Taking it to the Next Level:

A Field Experiment to Improve Instructor-Student Relationships in College

Supplementary Materials

# Statement of Transparency

See Statement of Transparency (SOT) at <https://osf.io/emnj7/>

# Details on participant attrition

### Instructors

Of the 167 faculty members who expressed interest in participating, three did not fit our criteria (e.g., taught an online course rather than in-person) and 17 did not complete the initial get-to-know-you survey. Of the 147 faculty who took the initial get-to-know-you survey, 129 faculty members administered the get-to-know-you survey to the students in one of their classes. Of the 129 participating faculty, one instructor later informed us that she was conducting the intervention in an online course. Per our original criteria, we excluded this professor and her students from our final sample. 124 of the 128 participating faculty completed the feedback forms, which constituted the treatment for the instructors, leaving us with 124 faculty members having completed the initial get-to-know-you survey and having received the intervention (or control) feedback.

Per our preregistered Statement of Transparency, we also excluded instructors and their students if the instructor improperly distributed the end-of-semester survey (e.g., by administering the original survey for a second time instead). By this criterion, we excluded one instructor. After final data collection, we found that a handful of instructors administered the survey to graduate students, including three instructors who only recruited graduate students to participate. Based on our original recruitment goals, we excluded the three instructors who did not have any undergraduate students participating. Only one instructor did not complete the final survey, but we still include this participant in our ITT analyses. This brings our final sample for our main ITT analyses to 120 instructors.

### Students

3,336 students entered the initial get-to-know-you survey at the beginning of the semester. After consenting to participate and indicating that they had not taken the survey already with another instructor, the survey platform randomly assigned 3,030 students to a condition. Students attrited before being assigned to a condition because they indicated they already took the survey with another instructor (*n* = 126), they did not complete the initial get-to-know-you survey (*n* = 168), or they completed the get-to-know-you survey but dropped out before being assigned to a condition (*n* = 12).

Although faculty (and the survey instructions) directed students to participate in the intervention *for one and only one* course, 45 students took the survey with more than one teacher. We screened out those students before requesting that the instructors filled out their feedback forms, excluding them before running any analyses (*n* = 2,985). Per our original criteria, we excluded 19 students who participated in the intervention in an online course, leaving us with 2,966 students having completed the initial get-to-know-you survey and having received the intervention (or control) feedback. We also excluded the 95 students who were participating with one of the 4 instructors who did not complete the feedback forms (the crux of the intervention).

Additionally, we excluded 30 students because their instructor improperly distributed the end-of-semester survey (e.g., by administering the original survey for a second time instead) and 92 graduate students from the analysis. This brings our final sample for our main ITT analyses to 2,749 students. As mentioned above, 2,111 of these students entered the final survey and 2,064 completed the final survey. We can include students who did not complete the final survey in our ITT analyses, except for those requiring responses on the final student survey.

# More Information on Measures

### Similarity

We extracted factor scores for the instructor and student similarity scales and found that the correlations between the unit-weighted composites and the factor-weighted composites were greater than .98. So, we present the results of the unit-weighted scores for ease of interpretation.

### Instructor-Student Relationships

For the instructor and student ISR scales we also extracted factor scores and found that the correlations between the unit-weighted composites and the factor-weighted composites were greater than .99, so we report results from the unit-weighted composites.

### Course Final Exam

Of the 674 students who were in classes where instructors reported they had an objectively graded final exam, no grade was provided for 43 students (distributed among 10 instructors). The number of students for whom we do not have record of a final exam grade does not meaningfully differ by condition (*ncontrol* = 19, *ntreatment* = 24, (1) = 0.69, *p* = .41). We do not know why an instructor may not have provided a final exam grade, but 13 of these students received an “F” for the final course grade, while another 13 students received passing grades (C+ or better). This suggests that instructors may have been waiting for these students to complete or make up the final exam at the time they reported on students’ exam grades. The final 17 students did not receive a final grade for the course, suggesting they may have never officially enrolled in the course with that instructor.

### College Persistence

Of the 2,190 students who did not graduate after the Spring 2017 semester (when the intervention took place), an additional 158 students were excluded from the primary persistence analysis because we are missing data on their prior academic performance. This leaves 2,032 eligible students in our main analysis for college persistence.

### Control Variables

For analyses exploring student academic outcomes, we controlled for student gender (because females tend to earn higher course grades than males; Duckworth & Seligman, 2006) and their prior academic performance (i.e., their cumulative GPA at the end of the Fall 2016 semester). We are missing prior academic performance data for 6% of the sample (172 students).

