

How do students change over four years of college?

The following data are from 2,200 students at 17 four-year colleges and universities in the **2006 cohort** of the Wabash National Study. Students completed an array of surveys and tests at three points during their college education—when they first arrived on campus, at the end of their first year, and at the end of their fourth year.

On average, students increased only a small amount or even declined on many of our measures. The following figures provide some detail on the degree of change for 12 of the outcome measures we used.

Figure 1. Four-year student change measured in standard deviations for moral reasoning, critical thinking, socially responsible leadership, and need for cognition.

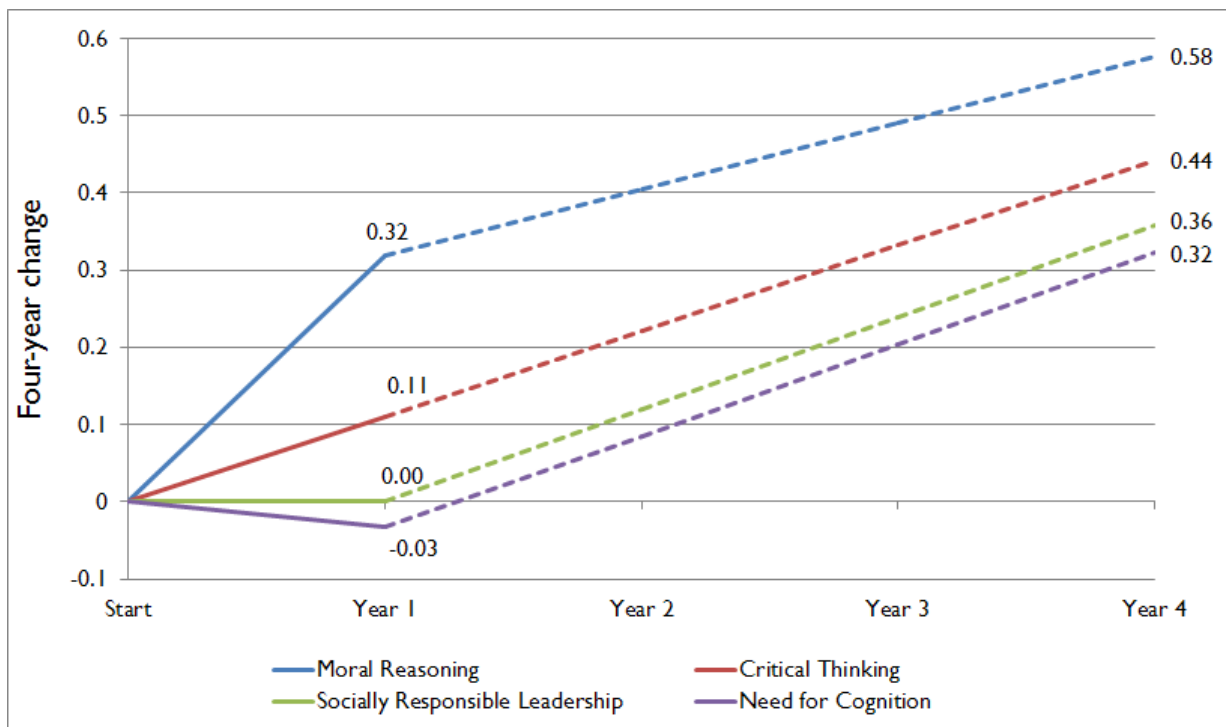


Figure 2. Four-year student change measured in standard deviations for **psychological well-being, universality-diversity awareness, political and social involvement, and openness to diversity and challenge.**

