# Better in Texas!

## Impact of ACUE-Credentialed Faculty on Student Course Completion

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# EXECUTIVE SUMMARY

Though it is important to increase the success of all students, there is a particular interest in improving graduation rates for groups that are most underrepresented in higher education, such as minority students. Two recent evaluation studies found positive effects on student outcomes, however, these evaluations used course-level grade data, and thus were not able to examine whether effects were stronger for certain groups of students. One purpose of the current evaluation is to examine whether the effect of being taught by an ACUE-credentialed faculty member is greater for student subgroups, such as Black/African American students.

The evaluation focuses on student impact, specifically course completion and grades. We evaluated these outcomes for all students taught by ACUE-credentialed faculty and a group of matched faculty during the 2016-2017 academic year, before faculty began an ACUE course, and the 2017-2018 academic year, the year that faculty earned their credential.

Our evaluation showed that Black/African American students were significantly more likely to complete courses taught by credentialed faculty in the 2017-2018 academic year than during the prior year. Specifically, 94 percent of Black/African American students taught by ACUE faculty completed their courses in 2016-2017, which increased to 98 percent in 2017-2018. In contrast, course completion for all other students taught by credentialed faculty was 96 percent in 2016-2017 and 97 percent in 2017-2018. In addition, the improvement in likelihood of course completion among Black/African American students taught by credentialed faculty closed the marginally significant gap in course completion between Black/African American students and all other students of ACUE faculty at TWU that occurred in 2016-2017.

> **"… the improvement in likelihood of course completion among Black/African American students taught by credentialed faculty closed the marginally significant gap in course completion between Black/African American students and all other students of ACUE faculty at TWU that occurred in 2016-2017."**

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 outcomes, including course completion and grades, after faculty earned their credential, as well as to further examine the impact on students who are underrepresented or marginalized in higher education.

# 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 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 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.

# BETTER IN TEXAS!
## Impact of ACUE-Credentialed Faculty on Student Course Completion

The ultimate aim of the Association of College and University Educators (ACUE) is to improve student outcomes through quality college instruction (MacCormack, Snow, Gyurko, & Candio Sekel, 2018). While it is important to increase the success of all students, there is a particular interest in improving graduation rates for groups that are most underrepresented in higher education: Black/African American, Hispanic/Latino, and American Indian/Alaska Native students (Nettles, 2016). Therefore, it is imperative to examine the effect of being taught by an ACUE-credentialed faculty member for these subgroups specifically.

> **"…there is a particular interest in improving graduation rates for groups that are most underrepresented in higher education…"**

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 et al., 2018). This accountability framework has six levels of evaluation, from faculty engagement through institutional outcomes. Two recent evaluation studies found positive effects on course-level student outcomes (Level 5), specifically rates of student success (Lawner & Snow, 2018) and average grades (Lawner & Snow, 2019). However, both of these evaluations used course-level grade data, rather than student-level data, and therefore were not able to examine whether effects were stronger for certain groups of students.

The evaluation outlined in this report was conducted at Texas Woman's University (TWU), a mid-sized public co-educational university located in the Dallas-Fort Worth area, with two branch campuses in Dallas and Houston. Faculty from a variety of disciplines at all three campuses comprised TWU's first ACUE cohort, participating in ACUE's course in Effective Teaching Practices during the 2017-2018 academic year. Similar to the evaluations conducted previously at Delta State University (Lawner & Snow, 2018) and Miami Dade College (Lawner & Snow, 2019), this evaluation focused on student course outcomes, aiming to replicate the prior findings. One important difference from the prior studies is that student-level course data and demographics were obtained, allowing for examination of differences in effects for certain student subgroups, including underrepresented minority students.