# Procedures & Pre-Registered Hypotheses

First, the research team emailed all university instructors with information about the study and an invitation to participate during the Fall 2016 semester. Interested instructors took the initial get-to-know-you survey. Shortly after students started their spring semester (beginning January 2017) instructors introduced the study to one of their classes and asked those students who were interested in participating to complete the first survey, where their instructors’ responses were pre-programmed into the survey.

During this initial survey, after consenting to participate, students completed the anticipated ISR and anticipated rigor of instructor expectations measures, then the get-to-know-you survey. The crux of the intervention occurred after the get-to-know-you survey, where students immediately received feedback on their similarities with their instructor (in the Treatment Group) or responses to some of the same items from students at another school (in the Control Group). To internalize these similarities, students responded to a series of brief prompts. Finally, students completed the perceived similarity and anticipated course enjoyment measures and the demographic items. Students completed these surveys by February 16, 2017.

After the completion of these surveys, instructors received parallel feedback and responded to similar prompts as those of the students in the Treatment Group. Like the students’ feedback forms, we presented instructors with seven similarities per student. Instructors that completed these forms did so by March 17, 2017. After these forms were completed, we reinforced the treatment through a series of emailed reminders to help students and instructors remember their similarities and think about how they could use those commonalities to improve their social connections to each other.

During the final weeks of the semester and beyond (April 24th through June 2nd), students and instructors took a final survey. Students answered questions about their experiences in the target instructors’ class, while instructors answered questions about each student in their target course. The research team collected school record data after the spring semester 2017 and again after the spring semester 2018.

### Pre-specified Hypotheses

The immediate goal of the intervention was to bolster perceptions of similarity between instructors and students. In turn, we expected that these shifted perceptions would enhance the relationships between instructors and students and lead to beneficial downstream outcomes for students. In particular, we anticipated that students’ academic performance (as measured by course grades and final exams) would improve when ISRs were strengthened. Furthermore, we anticipated that the more positive social and academic experiences in this course would lead to greater persistence at the university. The preliminary hypotheses correspond to the findings we attempted to replicate from the original high school study, while the primary hypotheses reflect the new, college-relevant outcomes we anticipated would be improved by this intervention. We tested the following pre-specified hypotheses:

### Preliminary hypothesis 1. Similarity:

1. In the Treatment Group, students will report a greater sense of similarity to their instructor on the student-reported six-item similarity scale as compared to their Control Group counterparts. This finding will emerge both immediately post-intervention and in the final survey. (Recall that students took the similarity scale in identical form at both time points).
2. In the Treatment Group, instructors will report a greater sense of similarity to the corresponding Treatment students – as measured by the single similarity item given to instructors during the final survey – as compared to instructors’ reports of students in the Control Group.

### Preliminary hypothesis 2. Instructor-Student Relationship:

1. Treatment Group students will report perceiving a more positive instructor-student relationship (i.e., the seven-item student-report measure), controlling for students’ pre-intervention anticipated instructor-student relationship as compared to students in the Control Group.
2. Instructors will report perceiving a more positive instructor-student relationship (i.e., the seven-item instructor-report measure) with students in the Treatment Group at the end of the semester as compared to those in the Control Group.

### Preliminary hypothesis 3. Course Grades:

1. Students in the Treatment Group will earn higher grades in the focal course as compared to students in the Control Group, controlling for prior year GPA and gender.

### Primary hypothesis 1. Academic Achievement:

1. For the subset of students in the Treatment Group who take courses with an objective final exam (e.g., multiple choice), they will earn higher grades on their final exam as compared to students in the Control Group, controlling for prior year GPA and gender.

### Primary hypothesis 2. Persistence:

1. In the Treatment Group, students will re-enroll at the university with higher rates (in the Fall 2017 semester) than students in the Control Group, controlling for prior year GPA and gender.

# Analytic Details

### Exclusion Criteria

Some students showed evidence of speeding through the survey without putting thought into it (e.g., straight-line responding). Using the approach Barge and Gehlbach (2012) employed, we removed these respondents from relevant analyses. Specifically, we removed any sets of ten or more sequential responses where the respondent continues to answer using the same response anchor within the same section of the survey. This resulted the exclusion of 84 students from the end-of-semester perceptions of similarity and ISR analyses and excluding 164 instructor reports on their perceptions of similarity with students and the ISR. There was no differential exclusion by condition, *p*s > .26.

