ACUE Association of College and University Educators

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GRADES UP:

Quality Teaching at the Heart of Student Success in San Francisco

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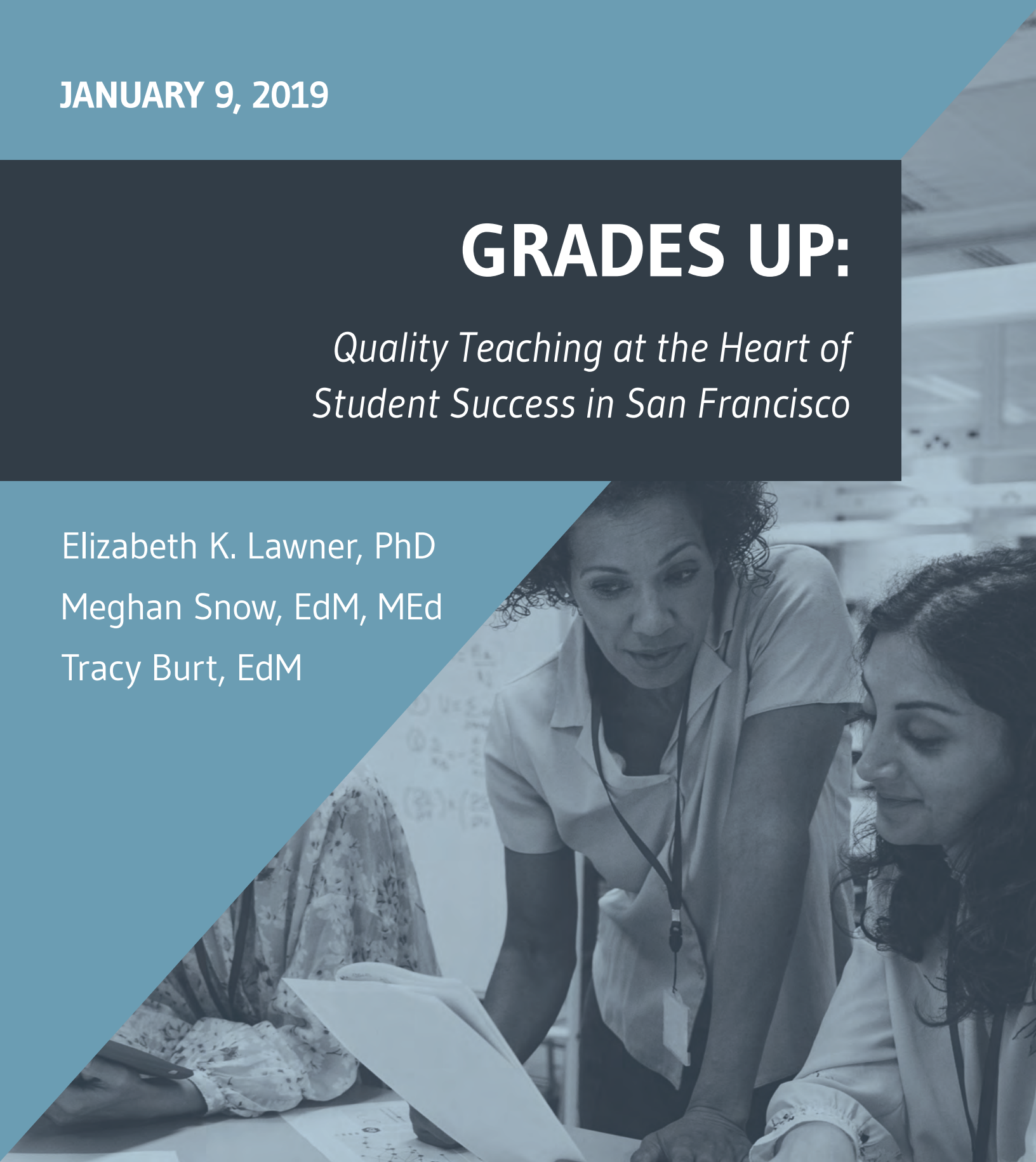

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ABOUT ACUE

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 its Effective Practice Framework©. The Framework was independently validated by the American Council on Education (ACE) 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. ACUE developed and offers online courses in effective teaching practices that are fully aligned to the Framework's five major units of study: Designing an Effective Course, Establishing a Productive Learning Environment, Using Active Learning Strategies, Promoting Higher Order Thinking, and Assessing to Inform Instruction and Promote Learning. ACUE's courses on effective college teaching recommend over 200 evidence-based teaching approaches and are certified by Quality Matters. To satisfy course requirements, faculty engage with content, are required to implement evidence-based practices, and write rubric-aligned reflections on their implementation, including citing changes in student behaviors. Faculty who satisfy course requirements for at least 25 modules earn a Certificate in Effective College Instruction endorsed by ACE.

