LASSO REPORT

Learning Assistant Alliance
A project of the University of Colorado-Boulder LA Model

contact@learningassistantalliance.org learningassistantalliance.org

LA Supported Student Outcomes (LASSO) Study

Assessment:	CLASS-PHYS	N (course) = 129
Institution:	Example University	N (pre) = 118
Course:	PHYS 1000 001	N (post) = 115
Instructor:	firstName lastName	N (matched) = 111
Semester:	Fall 2015	

①

②

Unfavorable		Favorable	
Pre	Post	Pre	Post

③

④ Overall — 18 – 24 ; 45 → 60

⑤ All Categories — 17 – 23 ; 45 → 63

⑥ Personal Interest — 19 ← 28 ; 42 → 59

⑦ Real World Connection — 11 / 15 ; 58 → 74

⑧ PS General — 12 ← 21 ; 50 → 68

⑨ PS Confidence — 8 ← 19 ; 57 → 77

⑩ PS Sophistication — 21 ← 32 ; 29 → 53

⑪ SensesMaking/Effort — 11 / 13 ; 59 → 71

⑫ Conceptual Understanding — 20 / 24 ; 37 → 59

⑬ Applied Conceptual Understanding — 25 – 30 ; 29 → 50

0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%
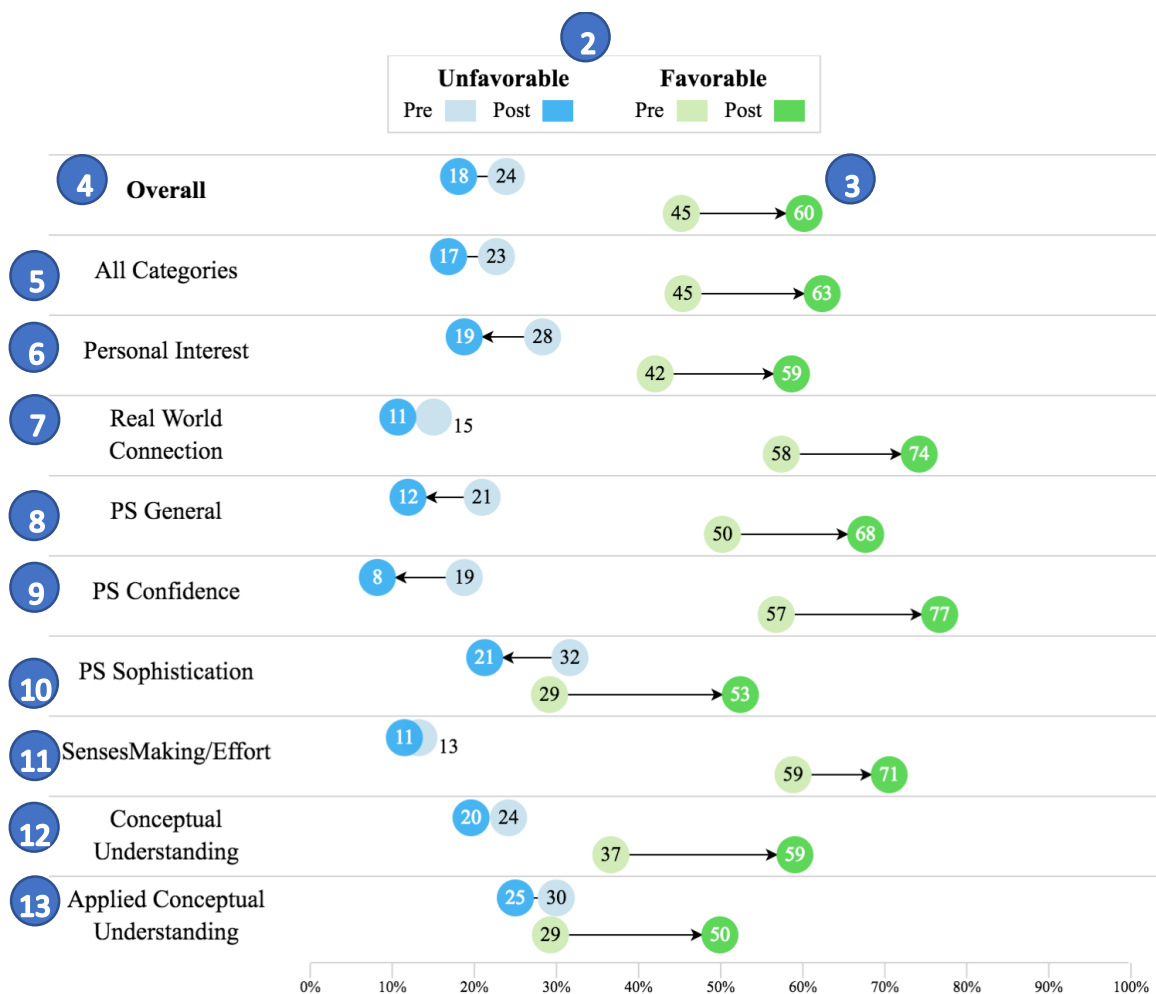
⑭ *Data for the analysis was cleaned by removing student assessments where less than 80% of the questions were answered and/or did not correctly answer the filter question (Q-31).*