> **"One important difference from the prior studies is that student-level course data and demographics were obtained, allowing for examination of differences in effects for certain student subgroups, including underrepresented minority students."**

*Six-Level Accountability Method to Evaluate the Impact of Faculty Development on Teaching Practices and Student Outcomes*

**The current study focuses on evaluating the impact on level 5.**



Level 6 INSTITUTIONAL OUTCOMES — INSTITUTIONAL OUTCOMES
Level 5 COURSE-LEVEL OUTCOMES — STUDENT OUTCOMES
Level 4 STUDENT ENGAGEMENT
Level 3 FACULTY IMPLEMENTATION — FACULTY OUTCOMES
Level 2 FACULTY LEARNING
Level 1 FACULTY ENGAGEMENT

# METHODS

## Participants and Procedures

This evaluation focuses on the eighteen faculty at TWU who a) earned their credential in effective teaching practices from ACUE during the 2017-2018 academic year, and b) consented to participate in the evaluation. Six faculty at TWU who earned their credential in effective teaching practices from ACUE during the 2017-2018 academic did not consent to participate in the evaluation. To most rigorously assess the impact of the ACUE credential on student outcomes, the analysis examines changes in student outcomes from 2016-2017, the year before faculty at TWU started the ACUE course, to 2017-2018, the year in which they earned their credential, for ACUE-credentialed faculty and comparison faculty.

"The TWU office for Institutional Research and Improvement selected a "match" for each of the ACUE-credentialed faculty for each semester during the 2016-2018 academic years that the ACUE-credentialed faculty member was teaching."

The TWU office for Institutional Research and Improvement selected a "match" for each of the ACUE-credentialed faculty for each semester during the 2016-2018 academic years that the ACUE-credentialed faculty member was teaching. Matches were selected based on 1) courses taught, 2) type of faculty (e.g., full-time, adjunct), and 3) years of experience, in that order. Due to the emphasis in matching on courses taught, credentialed faculty were not always matched with the same person in every semester. Thus, the evaluation includes 47 unique comparison instructors. Institutional Research and Improvement provided demographic data for the consenting ACUE-credentialed instructors and comparison instructors. There was not a significant difference between ACUE-credentialed and comparison instructors in their rank (simplified to staff, graduate student, non-tenure track, tenure track, and tenured), $\chi^2$ (4, $N$ = 65) = 6.83, $p$ = .145, or gender, $\chi^2$ (1, $N$ = 65) = 0.10, $p$ = .919. There was, however, a significant difference between ACUE-credentialed and comparison instructors in the total years of teaching experience, $F$ (1, 63) = 6.65, $p$ = .012, with comparison instructors having significantly more years of experience ($M$ = 10.86, $SD$ = 8.09) than the ACUE-credentialed faculty, ($M$ = 5.72, $SD$ = 3.82).

Institutional Research and Improvement provided course and demographic data at the student enrollment level for all students who were enrolled in the courses taught by the credentialed instructors and comparison instructors during the 2016-2017 and 2017-2018 academic years, for a total of 7,156 student enrollments from 5,150 unique students[1] in 485 course sections. There was a significant difference between students enrolled in courses taught by ACUE-credentialed faculty and those enrolled in courses taught by match faculty in their race/ethnicity, $\chi^2$ (6, $N$ = 7,156) = 15.19, $p$ = .019, with credentialed faculty teaching a larger proportion of Asian students, $\chi^2$ (1, $N$ = 7,156) = 11.02, $p$ = .001, $d$ = .08 (see Figure 1). There was also a significant difference in class year between students enrolled in courses taught by ACUE-credentialed faculty and those enrolled in courses taught by match faculty, $\chi^2$ (5, $N$ = 7,156) = 65.11, $p$ < .001, with courses taught by comparison instructors enrolling more graduate students, $\chi^2$ (1, $N$ = 7,156) = 56.91, $p$ < .001, $d$ = .18, and fewer freshmen, $\chi^2$ (1, $N$ = 7,156) = 5.89, $p$ = .015, $d$ = .06, sophomores, $\chi^2$ (1, $N$ = 7,156) = 10.89, $p$ = .001, $d$ = .08, and juniors, $\chi^2$ (1, $N$ = 7,156) = 11.69, $p$ = .001, $d$ = .08 (see Figure 2). Finally, there was a significant difference in enrolled students' age, $F$ (1, 7,154) = 44.93, $p$ < .001, $d$ = .16, with courses taught by comparison faculty having older students enrolled ($M$ = 26.22, $SD$ = 8.93) compared to courses taught by credentialed faculty ($M$ = 24.88, $SD$ = 7.95). There was not a significant difference in enrolled students' first-generation college status, $\chi^2$ (2, $N$ = 7,156) = 5.65, $p$ = .059, or international student status, $\chi^2$ (1, $N$ = 7,156) = 0.01, $p$ = .917.