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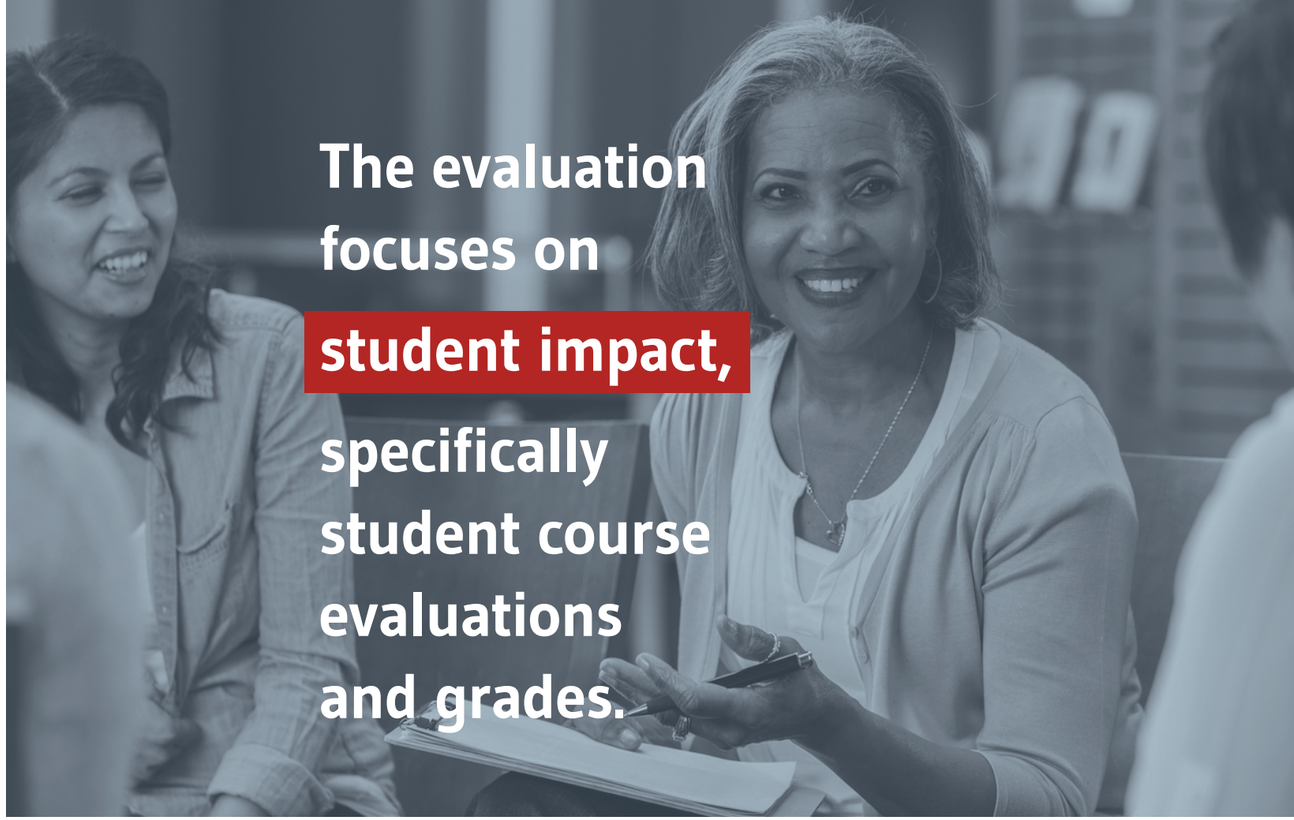
EXECUTIVE SUMMARY

A recent evaluation of the student impact of ACUE's foundational Course in Effective Teaching Practices found positive results for rates of students earning As, Bs, and Cs in graded courses and credit in nongraded courses and for students' self-reported growth mindset. One purpose of the current evaluation was to examine whether the positive outcomes found previously are generalizable, particularly since ACUE partners with a diverse group of colleges and universities. In other words, is the positive student impact unique to a particular type of school or is it likely to occur across all institutions? This evaluation was done in partnership with City College of San Francisco (CCSF), a medium-sized public community college where 35 faculty earned their ACUE credential during the 2017-2018 academic year as part of a project funded by CCSF's Office of Student Equity.

The evaluation focuses on student impact, specifically course completion, grades, self-efficacy, growth mindset, and perceptions of classroom practices. We evaluated change in course completion rates and grades for course sections taught by ACUE-credentialed faculty and for all other sections of the same or most similar course. We assessed the impact of ACUE's Course in Effective Teaching Practices on self-efficacy, growth mindset, and student perceptions of courses and instructors using a student questionnaire that was administered at the end of the fall 2017 and spring 2018 semesters to students of faculty participating in the ACUE course.