### Pre-Registered Analysis Plan

To examine the differences between our Treatment and Control Groups, we took an ITT approach by including all remaining participants for our primary analysis. When analyzing course grades, we standardized students’ grades within courses to account for potential between-classroom differences in grade distributions. For our continuous outcomes, we accounted for non-independence of residuals within instructors by standard errors adjusted for clustering. For each hypothesis we only included those covariates explicitly stated above (to obtain more precise estimates of the effects of the treatment). As a complement to our regression analyses, we present figures for the mean-levels of each of our hypothesized outcomes unadjusted for nesting to help gauge the actual effects in classrooms, when appropriate. In line with Cumming’s (2014) recommendation, we evaluated our hypotheses by presenting and discussing 95% confidence intervals and effect sizes (not by reporting p-values).

Our basic model for hypotheses with continuous outcomes is:

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where is an indicator that student was exposed to the similarity intervention (and the instructor was exposed to the intervention for student ), is a vector of student-level covariates, including pre-intervention measures (if available), is a vector of instructor-level covariates, and is a clustered residual.

Our model for outcomes with ordinal outcomes (e.g., the instructors’ reports of similarity to their students) is:

where everything is as before, except that indexes the levels of the outcome and runs from two to the number of categories in the outcome measure. Note that in addition to testing the model with ordinal outcomes, we also test a model with binary outcomes (e.g., for the dependent measure of persistence). In this case, we adapt this above model to be a standard logistic regression model.

# Results

## Table S1A. Student Perceptions of Similarity with Instructor (Immediately Post-Intervention).

|  |  |  |  |
| --- | --- | --- | --- |
|  | (1) | (2) | (3) |
|  |  |  |  |
|  |  |  |  |
| Treatment | 0.155\*\* | 0.156\*\* | 0.157\*\* |
|  | (0.026) | (0.026) | (0.027) |
|  |  |  |  |
| Observations | 2,658 | 2,653 | 2,658 |
| Adjusted R-squared | 0.011 | 0.011 | 0.086 |
| Class Size Covariate | N | Y | N |
| Classroom Fixed Effect | N | N | Y |

Robust standard errors clustered at the classroom level in parentheses

\*\* p<0.01, \* p<0.05, + p<0.1

## Table S1B. Student Perceptions of Similarity with Instructor (End-of-Semester).

|  |  |  |  |
| --- | --- | --- | --- |
|  | (1) | (2) | (3) |
|  |  |  |  |
|  |  |  |  |
| Treatment | 0.114\*\* | 0.115\*\* | 0.117\*\* |
|  | (0.031) | (0.031) | (0.032) |
|  |  |  |  |
| Observations | 2,022 | 2,019 | 2,022 |
| Adjusted R-squared | 0.005 | 0.007 | 0.178 |
| Class Size Covariate | N | Y | N |
| Classroom Fixed Effect | N | N | Y |

Robust standard errors clustered at the classroom level in parentheses

\*\* p<0.01, \* p<0.05, + p<0.1

## Table S1C. Student Perceptions of the ISR.

|  |  |  |  |
| --- | --- | --- | --- |
|  | (1) | (2) | (3) |
|  |  |  |  |
|  |  |  |  |
| Treatment | 0.014 | 0.015 | 0.018 |
|  | (0.030) | (0.030) | (0.031) |
|  |  |  |  |
| Observations | 2,022 | 2,019 | 2,022 |
| Adjusted R-squared | 0.301 | 0.301 | 0.435 |
| Class Size Covariate | N | Y | N |
| Classroom Fixed Effect | N | N | Y |

Robust standard errors clustered at the classroom level in parentheses

\*\* p<0.01, \* p<0.05, + p<0.1

Models control for students' anticipated perceptions of the ISR

## Table S1D. Instructor Perceptions of Similarity with Students.

|  |  |  |  |
| --- | --- | --- | --- |
|  | (1) | (2) | (3) |
|  |  |  |  |
|  |  |  |  |
| Treatment | 0.000 | 0.012 | 0.043 |
|  | (0.070) | (0.067) | (0.081) |
|  |  |  |  |
| Observations | 2,387 | 2,382 | 2,387 |
| Class Size Covariate | N | Y | N |
| Classroom Fixed Effect | N | N | Y |

