

Learning Strategies in High School and First Year in College

Background

Due to the different academic demands on students between high school and college, high school students transitioning to college often experience unanticipated academic difficulty. One consistent factor for academic success in high school and college is an effective use of learning strategies. However, given the varying academic demands, it is not clear how consistently students engage in the effective use of learning strategies across these two environments. The stability of these learning strategies across these two domains is relatively unknown.

The research questions for this study are:

- 1) Does the use of learning strategies change from high school to the first year in college?
- 2) Do individual students change their learning strategy use after entering college?
- 3) Is an institution's academic environment associated with individual students' learning strategy use?

Measures

We investigated three learning strategies:

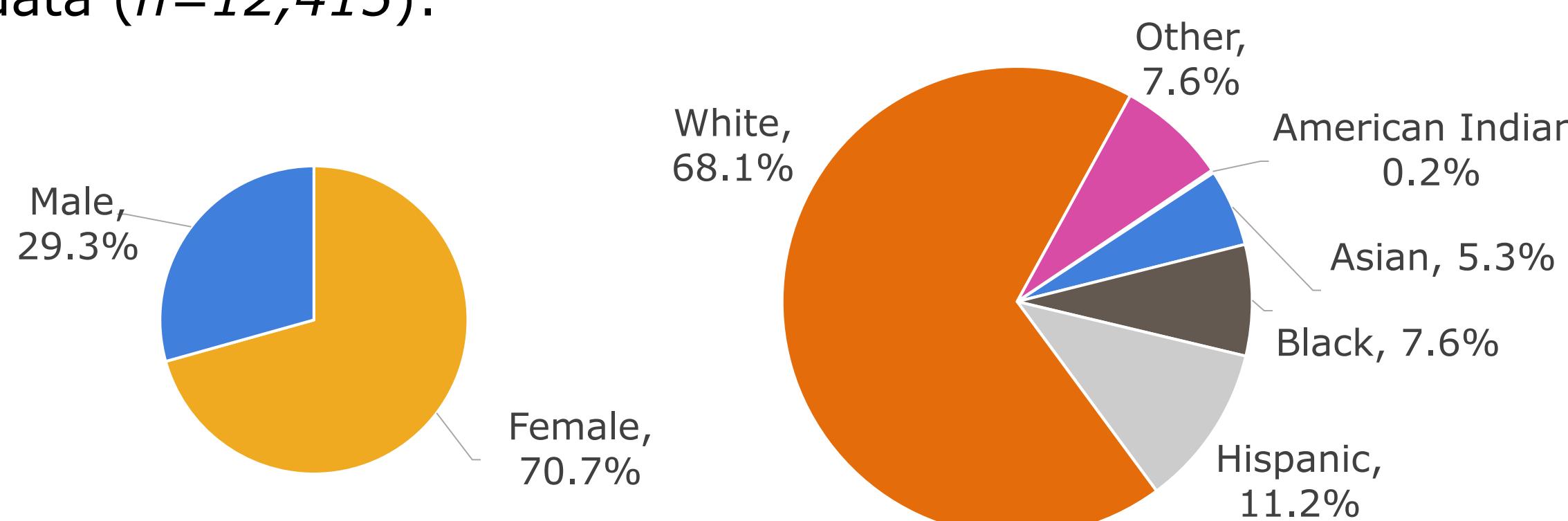
- Identified key information from reading assignments;
- Reviewed notes after class;
- Summarized what have learned in class or from course materials

An institution's academic environment was represented by:

- 1) To what extent have students' courses challenged them to do their best work?
- 2) An institution's average of the students' high school learning strategy use.