Our evaluation showed that sections taught by ACUE-credentialed faculty in the 2017-2018 academic year had significantly higher average course grades (a) than comparison sections during the same year by other, non-ACUE faculty and (b) compared to all sections taught by the same faculty in the previous academic year, before they enrolled in ACUE's course. Specifically, averages grades in sections taught by ACUE-credentialed faculty



improved from 2.93 on a 4.0 scale in 2016-2017 to 3.08 in 2017-2018, while average grades in comparison sections remained lower: 2.78 in 2016-2017 and 2.74 in 2017-2018. This is specifically due to an increase in As and decrease in Fs. In addition, students taught by ACUE-credentialed faculty in the spring 2018 semester reported significantly greater confidence in academic self-monitoring behaviors, such as keeping up to date with schoolwork and preparing effectively for an exam or completing a long assignment, than students taught by the same faculty in the fall 2017 semester.

This evaluation was completed while faculty were engaged in and finishing the requirements necessary to earn their ACUE credential. Further research will be done to evaluate the continued impact on student success measures in the years after faculty earn their credential as well as the student-level impact of ACUE's courses at other types of colleges and universities.

GRADES UP

Quality Teaching at the Heart of Student Success in San Francisco

The Association of College and University Educators (ACUE) developed an accountability framework in order to conduct evaluations of its partnerships with colleges and universities where faculty are credentialed in effective college instruction through ACUE's courses in effective teaching practices (see MacCormack, Snow, Gyurko, & Candio Sekel, 2018). This accountability framework has six levels of evaluation, from faculty engagement through institutional outcomes. A recent evaluation study found positive effects on student outcomes (Levels 4 and 5), specifically rates of student success and growth mindset (Lawner & Snow, 2018). This evaluation was done in partnership with Delta State University, which is a small, public, 4-year university in rural Mississippi. New faculty at Delta State were specifically targeted to participate in the ACUE course and subsequent evaluation. However, ACUE works with a colleges and universities nationwide that vary in their institutional characteristics, as well as their student populations and the type of faculty they target for participation in ACUE's courses. In order to increase the generalizability of evaluation findings and establish the effectiveness of the ACUE credential, evaluations must be undertaken at multiple institutions that differ in their characteristics and recruitment strategies.

The evaluation outlined in this report was conducted at City College of San Francisco (CCSF), a medium-sized, public community college in an urban setting. CCSF's Office of Student Equity provided funding for the first cohort of CCSF faculty to earn their ACUE credential during the 2017-2018 academic year. Due to the goals of the Office of Student Equity, faculty recruitment focused on courses with achievement gaps for students at risk for dropping out, such as underrepresented minorities, foster youth, and nontraditional or returning students. In total, 35 faculty at CCSF earned their ACUE credential during the 2017-2018 academic year. Similar to the evaluation at Delta State University (Lawner & Snow, 2018), this evaluation focused on student outcomes and aimed to replicate the prior findings, and thus establish generalizability with a different type of institution that varies in its student population and type of faculty targeted.

METHOD

Participants and Procedures

This evaluation focused on the 32 faculty at CCSF who (a) earned their credential in effective college instruction from ACUE during the 2017-2018 academic year and (b) were primary faculty for at least one course at CCSF during that year. Three ACUE-credentialed faculty at CCSF were not the primary teaching faculty for any course sections during the 2017-2018 year, and thus were excluded from all data and analyses. To most rigorously assess the impact of the ACUE credential on student outcomes, the analysis both examines change over time in course sections primarily taught by ACUE-credentialed faculty and compares the sections primarily taught by ACUE-credentialed faculty to the most similar course sections primarily taught by noncredentialed faculty.

The CCSF Office of Research and Planning provided section-level data, with individual identifiers removed, for all course sections that were primarily taught by the 32 ACUE-credentialed faculty during the 2016-2017 and 2017-2018 academic years. Then, for each of those course sections, the office provided data for all other sections of the same courses that were primarily taught by noncredentialed faculty. In cases where there was only one section of a course or where all sections were taught by ACUE-credentialed faculty, the most similar course was identified, and data were provided for all sections of that course that were taught by noncredentialed faculty. Since this process was not a one-to-one match, the analysis included data from course sections primarily taught by 32 ACUE-credentialed faculty and 271 noncredentialed faculty. ACUE-credentialed and comparison faculty were not significantly different in their employment status (full-time v. part-time), χ^2 (1, N = 303) < 0.01, p = .969. Faculty also did not significantly differ in their length of employment at CCSF, F(1, 301) = 2.96, p = .086.

