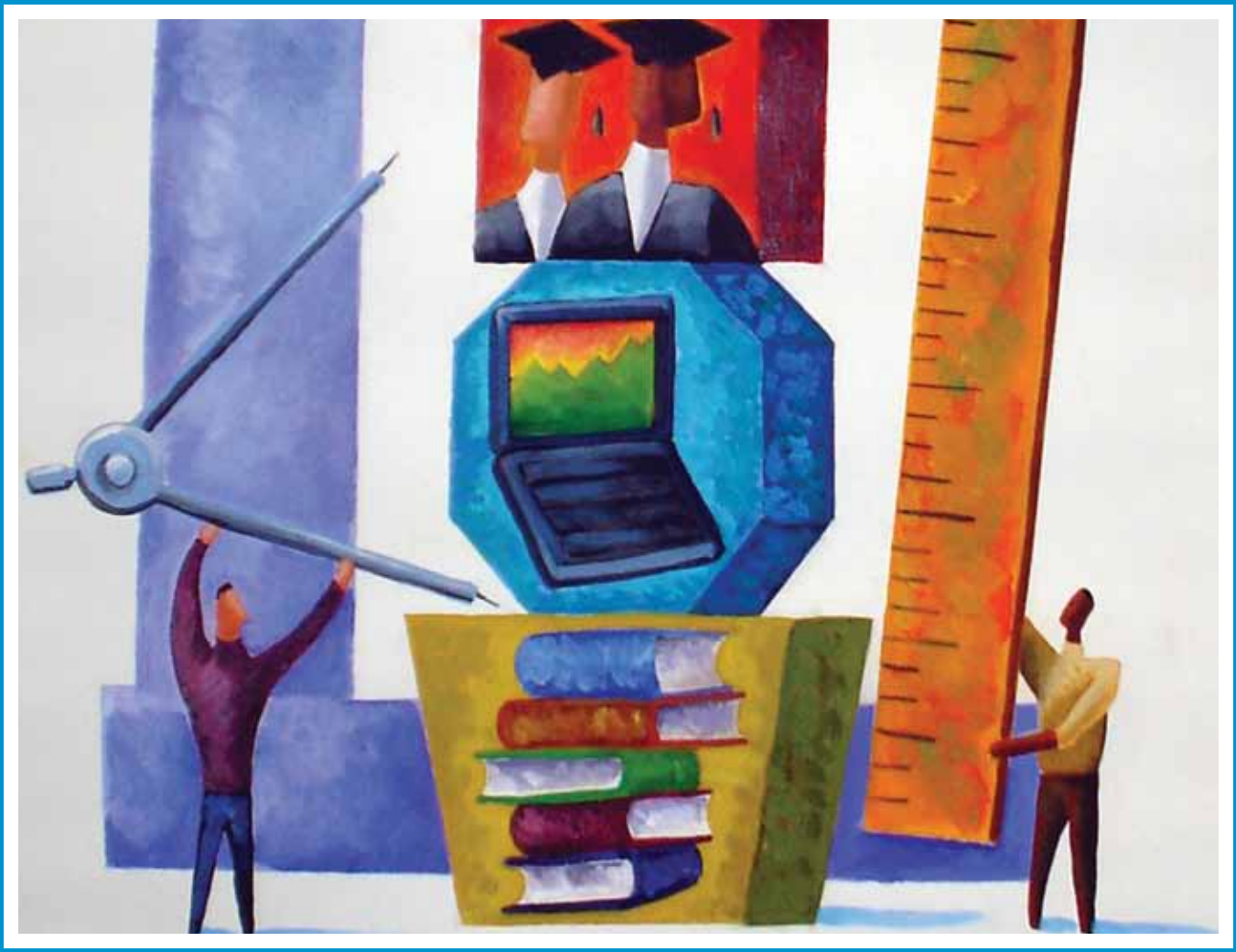
THE COUNCIL OF INDEPENDENT COLLEGES

An Analysis of Learning Outcomes of Underrepresented Students at Urban Institutions



Report prepared for the Council of Independent Colleges

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The Council of Independent Colleges is grateful to the
Carnegie Corporation of New York for its support of this project.