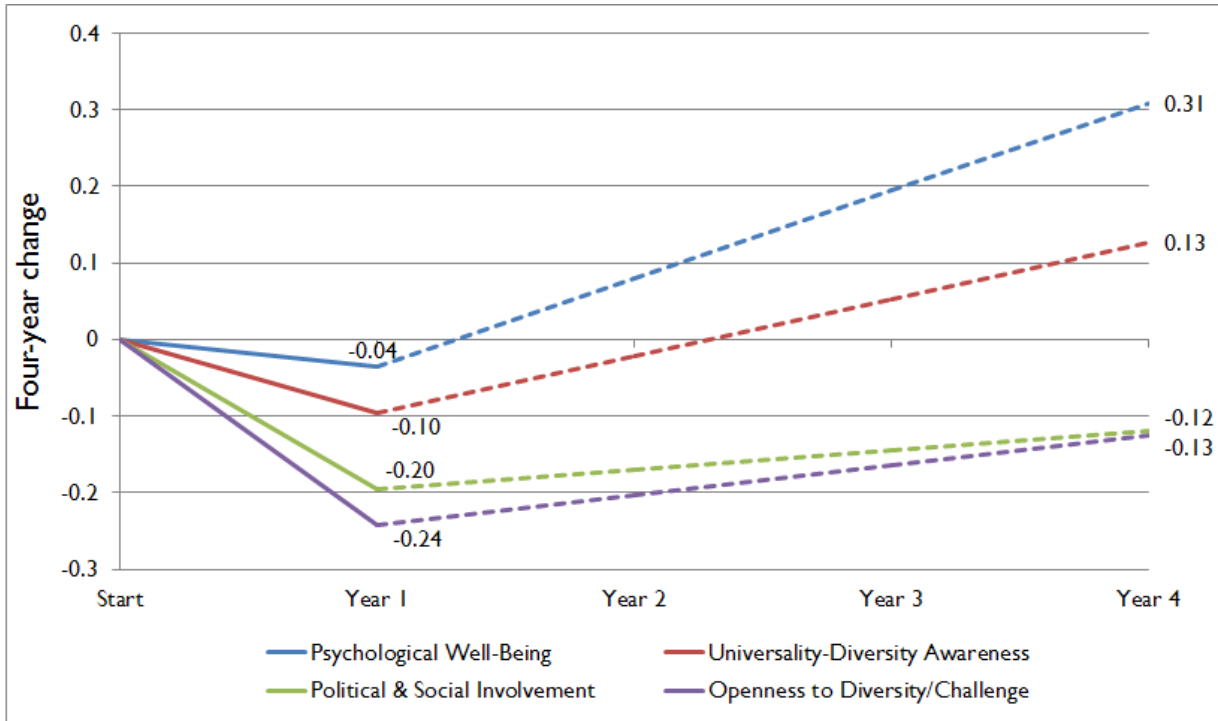
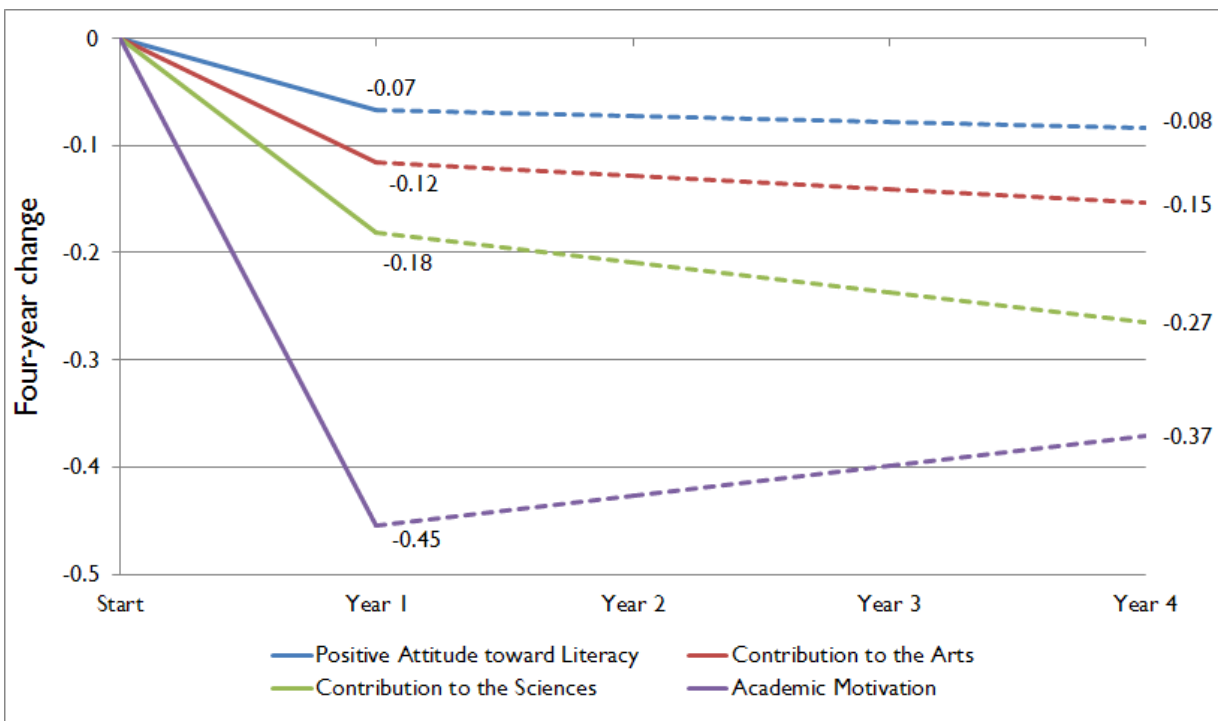