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1   Each student was represented up to 8 times in the dataset due to being enrolled in multiple courses taught by credentialed or match faculty.

## Figure 1

Enrolled students' race/ethnicity by faculty type. N = 3,741 for students enrolled in sections taught by credentialed faculty; N = 3,415 for students enrolled in sections taught by comparison faculty.

**Legend:** Hispanic/Latino · Asian · White · Two or more races · American Indian · Black · Other

### CREDENTIALED FACULTY

- 77 (2%)
- 989 (26%)
- 412 (11%)
- 7 (0%)
- 1438 (39%)
- 126 (3%)
- 692 (19%)

### COMPARISON FACULTY

- 79 (2%)
- 962 (28%)
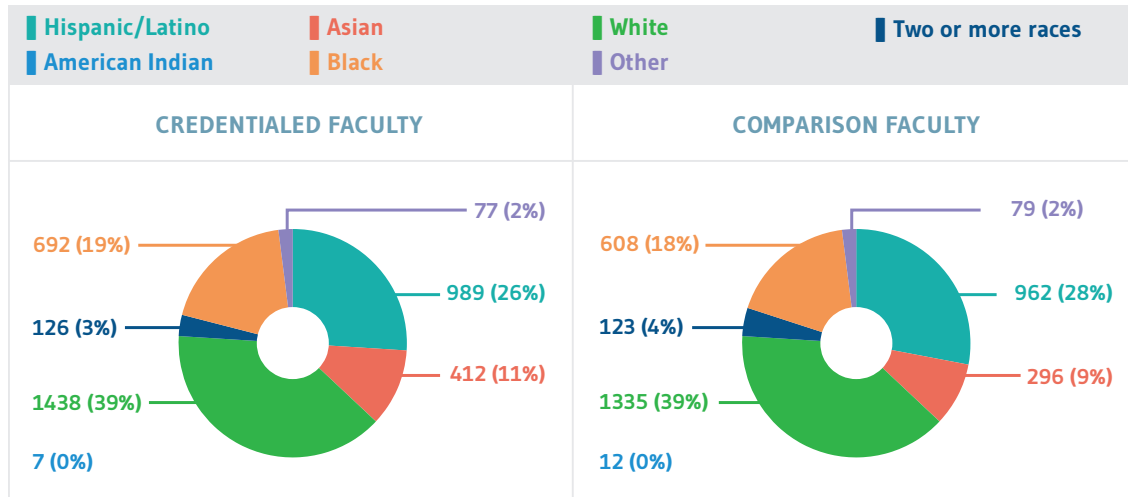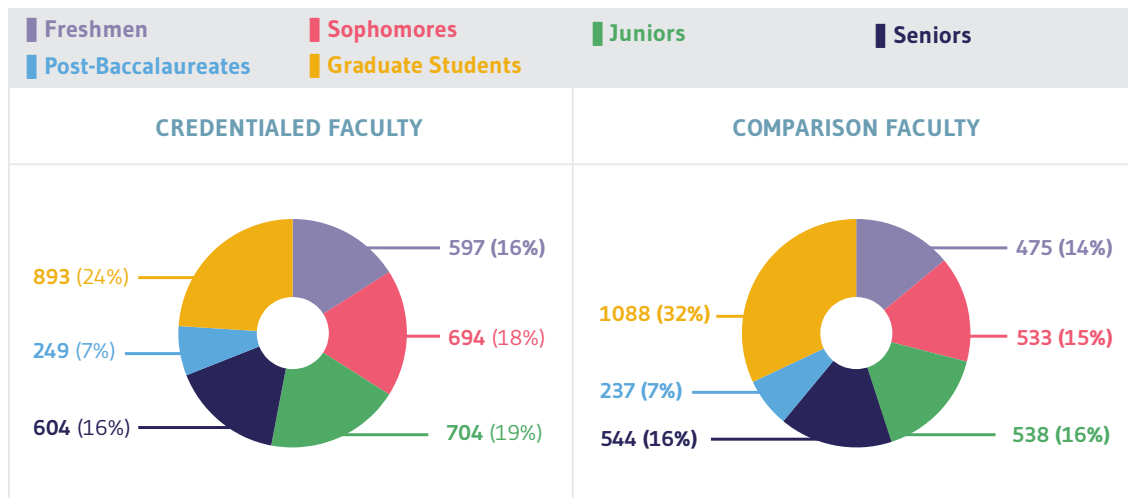- 296 (9%)
- 12 (0%)
- 1335 (39%)
- 123 (4%)
- 608 (18%)