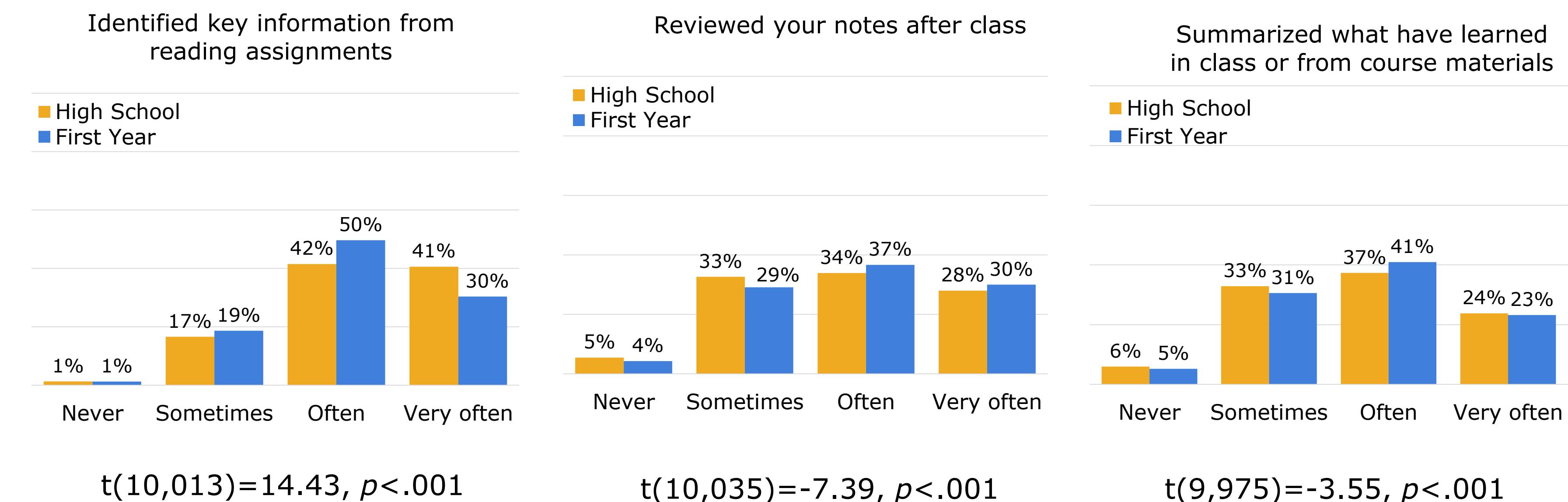
Data

We utilized the combined dataset of Beginning Survey of Student Engagement 2016 and National Survey of Student Engagement 2017 from 85 U.S. four-year institutions. Of the data ($n=12,415$):



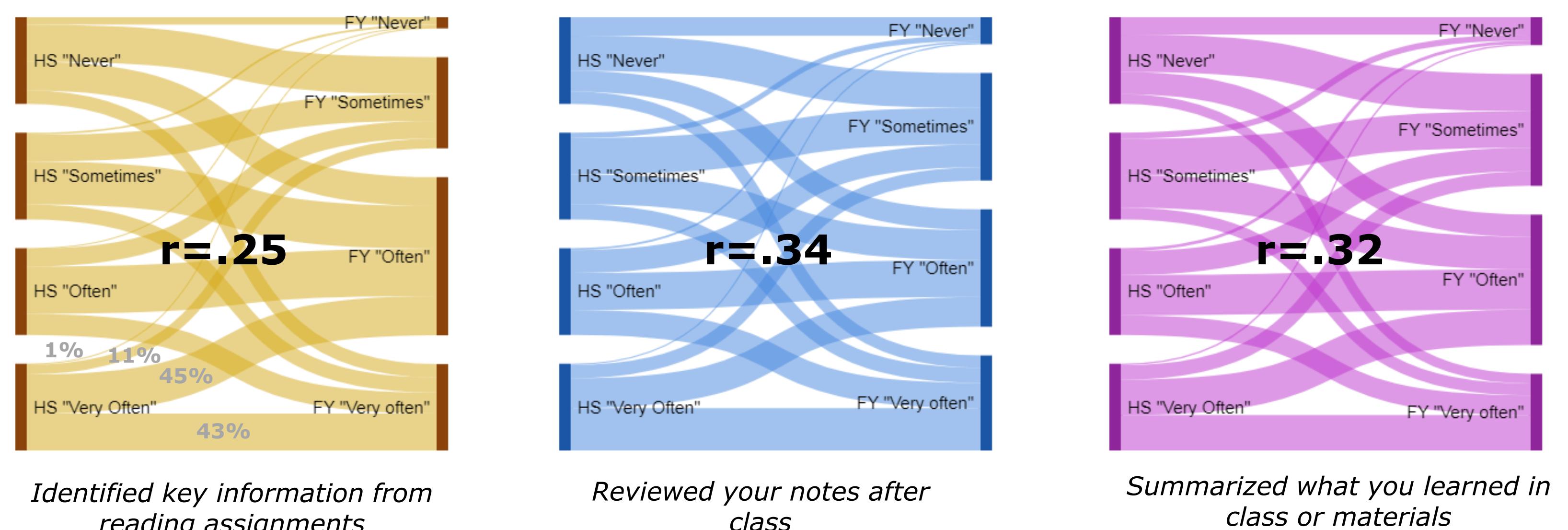
Results

Does the use of learning strategies change from high school to the first year in college?



The paired t-test showed, for all the three learning strategies, the difference between high school and the first year of college was statistically significant ($p<.001$). Yet, as the histograms revealed, most differences between high school and first-year frequencies were trivial.

Do individual students change their learning strategy use after entering college?



When looking at the individual level, a considerable number of students changed their learning strategies between high school and their first year. For example, high school students who indicated "Very Often" to "Identified key information from reading assignments" in high school, 43% also indicated "Very Often" to this same strategy in college, 45% "Often", and only 11% and 1% indicating "Sometimes" or "Never".

Is an institution's academic environment associated with individual students' learning strategy use?

We created the factor scores of learning strategy use in high school and the first year in college and then ran an OLS regression to test the association of learning strategy use and an institution's academic environment.