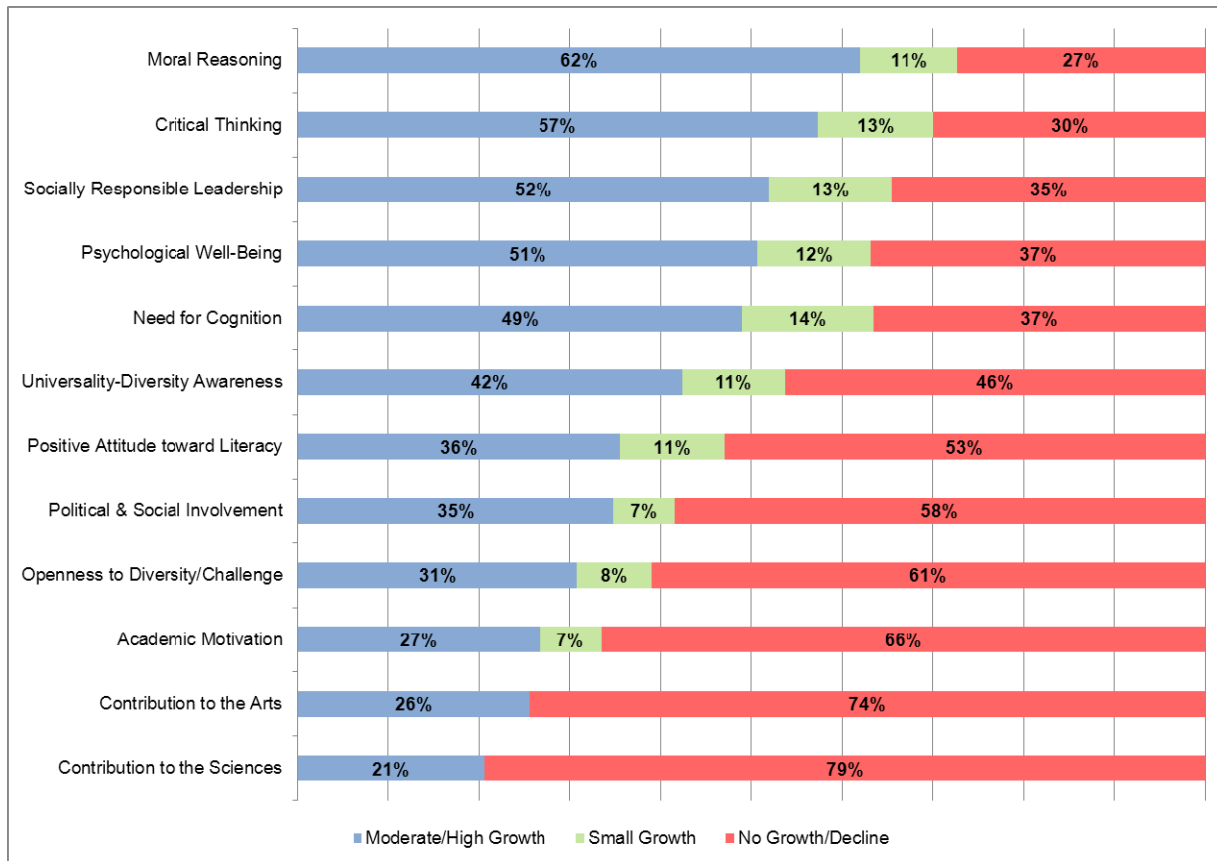