Robust standard errors clustered at the classroom level in parentheses

\*\* p<0.01, \* p<0.05, + p<0.1

## Table S1E. Instructor Perceptions of the ISR.

|  |  |  |  |
| --- | --- | --- | --- |
|  | (1) | (2) | (3) |
|  |  |  |  |
|  |  |  |  |
| Treatment | -0.011 | -0.007 | -0.007 |
|  | (0.029) | (0.028) | (0.026) |
|  |  |  |  |
| Observations | 2,399 | 2,394 | 2,399 |
| Adjusted R-squared | -0.000 | 0.005 | 0.328 |
| Class Size Covariate | N | Y | N |
| Classroom Fixed Effect | N | N | Y |

Robust standard errors clustered at the classroom level in parentheses

\*\* p<0.01, \* p<0.05, + p<0.1

## Table S1F. Standardized Course Grade.

|  |  |  |  |
| --- | --- | --- | --- |
|  | (1) | (2) | (3) |
|  |  |  |  |
|  |  |  |  |
| Treatment | 0.065+ | 0.065+ | 0.068+ |
|  | (0.036) | (0.036) | (0.037) |
|  |  |  |  |
| Observations | 2,458 | 2,458 | 2,458 |
| Adjusted R-squared | 0.176 | 0.176 | 0.164 |
| Class Size Covariate | N | Y | N |
| Classroom Fixed Effect | N | N | Y |

Robust standard errors clustered at the classroom level in parentheses

\*\* p<0.01, \* p<0.05, + p<0.1

Models control for student gender and prior cumulative college GPA

## Table S1G. Objectively Graded Final Exam.

|  |  |  |  |
| --- | --- | --- | --- |
|  | (1) | (2) | (3) |
|  |  |  |  |
|  |  |  |  |
| Treatment | 0.004 | 0.007 | -0.015 |
|  | (0.089) | (0.089) | (0.084) |
|  |  |  |  |
| Observations | 605 | 605 | 605 |
| Adjusted R-squared | 0.105 | 0.106 | 0.395 |
| Class Size Covariate | N | Y | N |
| Classroom Fixed Effect | N | N | Y |

Robust standard errors clustered at the classroom level in parentheses

\*\* p<0.01, \* p<0.05, + p<0.1

Models control for student gender and prior cumulative college GPA

## Table S1H. Student Enrolled in Fall 2017.

|  |  |  |  |
| --- | --- | --- | --- |
|  | (1) | (2) | (3) |
|  |  |  |  |
|  |  |  |  |
| Treatment | 0.055 | 0.058 | 0.063 |
|  | (0.176) | (0.176) | (0.176) |
|  |  |  |  |
| Observations | 2,032 | 2,032 | 1,494 |
| Class Size Covariate | N | Y | N |
| Classroom Fixed Effect | N | N | Y |

Robust standard errors clustered at the classroom level in parentheses

\*\* p<0.01, \* p<0.05, + p<0.1

Models control for student gender and prior cumulative college GPA

Column 3 omitted observations where there was perfect prediction within classrooms

## Table S2. Treatment x First Generation Status.

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
|  | Student Perception of Similarity (Immediate) | Student Perception of Similarity (End of Semester) | Student Perception of ISR | Instructor Perception of Similarity | Instructor Perception of ISR | Course Grade | Final Exam Grade (Objectively Graded) | Enrolled in Fall 2017 |
|  |  |  |  |  |  |  |  |  |
| Treatment \* First Generation Status | 0.145\* | 0.090 | 0.023 | 0.071 | 0.005 | -0.073 | -0.184 | 0.029 |
|  | (0.011 - 0.278) | (-0.029 - 0.210) | (-0.072 - 0.119) | (-0.071 - 0.213) | (-0.108 - 0.117) | (-0.210 - 0.065) | (-0.483 - 0.115) | (-0.779 - 0.836) |
|  |  |  |  |  |  |  |  |  |
| Observations | 2,653 | 2,019 | 2,019 | 2,381 | 2,393 | 2,453 | 605 | 2,028 |
| Adjusted R2 | 0.088 | 0.177 | 0.435 | 0.330 | 0.333 | 0.168 | 0.396 |  |
| Model | OLS | OLS | OLS | OLS | OLS | OLS | OLS | Logit |