Analyses of grades and course completion were conducted on data from 252 course sections primarily taught by ACUE-credentialed faculty and 1,139 course sections primarily taught by noncredentialed faculty. A one-way MANOVA comparing the proportion of students at each credit level in the sections primarily taught by ACUE-credentialed faculty with the sections primarily taught by noncredentialed faculty showed no significant differences, F(2, 1,383) = 2.43, p = .088.

Student questionnaire respondents' class year by semester

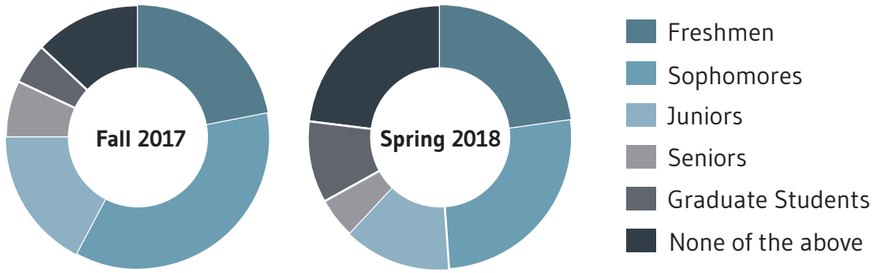


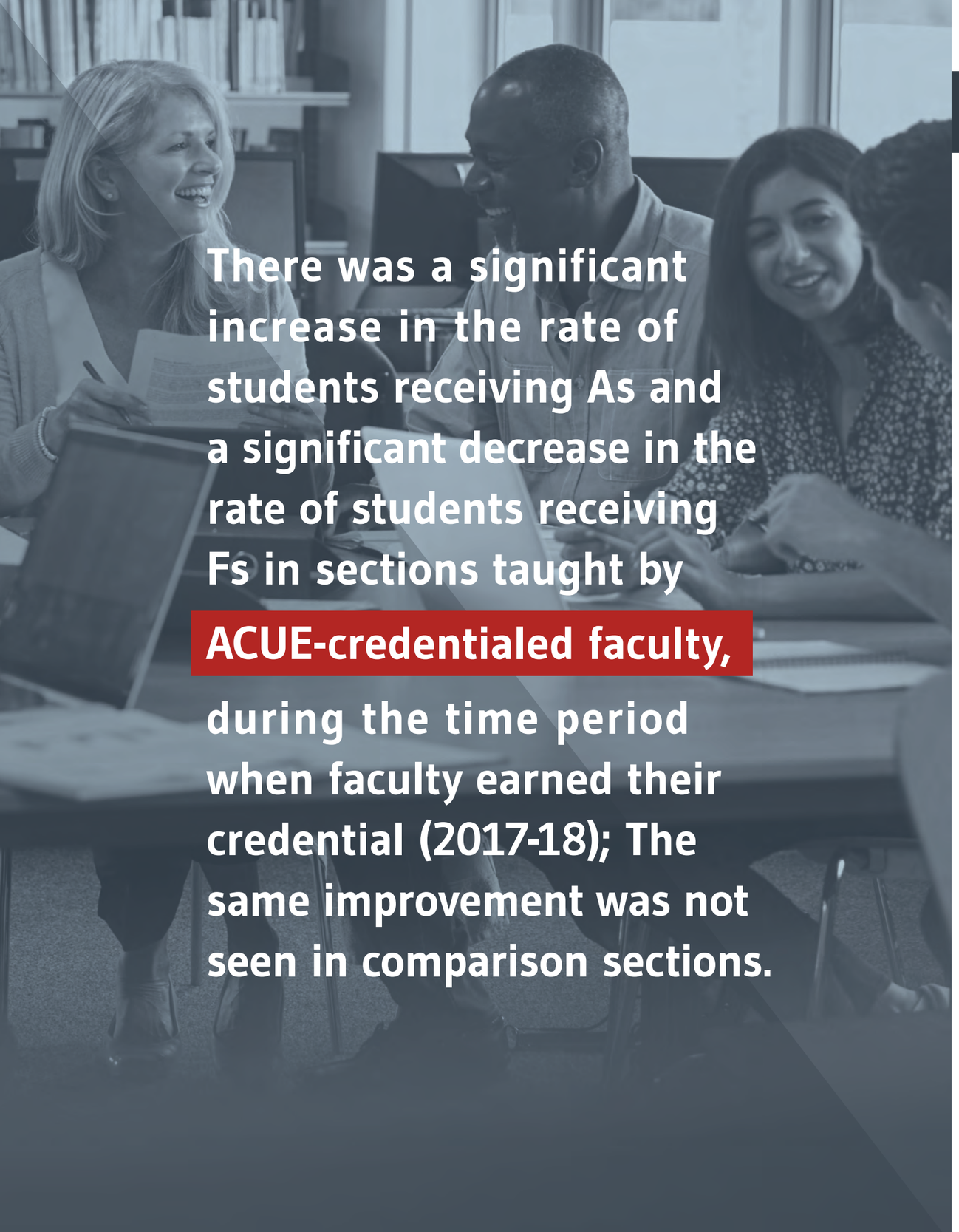
Figure 1

In addition, ACUE-credentialed faculty distributed the ACUE student questionnaire at the end of the fall 2017 and spring 2018 semesters to students in their courses. We received 586 responses from students of the 12 ACUE-credentialed faculty who had responses for both the fall and spring semesters: 313 responses in the fall semester and 273 in the spring semester. There was a significant difference in respondents' self-reported enrollment status between the fall and spring semesters, χ^2 (1, N = 727) = 5.82, p = .016, with fewer full-time students among the spring respondents (61%) compared to the fall (70%). There was also a significant difference in respondents' self-reported class year between the fall and spring semesters, χ^2 (5, N = 726) = 26.78, p < .001. As shown in Figure 1, there were fewer sophomores, juniors, and seniors, and more graduate students and students who did not report their class year or reported that none of the categories applied to them in the spring semester compared to the fall semester.

Measures

Course data. Course data included both course completion and student grades for all students who did not drop the course before the end of the drop deadline. Course completion encompasses all students who did not withdraw from a course, regardless of their final grade in the course. Course grades were examined based on pass rates, average course grades, and rates of each letter grade. Passing grades, based on CCSF's definition, include A, B, C, and P grades. Average course grades were calculated by converting letter grades to a 4.0 scale on which an A is 4.0, B is 3.0, and so on, and then averaging the grades of all students in a section. Since only A through F letter grades can be calculated on this scale, the average for a section excludes students who received all other grades, specifically I, W, FW, P, and NP. Rates of each letter grade were calculated using only students who received A-F grades as the denominator.