Figure 3. Four-year student change measured in standard deviations for **positive attitude toward literacy, contribution to the arts, contribution to the sciences, and academic motivation.**



Although these changes are small, and often in the wrong direction, these data report only the averages and do not capture the range of student change within each institution. There are groups of students at every institution who have been positively transformed by their educational experience, as there are students who are intellectually worse off than when they started. The figure below captures the range of variation in growth, stasis, and decline for students at all 17 four-year institutions in the 2006 cohort of the study.

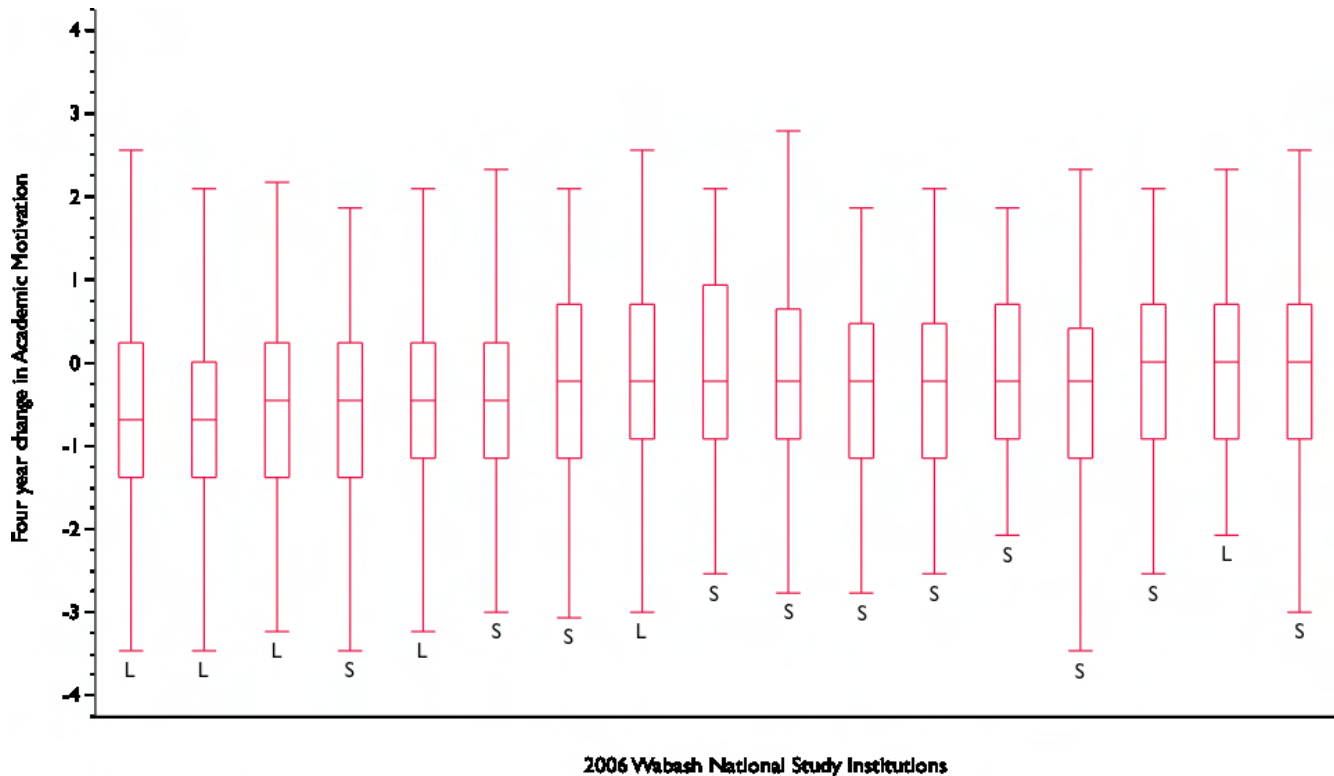
Figure 4. Proportion of students who showed moderate to high growth, small growth, or no growth/decline on Wabash National Study outcome measures over four years of college.



Moderate/High Growth = outcomes change of 0.3 standard deviations or more
 Small Growth = outcomes change between 0.05 and 0.3 standard deviations
 No Growth/Decline = outcomes change of 0.05 standard deviations or less