Interpreting your LASSO report

1. N: The total number of students that provided matched data. The analysis is limited to the matched data. If less than half of the students provided matched data, then the results may be skewed.
2. The CLASS uses a five-point Likert scale with responses of strongly disagree, disagree, neutral, agree, and strongly agree. Each question is coded according to whether or not it is an attitude that experts agree with. The data is reduced to a three-point scale of favorable, neutral, and unfavorable. Each category of student beliefs and the total scores has a score for both the percent of favorable responses and the percent of unfavorable responses.
3. The plot is known as a barbell plot because the pretest and posttest are linked by an arrow indicating the direction of the change. The color also indicates the direction of the change with the pretest being a lighter hue.
4. The physics CLASS consists of 42 questions. One of these questions (31) is a filter question. Of the other 41 questions, 5 do not meet the validity and reliability arguments of the instrument developers. This leaves 36 questions that are used to produce the overall score.
5. All categories is the cumulative score for the 27 questions that are used to calculate one of the 8 categories.

    6-13.
    Each of the categories may provide instructors with some information about how their instruction is impacting their students.

14. Criteria for removing students from the analysis for this report. Note that all of the responses are still available in the data download.

National level data, effect sizes and learning gains

On the next page are two plots of pretest and posttest mean favorable attitudes for 27 physics courses drawn from the LASSO database and 37 physics courses from the literature. Figure 1 shows the pretest and posttest favorable scores for the CLASS in those courses. Figure 2 shows the distribution of effect sizes for the shifts in both favorable attitudes and unfavorable attitudes for the 27 courses in the LASSO database.

In the future, we hope to develop these plots for all of the instruments hosted on LASSO and to integrate them into the LASSO reports.
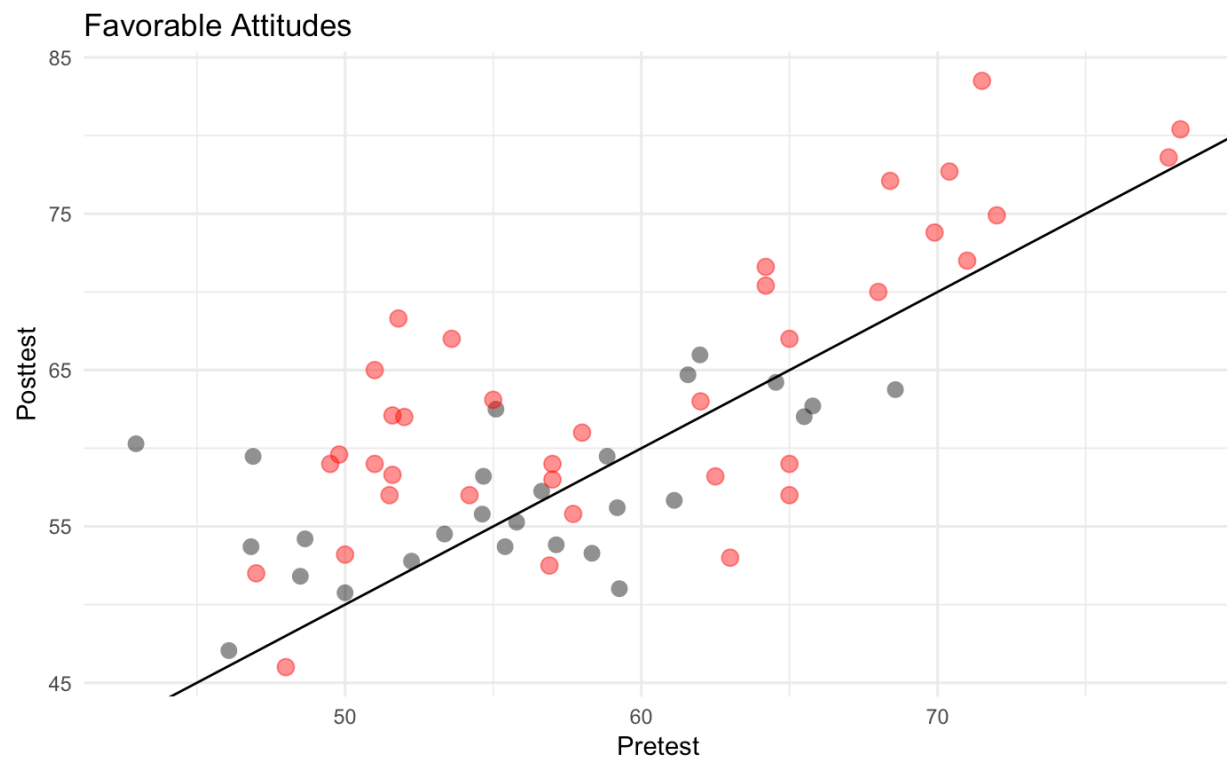
Figure 1. Pretest and posttest percent favorable responses for courses in LASSO (black) and in the literature (red). The black line represents equal pre- and posttest scores. Above the black line are courses where attitudes increased. Below the black line are courses where attitudes decreased.