Robust standard errors clustered at the classroom level in parentheses

\*\* p<0.01, \* p<0.05, + p<0.1

Models 1-7 include classroom fixed effects

Column 3 controls for students' anticipated perceptions of the ISR

Columns 6-8 control for student gender and prior cumulative college GPA

## Table S3. Treatment x Race.

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
|  | Student Perception of Similarity (Immediate) | Student Perception of Similarity (End of Semester) | Student Perception of ISR | Instructor Perception of Similarity | Instructor Perception of ISR | Course Grade | Final Exam Grade (Objectively Graded) | Enrolled in Fall 2017 |
|  |  |  |  |  |  |  |  |  |
| Treatment \* At-Risk Minority | 0.031 | 0.130+ | 0.111+ | 0.072 | -0.020 | -0.019 | -0.232 | -0.194 |
|  | (-0.118 - 0.181) | (-0.003 - 0.264) | (-0.017 - 0.239) | (-0.110 - 0.253) | (-0.187 - 0.146) | (-0.178 - 0.141) | (-0.638 - 0.175) | (-1.038 - 0.649) |
|  |  |  |  |  |  |  |  |  |
| Observations | 2,067 | 1,586 | 1,586 | 1,846 | 1,857 | 1,930 | 462 | 1,602 |
| Adjusted R2 | 0.095 | 0.180 | 0.459 | 0.336 | 0.340 | 0.177 | 0.419 |  |
| Model | OLS | OLS | OLS | OLS | OLS | OLS | OLS | Logit |

Robust standard errors clustered at the classroom level in parentheses

\*\* p<0.01, \* p<0.05, + p<0.1

At-Risk Minority is an indicator for whether the student identifies as Black or Hispanic/Latinx (the comparison group is White students)

Models 1-7 include classroom fixed effects

Column 3 controls for students' anticipated perceptions of the ISR

Columns 6-8 control for student gender and prior cumulative college GPA; Column 8 omitted observations where there was perfect prediction within classrooms

## Table S4. Treatment x Number of Enrolled Students.

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
|  | Student Perception of Similarity (Immediate) | Student Perception of Similarity (End of Semester) | Student Perception of ISR | Instructor Perception of Similarity | Instructor Perception of ISR | Course Grade | Final Exam (Objectively Graded) | Enrolled in Fall 2017 |
|  |  |  |  |  |  |  |  |  |
| Treatment \* Class Size | 0.000 | -0.001+ | -0.001+ | -0.002+ | -0.002\*\* | 0.000 | -0.003\* | -0.003 |
|  | (-0.000 - 0.001) | (-0.001 - 0.000) | (-0.002 - 0.000) | (-0.004 - 0.000) | (-0.003 - -0.000) | (-0.001 - 0.002) | (-0.005 - -0.000) | (-0.009 - 0.002) |
|  |  |  |  |  |  |  |  |  |
| Observations | 2,653 | 2,019 | 2,019 | 2,382 | 2,394 | 2,458 | 605 | 554 |
| Adjusted R2 | 0.011 | 0.007 | 0.301 | 0.016 | 0.006 | 0.176 | 0.109 |  |
| Model | OLS | OLS | OLS | OLS | OLS | OLS | OLS | Logit |

Robust standard errors clustered at the classroom level in parentheses

\*\* p<0.01, \* p<0.05, + p<0.1

Column 3 controls for students' anticipated perceptions of the ISR

Columns 6-8 control for student gender and prior cumulative college GPA

## Table S5A. Student Anticipated Perceptions of the ISR by First-Generation Status (Beginning of Semester).

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | (1) | (2) | (3) | (4) | (5) |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
| First-Generation | 0.016 | 0.014 | 0.028 | 0.018 | 0.020 |
|  | (0.027) | (0.026) | (0.026) | (0.025) | (0.025) |
|  |  |  |  |  |  |
| Observations | 2,733 | 2,571 | 2,733 | 2,571 | 2,453 |
| Adjusted R2 | -0.000 | -0.000 | 0.155 | 0.156 | 0.148 |
| Prior Achievement Covariate | N | Y | N | Y | Y |
| Course Grade Covariate | N | N | N | N | Y |
| Classroom Fixed Effect | N | N | Y | Y | Y |

Robust standard errors clustered at the classroom level in parentheses

\*\* p<0.01, \* p<0.05, + p<0.1

First-Generation is an indicator for whether the student is the first in his or her family to attend college (the comparison group is continuing-generation students who had at least one parent who attended college)

## Table S5B. Student Perceptions of the ISR by First-Generation Status (End-of-Semester).

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | (1) | (2) | (3) | (4) | (5) |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
| First-Generation | -0.005 | 0.002 | 0.023 | 0.024 | 0.035 |
|  | (0.039) | (0.039) | (0.033) | (0.033) | (0.034) |
|  |  |  |  |  |  |
| Observations | 2,019 | 1,946 | 2,019 | 1,946 | 1,864 |
| Adjusted R2 | -0.000 | 0.002 | 0.266 | 0.266 | 0.292 |
| Prior Achievement Covariate | N | Y | N | Y | Y |
| Course Grade Covariate | N | N | N | N | Y |
| Classroom Fixed Effect | N | N | Y | Y | Y |

