CLA+ Longitudinal Study Results for Illinois College

Illinois College administered the Collegiate Learning Assessment+ (CLA+) to its first-year students and seniors to measure their abilities in the areas of analysis, problem solving, analytic writing, scientific and quantitative reasoning, critical reading, and the ability to critique an argument. Using IC's CLA+ results, the Council for Aid to Education (CAE) conducted a longitudinal study on IC's fall 2017 entering first-year students to estimate their growth in these important areas, via a pre-test/post-test model. The same students who were tested during Welcome Week in the fall of 2017 were tested again during the 2020-21 academic year.

Despite a smaller sample size than in the past, our students' gains from fall of 2017 to spring of 2021 were statistically significant in most areas assessed. The sample was representative across broad disciplinary categories but was disproportionately female. The CAE researchers summarized IC's results shown in Table 1, below, as follows:

"Illinois College students graduating in spring of 2021 showed significant growth in their CLA+ scores from their freshman year." The researchers noted that there was a "moderate degree of growth on their total CLA+ scores as well as on their total Performance Task (PT) scores," and that students demonstrated more modest gains on their total Selected-Response Question scores.

Table 1: Statistical Significance of Changes in Mean CLA+ Total and Section Scores

	Mean Diff. (Test 2-Test 1)	*df*	*t*	*p*	Cohen's *d*
Total Scores	58	46	-3.41	.001	.47
PT Scores	69	46	-2.827	.007	.48
SRQ Scores	48	46	-2.039	.047	.30

As shown in Table 2, based on a comparison of Performance Task subscores from test one and test two, it appears that IC students showed the most growth in skill areas related to analysis and problem solving, with significant growth also occurring in the areas of writing effectiveness and writing mechanics. CAE researchers concluded that "[IC's] results suggest that students significantly improved on a number of their critical-thinking and written-communication skills from levels seen in their freshman year." The tested aspects of analytical thinking included students' ability to analyze and synthesize disparate pieces of information, assert a logical decision or conclusion, and to support the decision or conclusion with appropriate information from provided documents. The tested aspects of written communication included students' facility with the conventions of standard written English and their ability to present solutions in an organized, grammatically correct form.

Table 2: Statistical Significance of CLA+ Subscores

	Mean Diff. (Test 2-Test 1)	*df*	*t*	*p*	Cohen's *d*
PT: Analysis and Problem Solving	0.4	46	-3.58	0.001	.45
PT: Writing Effectiveness	0.2	46	-1.85	0.070	.32
PT: Writing Mechanics	0.2	46	-2.20	0.033	.35

As shown in Table 3, in the domain of scientific and quantitative reasoning CAE also reported gains of a significant magnitude. Tested aspects of scientific and quantitative reasoning focus on data literacy, which involves students' ability to make reasonable inferences from data (taking into account such factors as the influence of outliers and sample size), their ability to detect questionable assumptions (such as implying causation from correlation), and their ability to evaluate the adequacy of an experimental design or data collection methodology. The difference in mean scores from test one to test two were not statistically significant for the domains of critical reading and for critiquing an argument. Tested aspects of critical reading included students' ability to consider the author's purpose, understand the author's tone and persuasive elements, and to recognize bias. Tested aspects of critiquing an argument include identifying and describing logical flaws in an argument by referencing relevant reasons and examples, articulating complex ideas and examining claims and evidence.

Table 3: Statistical Significance of CLA+ Subscores

	Mean Diff. (Test 2-Test 1)	*df*	*t*	*p*	Cohen's *d*
SRQ: Scientific and Quantitative Reasoning	46	46	-3.12	0.003	.49
SRQ: Critical Reading and Evaluation	14	46	-1.09	0.280	.16
SRQ: Critique an Argument	-18	46	1.16	0.252	.19