## Figure 2

Enrolled students' class standing by faculty type. N = 3,741 for students enrolled in sections taught by credentialed faculty; N = 3,415 for students enrolled in sections taught by comparison faculty.

**Legend:** Freshmen · Sophomores · Juniors · Seniors · Post-Baccalaureates · Graduate Students

### CREDENTIALED FACULTY

- 597 (16%)
- 694 (18%)
- 704 (19%)
- 604 (16%)
- 249 (7%)
- 893 (24%)

### COMPARISON FACULTY

- 475 (14%)
- 533 (15%)
- 538 (16%)
- 544 (16%)
- 237 (7%)
- 1088 (32%)

## Measures

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 or receive an incomplete (I), regardless of whether their final grade in the course was a passing grade. Course grades were examined based on passing and average course grades. Passing grades, include A, B, C, D, P, PR, and CR grades. Letter grades were converted to a 4.0 scale where an A is 4.0, B is 3.0, C is 2.0, D is 1.0, and F is 0.0. Since only A through F letter grades can be calculated on this scale, the average for a section excludes 390 students who received all other grades, specifically I, W, W&, WF, P, PR, and CR.

# RESULTS
## Data Analysis Plan

Analyses were conducted using hierarchical linear regression for course grades and hierarchical logistic regression for course completion and passing. Control variables were entered in Step 1. Faculty and student demographics that were significantly different between the credentialed faculty and comparison faculty groups (i.e., faculty's years of teaching experience; student's age, class year, and race/ethnicity) were included as control variables only when they were significantly related to the outcome variable. For example, faculty experience was not significantly related to students' likelihood of course completion, so faculty experience was not used as a control variable in the regression on completion. Class year was converted to a numeric variable (seniority) with freshman = 1, sophomore = 2, junior = 3, senior =4, post-baccalaureate = 5, graduate student = 6, since outcomes progressively improved from each level of seniority to the next. Race/ethnicity was converted to multiple binary variables using dummy coding with Whites as the reference group; American Indian, other, and two or more races were combined into one category due to limited sample size for those groups. See Table 1 for correlations between continuous control variables.

Main effects for faculty type (ACUE v. comparison), year (2016-2017 v. 2017-2018), and semester (fall v. spring) were entered in Step 2. Two-way interactions between faculty type, year, and semester were entered in Step 3, and the three-way interaction term was entered in Step 4. The two-way interaction between faculty type and year was the primary effect of interest, as this would indicate that the change from one year to the next was different for students taught by ACUE-credentialed faculty than those taught by comparison faculty. When this interaction term was significant, follow-up analyses were conducted to examine the main effect of faculty type within each faculty group.

Since Black/African American and Hispanic/Latino students are underrepresented in higher education (Nettles, 2016), there is a particular interest in understanding the impact of the ACUE course on students from these groups.[2] Thus, when the interaction between faculty type and year was significant, analyses were conducted among students of credentialed faculty that examined whether the effect was stronger for Black/African American students or Hispanic/Latino students specifically. In these analyses, the racial/ethnic variable was modeled in the same way as year and semester, rather than being included as a control variable. When there was a significant interaction between race/ethnicity and year in these analyses, follow up analyses were conducted that examined effects by year and that examined effects only among the minority group.

Since all of these models involve many effects, the results below focus on the primary effect of interest in each model, with all effects reported in Appendix A.

