquisition of new knowledge and skills. At this second level of change, ACUE collects quantitative, self-reported data on faculty learning to determine which teaching practices and techniques recommended within the course (a) are new to participants, (b) they learned more about, and (c) they feel more confident using as part of their own practice. Only when an instructor has a solid understanding of a particular teaching approach and confidence in his or her ability to implement the teaching technique can we reasonably expect to see the third level of change: faculty implementation.

Level 3: Faculty Implementation

At this third proposed level, ACUE catalogues instructors' implementation of the practices and techniques that they learned about in their course. To quantify which practices have been implemented, faculty taking one of ACUE's courses report the teaching practices used and submit a written reflection detailing the technique that was implemented, successes and challenges encountered (including student reactions), and next steps for continuous improvement. This approach, based in the research on self-reflection, is integral to the faculty course experience because "doing and thinking are complementary" (Schön, 1983, p. 280) and critical reflection "develop[s] a rationale for practice" (Brookfield, 2017, p. 81). Further, Pallas, Neumann, and Campbell (2017) have noted, "Although more needs to be understood about college instructors' learning, research suggests that one process, in particular, is key: that is, reflection, defined as instructors probing their own thoughts about teaching—before, during, or after engaging in it" (p. 21).

Faculty reflections submitted as part of ACUE's courses are evaluated by ACUE to maintain national reliability in scoring and the awarding of credentials. This level of evaluation measures participants' real-time adoption of evidence-based teaching practices. It aligns to the third level of Kirkpatrick and Kirkpatrick's (2007) model and the fourth level of Guskey's (2000) model, which refer to the degree and quality of participants' application of the new knowledge and skills they have gained.

Outcome Measures

The first three levels in this proposed evaluation method help to determine which evidence-based teaching practices faculty are learning about, if they have the confidence to implement the techniques, and which techniques they have implemented into their teaching in a thoughtful and self-reflective way. Changes in faculty learning, confidence, and teaching practice—all on the input side of the equation—are necessary prerequisites if we are to expect to see changes in student achievement—the outcomes side of the equation. Returning to Kirkpatrick and Kirkpatrick (2007), Guskey (2000), and Hines (2011), students are similar to faculty in the predictable, and sequential, change process that is necessary to achieve higher levels of learning, starting with their own engagement—the fourth level of ACUE's proposed framework.

Level 4: Student Engagement

ACUE's fourth evaluation level measures student engagement. If students are in classes taught by faculty who are implementing evidence-based teaching practices, we can reasonably expect to see higher levels of student engagement and motivation as compared to students in classes where the pedagogy may not include such practices. At ACUE partner institutions, data regarding student engagement are collected through an institution's locally authored course evaluations; an institution-adopted, nationally available instrument; or a student survey developed and administered by ACUE.

Level 5: Course-Level Student Outcomes

It is reasonable to expect that when students' educational experience is replete with evidence-based teaching practices they will post stronger academic outcomes than their peers in classes where such approaches may not be in use. Although there are many influences, some outside of an instructor's control, on a student's life and academic career, this next level of analysis seeks to determine the degree to which stronger instruction—a variable within an instructor's and institution's control—promotes students' academic success. Level 5 measures changes in students' coursework, academic achievement (GPA), and levels of course completion. For each measure, it is important to have appropriate comparison data, such as data for participating faculty from semesters prior to and following their participation in an ACUE course (longitudinal data) and other sections of the same course taught by faculty members who have not yet earned an ACUE credential (matched cohort data). Level 5, though, is limited to course-level outcomes, given that students take a number of courses in a semester, not all of which may be taught by ACUE-credentialed faculty members.

Level 6: Institutional Outcomes

At the highest level, ACUE's proposed evaluation approach measures changes at the institutional level, including student retention and graduation rates over time. Changes at this level assume the strategic and widespread use of evidence-based teaching practices across a program of study, department, or institution. ACUE hypothesizes that for dramatic increases in student retention, graduation, and learning, the campus must establish a culture of quality instruction and the majority of students' instruction must be characterized by the regular use of evidence-based teaching practices.

Discussion

Like any research in the social sciences, efforts to assess the full efficacy of faculty development and training programs, from changes in participant "inputs" to the intended benefits, as measured by student outcomes, are prone to complications of design. As Hines (2011) said, "There will always be noise. The key is to reduce it" (p. 13). She defined the "noise" around assessing impact as the "interfering variables that make it difficult to get accurate measurement results" (Hines, 2011, p. 13). Hines also acknowledged that while "noise" makes program evaluation at these levels challenging, its effects can be mitigated by comparing the impact on participants and nonparticipants using pre- and post-intervention measures and gathering multiple measures. Because there is more noise at the higher levels of evaluation, high-level measures should only be used when "far-reaching effects are expected" (Hines, 2011, p. 13). As described above, the comprehensive nature of ACUE's courses calls for measurement of impact on student and institutional outcomes. And, while program evaluation design is decided with colleges and universities in close partnership, hallmarks of ACUE's recommended methodology include the use of Hines's (2011) mitigating factors.

Conclusion

More and more higher education leaders and organizations are calling for improved teaching to play a more significant role in not only increasing the number of degrees earned, but also ensuring the quality of those degrees as higher education works to address the well-documented need for an increase in graduation and retention rates (Arum & Roksa, 2010; Association of American Colleges & Universities, n.d.; Bok, 2017; Commission on the Future of Undergraduate Education, 2017; Nettles, 2017). ACUE's courses seek to address this need by preparing faculty, at scale, to implement the body of instructional practices shown to improve student outcomes.

When developing an evaluation method appropriate for measuring the impacts of ACUE's courses, it was clear that because "far-reaching" impact is expected, a comprehensive program evaluation is necessary (Hines, 2011). Evaluation models from industry training and educational settings emerged as informative for understanding the sequence of change beginning with faculty engagement, learning and change in practice, and ultimately leading to student and institutional outcomes. The proposed model acknowledges that methodological challenges, although meaningful, should not stop our efforts to assess efficacy. Rather, these considerations should inform the strength and generalizability of any findings. As such, ACUE's evaluation model has been carefully designed to obtain evidence of faculty, student, and institutional outcomes at partner colleges and universities. As a learning organization, we invite feedback and collaboration as we continue to refine the work in this area.

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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.

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