ently designed and more problem-centered for students. Each faculty member taught two class groups of the same course in the spring 2015 term; one group would receive the intervention of two revised assignments, and the other would receive unrevised versions of the two assignments. Most of the courses were introductory-level courses containing first-year students; twelve were intermediate-level courses. Class sizes ranged from nine to seventy-four students, with an average class enrollment of about twenty-nine students. Faculty who implemented the two revised assignments agreed to adopt the Transparent Assignment Template to frame conversations with students about the purposes, tasks, and criteria for each revised assignment, before students began working (fig. 1).

At the end of term, sixty-one of the seventy courses completed the experiment. However, many teachers struggled to keep the intervention cleanly out of their control courses after seeing students respond positively in their intervention courses. Others found it difficult to limit the intervention to only two assignments. All 1,800 students were invited to respond to questions about their learning experiences on the end-of-term Transparency in Learning and Teaching Survey online. Sixty-eight percent of students responded to the survey, with 1,174 students or 65.2 percent completing all the survey questions. Historically underserved students in this group exceeded the three-hundred-fifty-person sample size recommended by What Works Clearinghouse (WWC) standards (US Department of Education 2014). The survey was completed by 425 first-generation students, 402 non-white students, and 479 low-income students. In addition, 297 multiracial students completed the survey.

RESULTS
The results of our project suggest that faculty can contribute to increasing all students’ success, especially that of underserved students, in their first year of college (when the greatest number of students drop out) (Head and Hosteller 2015). In courses where students perceived more transparency as a result of receiving the transparently designed, problem-centered take-home assignments, they experienced significantly greater learning benefits compared with their classmates who perceived less transparency around assignments in a course. Specifically, students who received more transparency reported gains in three areas that are important predictors of students’ success: academic confidence, sense of belonging, and mastery of the skills that employers value most when hiring. These are “substantively important” and statistically significant findings that satisfy WWC standards for baseline equivalence measures of 0.05 or below, sample sizes above three hundred fifty, and effect size differences above 0.25 (US Department of Education March 2014).

The discussion that follows includes data from all 1,174 students who completed the survey in all sixty-one courses that completed the experiment. In a constrained sample of thirty-nine courses where the intervention was implemented twice as planned, 262 students who received the intervention in eighteen courses experienced significantly increased academic confidence and sense of belonging (with a magnitude of ES=0.30 and ES=0.32 respectively) compared with 396 students in twenty-one control group courses who received the instructors’ unedited assignments. Instead of limiting our analysis to this subset, we discuss the full sample to offer a realistic indicator of what teachers and institutions can expect in practice when courses provide greater or lesser amounts of transparency for students around the purposes, tasks, and criteria for their academic work.

The benefits for all students in the full sample who received greater transparency were statistically significant (p<.05) and substantively important (fig. 2).

For first-generation, low-income, and underrepresented students, those benefits were larger. First-generation students and multi-racial students experienced medium-to-large effect size differences in the three domains that are critical predictors of students’ success: academic confidence, belongingness, and mastery of the skills that employers value (figs. 3 and 4).

A baseline equivalence test indicated that, prior to the intervention, groups who would receive more and less transparent instruction did not differ significantly (fig. 5).

The single largest underrepresented ethnicity group of students in our study was multiracial, with 237 students self-identifying in this category. Students who self-identified as belonging to a single underrepresented (non-white) ethnicity and students of low socioeconomic status (low-income, bottom income quartile) reported statistically significant, somewhat smaller benefits in the same three areas (figs. 6 and 7).

What was it about the intervention that underserved students noticed and appreciated? In the more transparent courses, first-genera-