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2    American Indian students are also underrepresented in higher education, but they are not present in large enough numbers in this sample to conduct subsample analyses.

**Table 1**

*Correlations Between Student Age, Student Seniority, and Faculty Teaching Experience*

| | STUDENT AGE | STUDENT SENIORITY | FACULTY YEARS OF EXPERIENCE |
|---|---|---|---|
| **STUDENT AGE** | – | | |
| **STUDENT SENIORITY** | .620** | – | |
| **FACULTY YEARS OF EXPERIENCE** | -.079** | -.061** | – |

**Significant at the .01 level (2-tailed)

# Course Completion

The hierarchical logistic regression on course completion showed a significant interaction between faculty type and year, $b = 0.64$, $SE = 0.29$, $OR = 1.89$, 95% $CI$ [1.07, 3.35], $p = .028$. Follow-up analyses examining credentialed and comparison faculty separately showed that the main effect of year was marginally significant for both groups, but in different directions. Among students taught by ACUE-credentialed faculty, there was a marginally greater likelihood of completing a course in 2017-2018 compared to 2016-2017, $b = 0.31$, $SE = 0.18$, $OR = 1.37$, 95% $CI$ [0.97, 1.93], $p = .077$. In contrast, among students taught by comparison faculty, there was a marginally lower likelihood of completing a course in 2017-2018 compared to 2016-2017, $b = -0.38$, $SE = 0.23$, $OR = 0.68$, 95% $CI$ [0.44, 1.08], $p = .099$.

Analyses focusing on potential differences in effects for Black/African American students of credentialed faculty showed a significant interaction between year and race, indicating that the effect of student race differed by year, $b = 1.07$, $SE = 0.51$, $OR = 2.90$, 95% $CI$ [1.07, 7.88], $p = .036$. Follow up analyses showed that among those taught by credentialed faculty, Black/African American students were marginally less likely to complete courses compared to other students in 2016-2017, $b = -0.45$, $SE = 0.25$, $OR = 0.64$, 95% $CI$ [0.39, 1.05], $p = .077$. However, in 2017-2018, there was not a significant difference in likelihood of completing courses taught by credentialed faculty between Black/African American students and other students, $b = 0.65$, $SE = 0.44$, $OR = 1.91$, 95% $CI$ [0.81, 4.52], $p = .139$. Focusing on the effect of year among only Black/African American students of credentialed faculty, analyses found that Black/African American students taught by credentialed faculty were significantly more likely to complete courses in 2017-2018 compared to 2016-2017, $b = 1.23$, $SE = 0.47$, $OR = 3.40$, 95% $CI$ [1.36, 8.49], $p = .009$.

> "…Black/African American students taught by credentialed faculty were significantly more likely to complete courses in 2017-2018 compared to 2016-2017…"

Analyses focusing on potential differences in effects for Hispanic/Latino students of credentialed faculty found that the interaction between year and ethnicity was not significant, $b = -0.49$, $SE = 0.49$, $OR = 0.61$, 95% $CI$ [0.23, 1.61], $p = .317$.

## Grades

The hierarchical logistic regression on passing courses showed that the interaction between faculty type and year was not significant, $b = 0.24$, $SE = 0.18$, $OR = 1.27$, 95% CI [0.89, 1.80], $p = .188$. The hierarchical linear regression on course grades showed that the interaction between faculty type and year was not significant, $b = 0.04$, $SE = 0.05$, $\beta = .01$, $t(6,752) = 0.64$, $p = .523$.

# DISCUSSION

There was a significant difference between students taught by ACUE-credentialed versus comparison faculty in the change in their likelihood of completing courses over time. While the improvement in course completion from the year before faculty began an ACUE course to the year during which they earned their credential was only marginally significant among students taught by ACUE-credentialed faculty, this was in contrast to a marginally significant decline in course completion among students taught by comparison faculty during the same time period. Furthermore, subgroup analyses showed that the increase in course completion was statistically significant for Black/African American students of ACUE-credentialed faculty. Moreover, this significant improvement occurred despite completion rates already being high; 94 percent of Black/African American students taught by ACUE faculty completed their courses in 2016-2017, which increased to 98 percent in 2017-2018. In addition, this improvement closed the marginally significant gap in course completion between Black/African American students and all other students of ACUE faculty that occurred in 2016-2017.