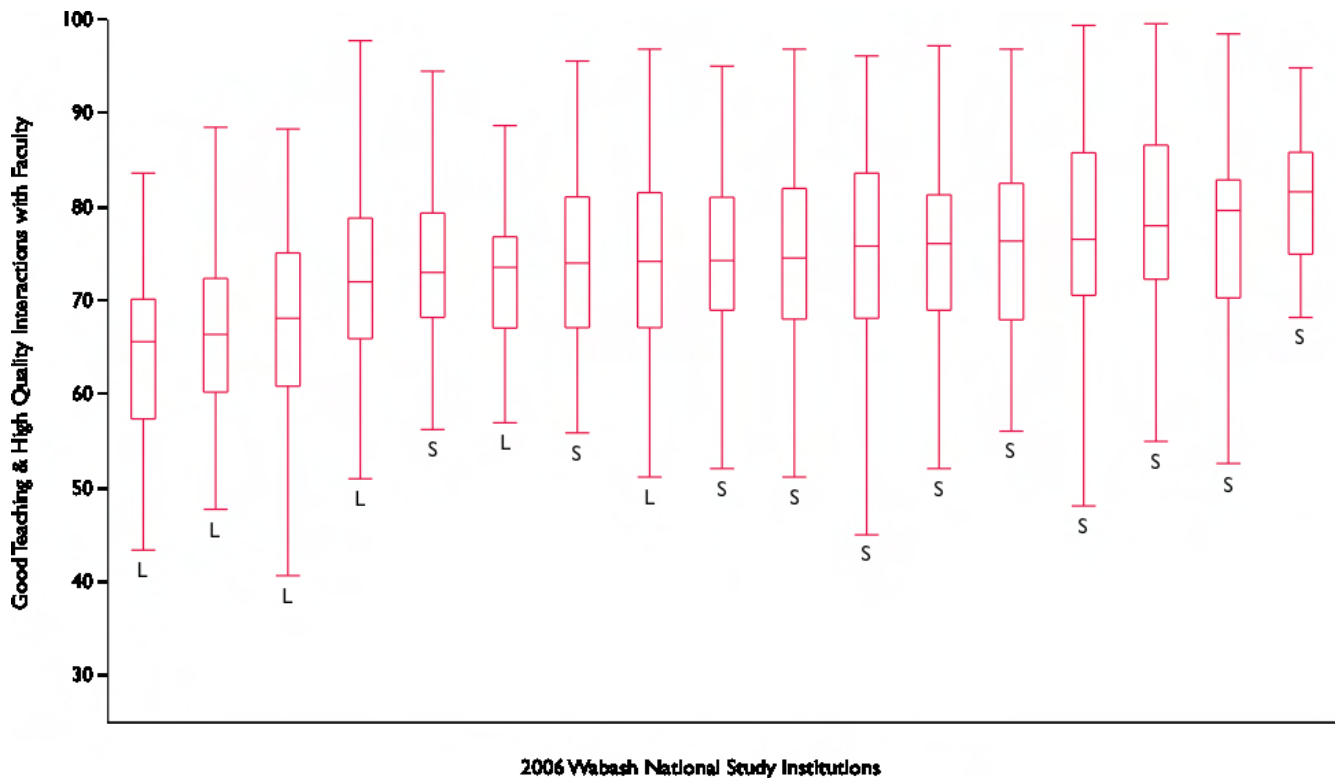
Furthermore, the variability within our institutions—in terms of both growth on the outcomes and the level of good practices and conditions experienced by students—is much greater than the variability between institutions on these same measures. For example, in Figure 5 below, the median change for institutions in academic motivation is -0.25 to -0.75 standard deviations. However, there are students at every institution whose academic motivation increased by over two standard deviations. Unfortunately, there are also students at every institution for whom academic motivation declined by over two standard deviations.

Figure 5. Box plots of the within-institution variation for small colleges (S) and large universities (L) in four-year student change (in standard deviations) in **academic motivation**.



Similarly, the range within institutions in the extent to which students report experiencing good practices vastly exceeds the differences between institutions (Figure 6 below). Although students at small liberal arts colleges report experiencing higher levels of good teaching and high-quality interactions with faculty, there are students at larger institutions who report experiencing very high levels of these good practices, and at the same time there are students at small liberal arts colleges who report levels substantially lower than the typical level experienced by students at large institutions.

Figure 6. Box plots of the within-institution variation for small colleges (S) and large universities (L) in the level of good teaching and high-quality interactions with faculty (scores from 0-100).



There are students at every institution in the Wabash Study who are having experiences as good as those of the best students at any other institution. The opposite is also true. Even if a school has greater average growth on critical thinking or some other outcome than its peer institutions, it is likely that many of its students will not have grown or may even have declined on these outcomes.

The measures we are using in the Wabash Study are neither the best nor the most comprehensive measures of how much students are learning in college. Every attempt to measure the complexity of what and how students learn, including the methods we have used in this study, is limited. For example, we are certainly not in any way assessing the extent to which students have mastered the content of the arts and sciences or developed professional skills. Nonetheless, it would be unwise to dismiss out of hand the evidence from the Wabash Study and other research (e.g., Arum and Roksa, 2011) indicating that for many students the impact of college falls short of what it should be.

For more detail on the evidence from the Wabash Study, and the challenges that institutions face in using assessment data, please see [From Gathering to Using Assessment Results: Lessons from the Wabash National Study](http://www.learningoutcomeassessment.org/documents/Wabash_000.pdf). (http://www.learningoutcomeassessment.org/documents/Wabash_000.pdf)

Arum, R., & Roksa, J. (2011). *Academically adrift: Limited learning on college campuses*. Chicago: Chicago University Press.