Student questionnaire. The classroom perceptions scale (α = .963) comprises the first part of the student questionnaire. The 17 items on this scale are directly tied to the content of ACUE's Effective Practice Framework and assess students' perceptions of the extent to which their instructors are implementing these evidence-based teaching practices. Students respond to each item on a 5-point Likert scale ranging *from strongly agree to strongly disagree*. The second part of the student questionnaire includes a single item on growth mindset taken from a longer, widely used scale (Dweck, 2000) that generally shows very high reliability, with each item highly correlated with the overall scale score. The second part also includes an academic self-efficacy scale (adapted from The College System of Tennessee, n.d.) that is composed of two subscales: academic self-monitoring (e.g., keeping up to date with schoolwork) and academic communications (e.g., asking a question in class). The self-monitoring subscale includes 4 items (α = .785), and the communications subscale includes 3 items (α = .767). Students respond to these items on a 5-point Likert scale ranging from (1) *not at all confident* to (5) *extremely confident*. The third part of the student questionnaire includes demographic questions.



RESULTS

Data Analysis Plan

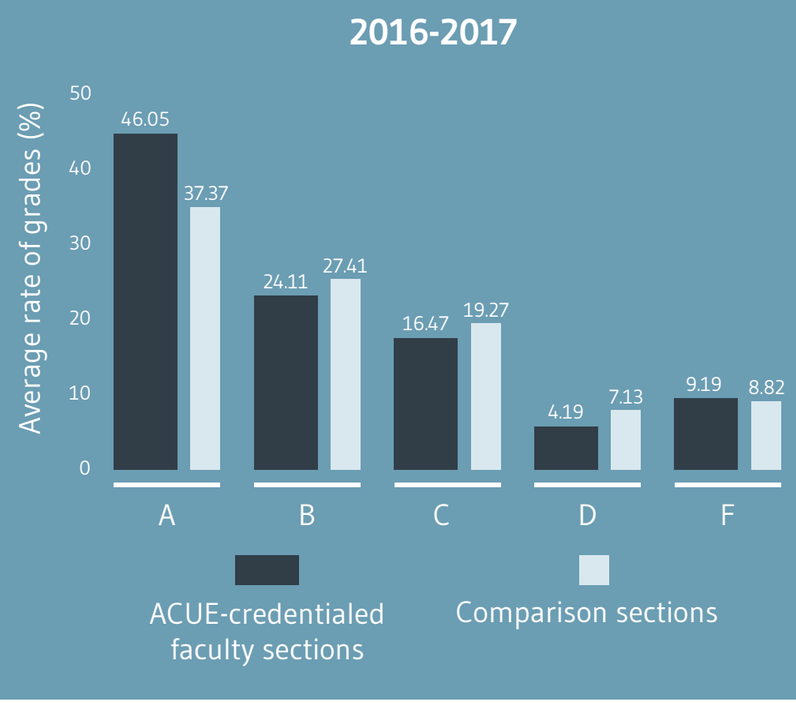
All analyses of course data involved 2 (faculty) x 2 (semester) x 2 (year) factorial ANOVAs or MANOVAs (for rates of each letter grade). The primary effect of interest is the interaction between faculty and year because that indicates whether the sections taught by ACUE faculty changed over time in a way that is different from the change over time for the comparison sections. This is typical of pretest/posttest control group designs. Since students of the matched faculty did not receive the student questionnaire, a one-way ANOVA was used to compare student responses at the end of the fall semester, when ACUE-credentialed faculty were about halfway through the course, to student responses at the end of the spring semester, about 1 to 2 weeks after ACUE-credentialed faculty were supposed to have completed the ACUE course requirements.