> **"… this improvement closed the marginally significant gap in course completion between Black/African American students and all other students of ACUE faculty that occurred in 2016-2017."**

One possible reason for the increase in course completion specifically among Black/African American students may be that faculty who earned their credential in effective college instruction improved their teaching practices in specific ways that caused their Black/African American students to have more faith in their ability to succeed and feel more welcome in their courses. This is supported by self-reports from the credentialed faculty and their students. On their end-of-course survey, 42 percent of credentialed faculty reported confidence in avoiding and effectively addressing microaggressions and stereotype threats before taking the ACUE course, while 96 percent reported confidence after taking the course. Similarly, their confidence in impacting students' beliefs about their ability to do well on course assignments and assessments improved from 42 percent to 92 percent. The faculty self-reports are corroborated by reports from their students, with 96 percent of student survey respondents from the end of the spring 2018 semester agreeing or strongly agreeing that their instructor created a classroom environment that was welcoming to diverse viewpoints, helped them feel welcome in and valuable to the class, and motivated them to work hard and believe they could succeed.

One limitation of the current study is that the analyses do not account for clustering of outcomes, such as within courses or individuals. This non-independence of observations can affect the standard errors and thus statistical significance. However, since instructors teach multiple courses and some courses have multiple sections taught by different faculty in the sample, it is unclear whether sections should be considered nested within instructors or vice versa. This is further complicated by the fact that some students have multiple observations across faculty, and therefore are members of multiple clusters. In fact, some students are enrolled in courses with both ACUE-credentialed and comparison faculty. In those cases, the interdependence of observations may actually make it more difficult to find significant differences since it means that the observations across the two groups are more similar to each other. Moreover, some content of the ACUE course, such as helping students become self-directed learners, would likely lead to improvements in students' academic outcomes across their courses, even those taught by comparison faculty. This would further minimize the observed differences in outcomes between ACUE

and comparison sections. Similarly, the same course could have sections taught by both ACUE-credentialed and comparison faculty. Thus, the complicated nature of the data makes for a more conservative test of the effect in some ways and makes for a more liberal test in other ways, potentially balancing each other out to some extent. Still, future research should account for such complex clustering through multilevel models that allow for multi-membership data and examines which way of nesting provides the best fit for the data. In addition, since the clustering may affect statistical significance, it is important conduct additional studies to examine whether the effects found in the current study replicate. Stronger conclusions can be drawn, despite the analytical limitations, if consistent findings are found across multiple studies.

The results reported here on increased course completion supplement prior findings on student success (Lawner & Snow, 2018) and grades (Lawner & Snow, 2019), demonstrating that credentialing faculty can result in improvements across several types of student outcomes. In addition, the unique contribution of the evaluation at TWU is that the student-level data allowed for an examination of impact specifically on Black/African American and Hispanic/Latino students. Future research should continue to explore impacts on subgroups of students who are underrepresented or marginalized in higher education, including analyzing data by other demographic variables, such as socio-economic status.

> **"The results reported here on increased course completion supplement prior findings on student success (Lawner & Snow, 2018) and grades (Lawner & Snow, 2019), demonstrating that credentialing faculty can result in improvements across several types of student outcomes."**

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# APPENDIX A

## Table 1

*Logistic regression predicting course completion in the entire sample*

| | STEP 1 OR | STEP 2 OR | STEP 3 OR | STEP 4 OR |
|---|---|---|---|---|
| **STEP 1** | | | | |
| Class Year | 1.24*** | 1.22*** | 1.21*** | 1.21*** |
| Age | 0.97*** | 0.97*** | 0.97*** | 0.97*** |
| **STEP 2** | | | | |
| Faculty (ACUE) | | 0.82 | 0.51** | 0.48* |
| Year (2017–2018) | | 1.06 | 0.91 | 0.84 |
| Semester (spring) | | 1.32* | 1.62 | 1.41 |
| **STEP 3** | | | | |
| Faculty × Year | | | 1.89* | 2.13* |
| Faculty × Semester | | | 1.24 | 1.48 |
| Year × Semester | | | 0.57* | 0.68 |
| **STEP 4** | | | | |
| Faculty × Year × Semester | | | | 0.75 |