Dependent Variable ^a	OLS Std. Reg. Coef.	Effect Size
Individual student's FY engagement in learning strategies		
Individual student's high sch. engagement in learning strategies ^b	0.38 ***	0.164
Institution's average high sch. engagement in learning strategies	0.05 ***	0.003
Institution's average academic challenge	0.06 ***	0.003

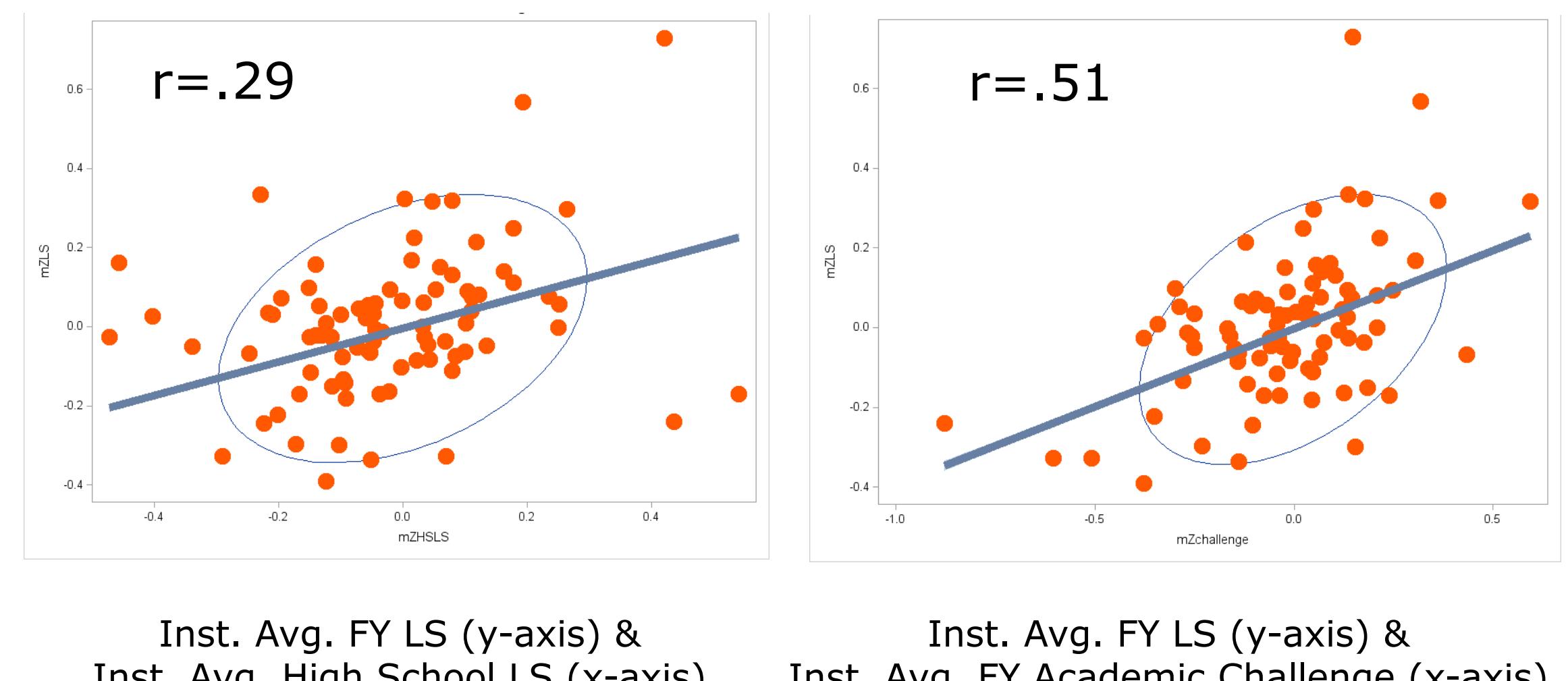
a. The OLS regression controlled individual students' background and enrollment characteristics and an institution's control, Carnegie classification, and selectivity;
b. Individual student's high school engagement in learning strategies was institutional mean centered;
*** $p < .001$

Results (cont.)

The results of OLS regression showed:

- For one SD increase in individual student's high school learning strategy use, individual student's engagement in learning strategies will increase by 0.38 SD in the first year of college ($p < .001$).
- If an institution's students' average high school learning strategies increases by one SD, the individual student's engagement in learning strategies will increase by 0.05 ($p < .001$).
- When an institution's student self-reported academic challenge increases by one SD, the individual student's engagement in learning strategies in the first year will increase by 0.06 ($p < .001$).

Do a variety of higher education institutions perform differently in promoting learning strategy use?



- The associations of first-year learning strategy use, high school learning strategy use, and academic challenge at the institutional level were statistically significant and positive ($r=.51$).
- In general, the larger an institution's average high school learning strategy use, the larger the institution's first year learning strategy use. So was the case for an institution's average high school learning strategy use and its academic challenge.
- An institution's first-year learning strategy use had a stronger association with its academic challenge than that with high school strategy use.

Discussion

- 1) Past learning strategy behaviors are not a perfect predictor of future learning strategies, though many students are fairly consistent.
- 2) An institution's academic environment may have a positive impact on students' learning strategy use through its student population's habitual learning strategy use formed before college. Yet, this association varies evidently among institutions.
- 3) We also found that higher education institutions can promote the use of learning strategies by challenging students to do their best in their courses.

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