Robust standard errors clustered at the classroom level in parentheses

\*\* p<0.01, \* p<0.05, + p<0.1

First-Generation is an indicator for whether the student is the first in his or her family to attend college (the comparison group is continuing-generation students who had at least one parent who attended college)

## Table S5C. Instructor Perceptions of the ISR by First-Generation Status.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | (1) | (2) | (3) | (4) | (5) |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
| First-Generation | -0.112\*\* | -0.076\* | -0.121\*\* | -0.103\*\* | -0.051+ |
|  | (0.038) | (0.038) | (0.032) | (0.031) | (0.028) |
|  |  |  |  |  |  |
| Observations | 2,393 | 2,299 | 2,393 | 2,299 | 2,188 |
| Adjusted R2 | 0.004 | 0.038 | 0.334 | 0.359 | 0.479 |
| Prior Achievement Covariate | N | Y | N | Y | Y |
| Course Grade Covariate | N | N | N | N | Y |
| Classroom Fixed Effect | N | N | Y | Y | Y |

Robust standard errors clustered at the classroom level in parentheses

\*\* p<0.01, \* p<0.05, + p<0.1

First-Generation is an indicator for whether the student is the first in his or her family to attend college (the comparison group is continuing-generation students who had at least one parent who attended college)

## Table S6A. Student Anticipated Perceptions of the ISR by Race (Beginning of Semester).

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | (1) | (2) | (3) | (4) | (5) |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
| At-Risk Minority | -0.067\* | -0.061+ | -0.045 | -0.046 | -0.037 |
|  | (0.033) | (0.035) | (0.029) | (0.031) | (0.032) |
|  |  |  |  |  |  |
| Observations | 2,130 | 2,018 | 2,130 | 2,018 | 1,930 |
| Adjusted R2 | 0.002 | 0.002 | 0.152 | 0.153 | 0.143 |
| Prior Achievement Covariate | N | Y | N | Y | Y |
| Course Grade Covariate | N | N | N | N | Y |
| Classroom Fixed Effect | N | N | Y | Y | Y |

Robust standard errors clustered at the classroom level in parentheses

\*\* p<0.01, \* p<0.05, + p<0.1

At-Risk Minority is an indicator for whether the student identifies as Black or Hispanic/Latinx (the comparison group is White students)

## Table S6B. Student Perceptions of the ISR by Race (End-of-Semester).

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | (1) | (2) | (3) | (4) | (5) |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
| At-Risk Minority | -0.035 | -0.031 | -0.003 | -0.016 | 0.023 |
|  | (0.060) | (0.058) | (0.045) | (0.045) | (0.045) |
|  |  |  |  |  |  |
| Observations | 1,586 | 1,536 | 1,586 | 1,536 | 1,477 |
| Adjusted R2 | -0.000 | 0.003 | 0.283 | 0.282 | 0.308 |
| Prior Achievement Covariate | N | Y | N | Y | Y |
| Course Grade Covariate | N | N | N | N | Y |
| Classroom Fixed Effect | N | N | Y | Y | Y |

Robust standard errors clustered at the classroom level in parentheses

\*\* p<0.01, \* p<0.05, + p<0.1

At-Risk Minority is an indicator for whether the student identifies as Black or Hispanic/Latinx (the comparison group is White students)

## Table S6C. Instructor Perceptions of the ISR by Race

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | (1) | (2) | (3) | (4) | (5) |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
| At-Risk Minority | -0.181\*\* | -0.135\*\* | -0.167\*\* | -0.133\*\* | -0.069+ |
|  | (0.049) | (0.049) | (0.037) | (0.037) | (0.036) |
|  |  |  |  |  |  |
| Observations | 1,857 | 1,790 | 1,857 | 1,790 | 1,708 |
| Adjusted R2 | 0.009 | 0.040 | 0.341 | 0.363 | 0.490 |
| Prior Achievement Covariate | N | Y | N | Y | Y |
| Course Grade Covariate | N | N | N | N | Y |
| Classroom Fixed Effect | N | N | Y | Y | Y |

Robust standard errors clustered at the classroom level in parentheses

\*\* p<0.01, \* p<0.05, + p<0.1

At-Risk Minority is an indicator for whether the student identifies as Black or Hispanic/Latinx (the comparison group is White students)