Note: ***$p < .001$, **$p < .01$, *$p < .05$, +$p < .10$

## Table 2

*Logistic regressions predicting course completion, separated by faculty type*

| | ACUE-credentialed faculty | | | Comparison faculty | | |
|---|---|---|---|---|---|---|
| | STEP 1 OR | STEP 2 OR | STEP 3 OR | STEP 1 OR | STEP 2 OR | STEP 3 OR |
| **STEP 1** | | | | | | |
| Class Year | 1.29*** | 1.26*** | 1.26*** | 1.16* | 1.14+ | 1.14+ |
| Age | 0.96** | 0.96** | 0.96** | 0.97* | 0.98+ | 0.98+ |
| **STEP 2** | | | | | | |
| Year (2017–2018) | | 1.37+ | 1.78* | | 0.68+ | 0.81 |
| Semester (spring) | | 1.55* | 2.07** | | 1.07 | 1.42 |
| **STEP 3** | | | | | | |
| Year × Semester | | | 0.51+ | | | 0.68 |

Note: ***$p < .001$, **$p < .01$, *$p < .05$, +$p < .10$

## Table 3

*Logistic regression predicting course completion among students of credentialed faculty, with race as a factor*

| | STEP 1 OR | STEP 2 OR | STEP 3 OR | STEP 4 OR |
|---|---|---|---|---|
| **STEP 1** | | | | |
| **Class Year** | 1.29*** | 1.26*** | 1.27*** | 1.27*** |
| **Age** | 0.96** | 0.96** | 0.96** | 0.96** |
| **STEP 2** | | | | |
| **Black/African American** | | 0.90 | 0.57* | 0.54* |
| **Year (2017–2018)** | | 1.36+ | 1.42 | 1.36 |
| **Semester (spring)** | | 1.55* | 1.85* | 1.76* |
| **STEP 3** | | | | |
| **Black/African American × Year** | | | 2.90* | 3.83* |
| **Black/African American × Semester** | | | 1.49 | 1.84 |
| **Year × Semester** | | | 0.54+ | 0.60 |
| **STEP 4** | | | | |
| **Black/African American × Year × Semester** | | | | 0.49 |

Note: ***$p < .001$, **$p < .01$, *$p < .05$, +$p < .10$

## Table 4

*Logistic regressions predicting likelihood of course completion among students of credentialed faculty, with race as a factor and separated by year*

| | 2016–2017 | | | 2017–2018 | | |
|---|---|---|---|---|---|---|
| | STEP 1 OR | STEP 2 OR | STEP 3 OR | STEP 1 OR | STEP 2 OR | STEP 3 OR |
| **STEP 1** | | | | | | |
| **Class Year** | 1.34** | 1.29** | 1.29** | 1.21+ | 1.23* | 1.23* |
| **Age** | 0.95** | 0.95** | 0.95** | 0.98 | 0.98 | 0.98 |
| **STEP 2** | | | | | | |
| **Black/African American** | | 0.64+ | 0.54* | | 1.91 | 2.03 |
| **Semester (spring)** | | 2.03** | 1.73* | | 1.05 | 1.06 |
| **STEP 3** | | | | | | |
| **Black/African American × Year** | | | 1.88 | | | 0.88 |

Note: ***$p < .001$, **$p < .01$, *$p < .05$, +$p < .10$

## Table 5

*Logistic regression predicting likelihood of course completion among Black/African American students of credentialed faculty*

| | STEP 1 OR | STEP 2 OR | STEP 3 OR |
|---|---|---|---|
| **STEP 1** | | | |
| Class Year | 1.35* | 1.33+ | 1.32+ |
| Age | 0.96+ | 0.96+ | 0.96+ |
| **STEP 2** | | | |
| Year (2017–2018) | | 3.40** | 5.21** |
| Semester (spring) | | 2.36* | 3.20* |
| **STEP 3** | | | |
| Year × Semester | | | 0.30 |