Course Data

Course completion. There was a significant main effect of faculty, $F(1, 1,378) = 19.90$, $p < .001$, with sections taught by ACUE-credentialed faculty having higher retention rates ($M = 89.64\%$, $SD = 8.37\%$) than comparison sections ($M = 86.60\%$, $SD = 9.64\%$). There was also a significant main effect of semester, $F(1, 1,378) = 4.79$, $p = .029$, with higher completion rates in the spring ($M = 87.52\%$, $SD = 9.72\%$) than in the fall ($M = 86.78\%$, $SD = 9.28\%$). The main effect of year was not significant, $F(1, 1,378) = 0.32$, $p = .569$. None of the two-way interactions were significant: faculty and year, $F(1, 1,378) = 0.40$, $p = .529$; faculty and semester, $F(1, 1,378) = 3.04$, $p = .081$; and semester and year, $F(1, 1,378) < 0.01$, $p = .987$. The three-way interaction was also not significant, $F(1, 1,378) = 1.54$, $p = .216$.

Pass rates. There was a significant main effect of faculty, $F(1, 1,378) = 25.68$, $p < .001$, with sections taught by ACUE-credentialed faculty having higher pass rates ($M = 74.80\%$, $SD = 13.60\%$) than comparison sections ($M = 68.76\%$, $SD = 16.86\%$). There was also a significant main effect of semester, $F(1, 1,378) = 5.65$, $p = .018$, with higher pass rates in the spring ($M = 70.59\%$, $SD = 16.95\%$) than in the fall ($M = 69.11\%$, $SD = 15.96\%$). The main effect of year was not significant, $F(1, 1,378) = 0.22$, $p = .642$. None of the two-way interactions were significant: faculty and year, $F(1, 1,378) = 1.79$, $p = .182$; faculty and semester, $F(1, 1,378) = 3.25$, $p = .072$; and semester and year, $F(1, 1,378) = 0.46$, $p = .498$. The three-way interaction was also not significant, $F(1, 1,378) = 0.20$, $p = .651$.