The Council of Independent Colleges (CIC) is an association of 640 nonprofit independent colleges and universities and 90 higher education organizations that has worked since 1956 to support college and university leadership, advance institutional excellence, and enhance public understanding of private higher education's contributions to society. CIC is the major national organization that focuses on providing services to leaders of independent colleges and universities as well as conferences, seminars, and other programs that help institutions to improve the quality of education, administrative and financial performance, and institutional visibility. CIC also provides support to state fundraising associations that organize programs and generate contributions for private colleges and universities. The Council is headquartered at One Dupont Circle in Washington, DC.

About the Author

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Executive Summary

The Council of Independent Colleges (CIC) has long been concerned about the educational success of students, particularly underrepresented groups of students. As part of its Creating Pathways to Educational and Economic Opportunity in Urban Colleges and Universities project (the Pathways Project), CIC organized 19 institutions, nine in urban and ten in non-urban areas, to explore students' performance on the Collegiate Learning Assessment (CLA). In addition to collecting data from a representative sample of students, participating institutions agreed to draw an in-depth sample of first-generation students (defined based on parental education) and low-income students (defined based on Pell-grant eligibility). The in-depth sample increased the sample size of underrepresented groups and thus allowed for more accurate estimates of their CLA performance. The data included in this report are cross-sectional, with institutions collecting information from samples of first-year students in fall 2010 and seniors in spring 2011.

The first portion of this report focuses on CLA performance of underrepresented groups of students. Though descriptive results reveal gaps in CLA performance between underrepresented groups and their more advantaged peers, those differences can be accounted for by student characteristics. Thus, after adjusting for student characteristics, particularly academic preparation, no notable gaps in CLA performance appear among different groups of students. More specifically:

- Descriptive results indicate that first-generation students perform less well on the CLA than non-first-generation students. These two groups of students differ along multiple dimensions, however. After students' individual-level characteristics are considered, particularly their academic preparation, there are no differences in CLA performance in either first or senior year between first-generation and non-first-generation students.

- Similarly, after adjusting for individual-level characteristics, there are no differences in CLA performance in either first or senior year between Pell-eligible and non-Pell-eligible students.

- Descriptive gaps in CLA performance by race/ethnicity are substantially larger than those by first-generation status and Pell-grant eligibility. African-American and Hispanic students score substantially lower on the CLA at entry into college than their white peers. Individual-level characteristics, and particularly academic preparation, however, explain gaps between African-American/Hispanic and white students. After adjusting for individual-level differences, there are no racial/ethnic gaps in CLA performance in either first or senior year.

- The same patterns are observed in both urban and non-urban settings: After adjusting for students' individual-level characteristics, there are no differences in CLA performance between examined groups of students in either urban or non-urban settings.

The second portion of the report focuses explicitly on CLA performance of both students and institutions in urban and non-urban settings. These analyses reveal several key findings:

- Student-level analyses reveal no difference in CLA performance in urban and non-urban settings, after adjusting for students' individual-level characteristics. One exception is the performance task of the CLA in the senior year, when students in urban contexts seem to perform less well than students in non-urban settings.

- Institutional value-added analyses confirm results obtained from individual-level models. On average, urban institutions have slightly lower value-added scores than non-urban institutions with respect to the performance task measure, but not with respect to other components of the CLA.

- Institutional value-added analyses also reveal large variation among institutions *within* both urban and non-urban contexts. There are institutions in each context that have positive and negative value-added scores. This variation *within* each setting by far overshadows any overall differences between urban and non-urban settings.

These findings have several notable implications:

- **The most important predictor of CLA performance is academic preparation.** After controlling for individual-level characteristics, particularly academic preparation, there are no differences in CLA performance among different groups of students. This finding holds in both urban and non-urban institutional settings. Therefore, this finding suggests that postsecondary institutions should work with local high schools to improve student preparation or influence broader state and national conversations to prepare high school students for college-level work.