Note: ***$p < .001$, **$p < .01$, *$p < .05$, +$p < .10$

## Table 6

*Logistic regression predicting course completion among students of credentialed faculty, with ethnicity as a factor*

| | STEP 1 OR | STEP 2 OR | STEP 3 OR | STEP 4 OR |
|---|---|---|---|---|
| **STEP 1** | | | | |
| Class Year | 1.29*** | 1.26*** | 1.26*** | 1.26*** |
| Age | 0.96** | 0.96** | 0.96** | 0.96** |
| **STEP 2** | | | | |
| Hispanic/Latino | | 1.02 | 1.15 | 1.13 |
| Year (2017–2018) | | 1.37+ | 2.10** | 2.06** |
| Semester (spring) | | 1.55* | 1.94* | 1.92* |
| **STEP 3** | | | | |
| Hispanic/Latino × Year | | | 0.58 | 0.61 |
| Hispanic/Latino × Semester | | | 1.34 | 1.44 |
| Year × Semester | | | 0.49+ | 0.51 |
| **STEP 4** | | | | |
| Hispanic/Latino × Year × Semester | | | | 0.87 |

Note: ***$p < .001$, **$p < .01$, *$p < .05$, +$p < .10$

**Table 7**

*Logistic regression predicting course passing in the entire sample*

| | STEP 1 OR | STEP 2 OR | STEP 3 OR | STEP 4 OR |
|---|---|---|---|---|
| **STEP 1** | | | | |
| Black/African American | 0.61*** | 0.62*** | 0.62*** | 0.62*** |
| Hispanic/Latino | 0.78* | 0.78* | 0.78* | 0.78* |
| Asian | 1.24 | 1.27 | 1.27 | 1.27 |
| All other non-white | 0.98 | 0.98 | 0.97 | 0.97 |
| Class year | 1.49*** | 1.47*** | 1.47*** | 1.47*** |
| Age | 0.97*** | 0.97*** | 0.97*** | 0.97*** |
| **STEP 2** | | | | |
| Faculty (ACUE) | | 0.78* | 0.72* | 0.70* |
| Year (2017–2018) | | 1.15+ | 1.15 | 1.13 |
| Semester (spring) | | 1.23* | 1.57* | 1.52+ |
| **STEP 3** | | | | |
| Faculty × Year | | | 1.27 | 1.30 |
| Faculty × Semester | | | 0.89 | 0.93 |
| Year × Semester | | | 0.72+ | 0.75 |
| **STEP 4** | | | | |
| Faculty × Year × Semester | | | | 0.93 |

Note: ***$p < .001$, **$p < .01$, *$p < .05$, +$p < .10$

**Table 8**

*Linear regression predicting grades in the entire sample*

| | STEP 1 β | STEP 2 β | STEP 3 β | STEP 4 β |
|---|---|---|---|---|
| **STEP 1** | | | | |
| **Black/African American** | -.16*** | -.16*** | -.16*** | -.16*** |
| **Hispanic/Latino** | -.08*** | -.09*** | -.09*** | -.09*** |
| **Asian** | -.02 | -.01 | -.01 | -.01 |
| **All other non-white** | -.03* | -.03* | -.03* | -.03* |
| **Class year** | .40*** | .39*** | .39*** | .39*** |
| **Age** | -.06*** | -.07*** | -.07*** | -.07*** |
| **Faculty teaching experience** | -.05*** | -.05*** | -.06*** | -.06*** |
| **STEP 2** | | | | |
| **Faculty (ACUE)** | | -.08*** | -.13*** | -.14*** |
| **Year (2017–2018)** | | .05*** | .02 | .01 |
| **Semester (spring)** | | .05*** | -.02 | -.03 |
| **STEP 3** | | | | |
| **Faculty × Year** | | | .01 | .03 |
| **Faculty × Semester** | | | .07** | .08** |
| **Year × Semester** | | | .04+ | .05+ |
| **STEP 4** | | | | |
| **Faculty × Year × Semester** | | | | -.02 |

Note: ***$p < .001$, **$p < .01$, *$p < .05$, +$p < .10$

# 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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