Average distribution of grades by year and faculty type



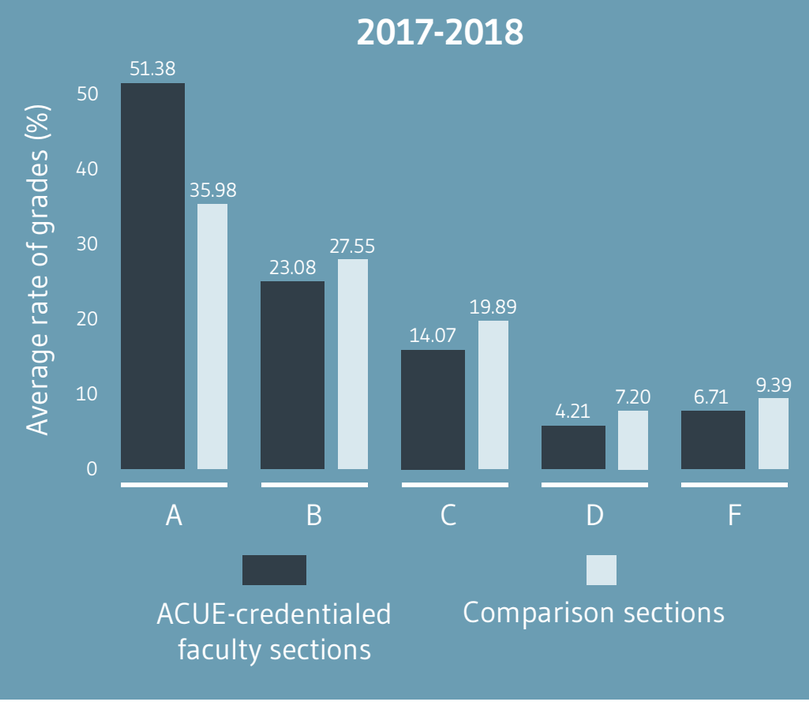


Figure 2

Rates of letter grades. The multivariate tests found a significant effect of faculty, $F(4, 1{,}394) = 22.90$, $p < .001$. Univariate tests were significant for As, $F(1, 1{,}397) = 79.77$, $p < .001$, Bs, $F(1, 1{,}397) = 20.20$, $p < .001$, Cs, $F(1, 1{,}397) = 25.30$, $p < .001$, and Ds, $F(1, 1{,}397) = 36.17$, $p < .001$, but not for Fs $F(1, 1{,}397) = 2.23$, $p = .136$. The multivariate main effect of faculty was moderated by a significant interaction with year, $F(4, 1{,}394) = 2.43$, $p = .046$. Univariate tests showed that this interaction was significant for As $F(1, 1{,}397) = 7.15$, $p = .008$, and Fs, $F(1, 1{,}397) = 4.37$, $p = .037$, but not for Bs, $F(1, 1{,}397) = 0.44$, $p = .508$, Cs, $F(1, 1{,}397) = 3.12$, $p = .078$, or Ds, $F(1, 1{,}397) < 0.01$, $p = .950$. Following up on the significant interactions by examining each year separately shows that sections taught by ACUE-credentialed faculty had significantly higher rates of As than comparison sections in both 2016-2017, $F(1, 631) = 16.25$, $p < .001$, and 2017-2018, $F(1, 766) = 82.22$, $p < .001$. In addition, sections taught by ACUE-credentialed faculty had significantly lower rates of Fs in 2017-2018, $F(1, 766) = 7.27$, $p = .007$, though there was not a significant effect of faculty on Fs in 2016-2017, $F(1, 631) = 0.17$, $p = .684$. Moreover, examining sections separately by faculty finds a significant increase in As, $F(1, 292) = 6.57$, $p = .011$, and decrease in Fs, $F(1, 292) = 5.56$, $p = .019$, from 2016-2017 to 2017-2018 among sections taught by ACUE-credentialed faculty. The effect of year was not significant among comparison sections for As, $F(1, 1{,}105) = 1.24$, $p = .265$, or Fs, $F(1, 1{,}105) = 0.64$, $p = .423$. See Figure 2 for rates of all grades by year and faculty.

The multivariate tests were not significant for year, $F(4, 1{,}394) = 1.00$, $p = .409$, or semester, $F(4, 1{,}394) = 1.47$, $p = .208$, nor for the interactions between faculty and semester, $F(4, 1{,}394) = 0.83$, $p = .509$, year and semester, $F(4, 1{,}394) = 0.33$, $p = .859$, or the three-way interaction between year, semester, and faculty, $F(4, 1{,}394) = 0.32$, $p = .864$.

Additional analyses showed that average class grades among sections taught by ACUE-credentialed faculty improved significantly during the time period when faculty earned their credential.

Average course grades. There was a significant main effect of faculty, F(1, 1,378) = 36.05, p < .001, with sections taught by ACUE-credentialed faculty having higher course grades (M = 3.02, SD = 0.50) than comparison sections (M = 2.76, SD = 0.58). This main effect was moderated by a significant interaction between faculty and year, F(1, 1,378) = 5.42, p = .020. Examining each year separately shows a significant effect of faculty in both the 2016-2017, F(1, 634) = 5.68, p = .017, and 2017-2018 academic years, F(1, 747) = 42.40, p < .001, with sections taught by ACUE-credentialed faculty having higher course grades than comparison sections in both years. However, the significant interaction indicates that the extent of that difference between sections taught by ACUE-credentialed faculty and comparison sections was larger in 2017-2018. Moreover, examining sections separately by faculty shows a significant effect of year among sections taught by ACUE-credentialed faculty, F(1, 248) = 5.56, p = .019, with higher grades in 2017-2018 (M = 3.08, SD = 0.48) than in 2016-2017 (M = 2.93, SD = 0.51), but no significant effect of year among comparison sections over the same 2-year span, F(1, 1,130) = 1.25, p = .265 (see Figure 3).

Course grades by year and faculty type

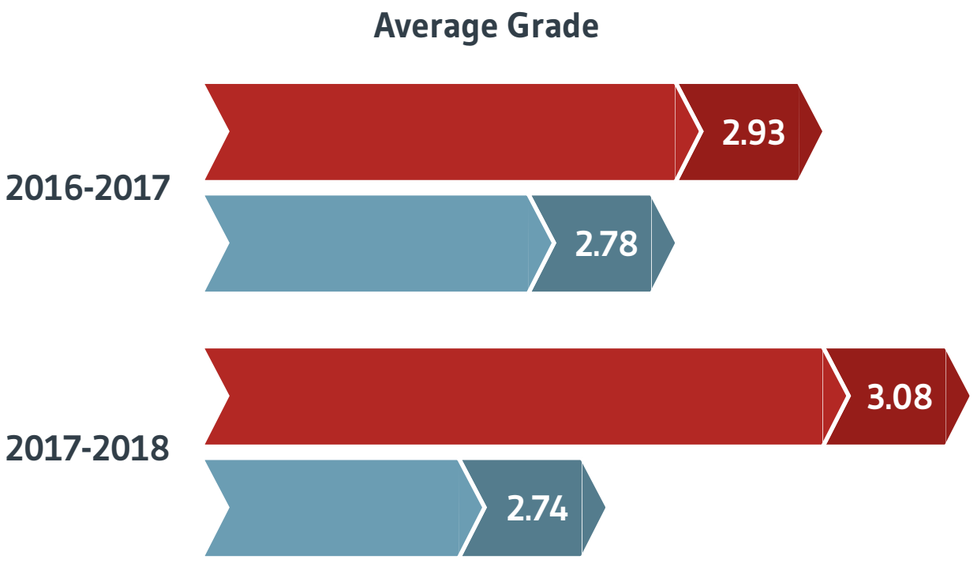


Figure 3

The main effects of year, F(1, 1,378) = 1.86, p = .173, and semester, F(1, 1,378) = 3.20, p = .074, were not significant. The interactions between faculty and semester, F(1, 1,378) = 1.43, p = .233, and between semester and year, F(1, 1,378) = 0.33, p = .565, were not significant. The three-way interaction was also not significant, F(1, 1,378) = 0.35, p = .557.

Student Questionnaire

There was a significant effect of term on students' academic self-monitoring self-efficacy, $F(1, 529) = 4.46$, $p = .035$, with students reporting higher confidence in the spring ($M = 3.91$, $SD = 0.77$) than in the fall ($M = 3.77$, $SD = 0.77$; see Figure 4).

There was no difference between semesters in students' perceptions of classroom practice, $F(1, 539) = 0.19$, $p = .661$; academic communication self-efficacy, $F(1, 529) < 0.01$, $p = .973$; or growth mindset, $F(1, 508) = 0.29$, $p = .588$.

During the spring 2018 semester, students of ACUE-credentialed faculty reported having significantly higher self monitoring self-efficacy compared to students of the same faculty in the fall 2017 semester.

Self-reported academic self-monitoring self-efficacy of students taught by ACUE-credentialed faculty by semester

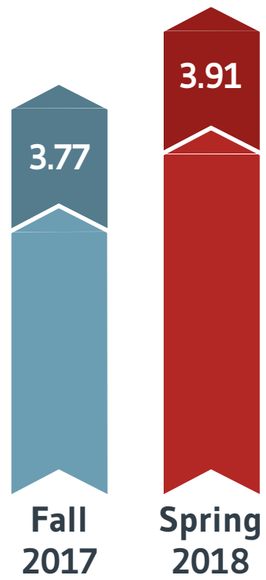


Figure 4

DISCUSSION

While CCSF targeted faculty who teach specific courses based on their equity focus for this partnership, participation was still voluntary. It could be argued this is what accounts, at least in part, for why sections taught by the faculty who chose to participate in ACUE performed better on several metrics of student academic outcomes, even in the year prior to earning their credential. What is more telling is that course grades significantly improved among sections taught by these faculty as they earned their credential, whereas there was no change in course grades among comparison sections. The change in rates of As and Fs means that 226 more students received As and 95 fewer students received Fs than they would have otherwise, given the number of students who were taught by ACUE-credentialed faculty at CCSF in 2017-2018 and received letter grades.

The results supplement the findings from Delta State University (Lawner & Snow, 2018) and advance claims of generalizability because of the differences in institution type and faculty recruitment. In addition, this evaluation provides a more rigorous test of the student impact of the ACUE credential because it includes longitudinal data, which allows us to examine change over time, and the comparison group is all other sections of the same or most similar course.

One limitation of this evaluation is the fact that the CCSF Office of Research and Planning classifies sections as "ACUE" or "comparison" based only on the primary faculty. Thus, some of the ACUE sections could have secondary faculty who are not credentialed, and some comparison sections could have secondary faculty who are credentialed. However, the possibility of contamination of the treatment and comparison groups actually provides a more conservative test of the impact of the ACUE credential. In addition, the analyses in the current study do not account for the nested nature of the data, which could affect statistical significance. However, since instructors teach multiple courses and many courses have multiple sections taught by different faculty, it is unclear whether sections should be nested within instructors or vice versa. Similar to the evaluation at Delta State University, another limitation is that this evaluation focuses solely on the year in which faculty were credentialed. To address this, we plan to follow up with the same faculty in the future, analyzing data from the 2018-2019 academic year. In addition to continuing the evaluation to include the year after credentialing, it is also important to continue efforts to test generalizability by evaluating partnerships with other types of schools, such as private schools, large schools, and institutions in other parts of the country.

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