- **Urban and non-urban institutions on average perform equally well on the CLA, and most of the variation is within specific institutional settings (i.e., urban and non-urban) as opposed to across them.** Urban and non-urban institutions do equally well in educating the students they enroll (as assessed by the CLA). They also do equally well in educating different groups of students, including students from underrepresented groups. Each setting, however, includes institutions with higher and lower value-added scores. Individual institutions, not broad categories such as urban and non-urban, thus present a more productive focus of analysis and policy development.

- **CLA performance varies more within institutions than across them. All institutions have students who perform at different levels, producing much more variation within institutions than across them.** Institutions would thus benefit from focusing within—studying carefully their own students and understanding what groups of students perform well and how their successes can be replicated, as well as what groups of students do not perform as well and the specific strategies that are needed to improve their outcomes.

Finally, this report could not have been written without the concerted effort of many institutions. Moreover, institutions cannot improve their outcomes without understanding the challenges and successes of their students. To better examine variation on student learning outcomes within an institution, additional assessment measures beyond those examined in this study will be needed. Investing in institutional infrastructure to collect high-quality assessment data is thus an important part of the puzzle of improving learning outcomes for all students.

I. Introduction

Background and Context

The Council of Independent Colleges (CIC), an association of more than 600 small and mid-sized independent colleges and universities, has long been a national leader in voluntary efforts to improve the quality of student learning and a strong advocate of institutional autonomy in accountability efforts. Since 2002, CIC has collaborated with the Council for Aid to Education (CAE) to develop and implement the Collegiate Learning Assessment (CLA), one of the first standardized instruments to measure directly an institution's contribution to student learning. In 2002, CIC helped CAE identify smaller private colleges to test the prototype of the CLA. In 2003, CIC recruited 12 member colleges and universities to form the CIC/CLA Consortium and participate in the first year of public use of the CLA. The following year, CIC expanded this initial Consortium to include 33 colleges and universities with a three-year commitment (2005–2008) to use the CLA. In its third phase, 47 CIC institutions collaborated in another three-year commitment (2008–2011). For the most recent report about the CIC/CLA Consortium, see *Catalyst for Change: The CIC/CLA Consortium (2011)* at *www.cic.edu/Catalyst-for-Change*.

In this study, CIC is concerned about the educational success of students who attend urban institutions. There is mounting evidence that it may be especially important to encourage urban independent colleges and universities to engage in serious assessment of student learning. A great many students, particularly low-income and minority students, are entering urban universities but never completing a degree. More than 40 percent of CIC member institutions are located in urban settings and serve predominantly urban students. In 2009, CIC was awarded a grant by the Carnegie Corporation of New York to build on the efforts of the CIC/CLA Consortium and gain insight into the factors that contribute to (or detract from) the academic achievement of students at urban institutions and share information on effective strategies. In this way, CIC intends to create new pathways to educational and economic opportunity for students who attend urban colleges and universities, many of whom are from historically underserved populations. Thus this program is officially titled Creating Pathways to Educational and Economic Opportunity in Urban Colleges and Universities (hereafter referred to as the Pathways Project). Ten additional CIC member colleges and universities joined 19 institutions that had previously participated in the CIC/CLA Consortium to form the Pathways Project (2009–2012).

As part of the Pathways Project, CIC arranged for the 19 institutions—nine in urban settings and ten in non-urban locales—that had previous experience in the CIC/CLA Consortium to participate in a study of the learning outcomes of underrepresented students. "Urban" was defined as a city with a population greater than 100,000 or a

large suburb located in close proximity to a major metropolitan area where the institution serves a high percentage of students from that metropolitan area. The key outcome of interest was students' performance on the CLA, a standardized assessment that aims to capture higher-order collegiate skills, including critical thinking, complex reasoning, and written communication. The CLA provides four different scores: performance task, make an argument, break an argument, and argument (which is the average of make an argument and break an argument scores). Throughout most of this report, results for all four CLA components are reported. In general, the patterns are consistent across measures, increasing confidence in the reported results.

Participating Institutions and Sampling

The 19 institutions that participated in this study agreed to administer the CLA to their first-year students and seniors in academic years 2010–2011 and 2011–2012. The assessment was given to approximately 100 first-year and 100 senior students, representative of the student population at each institution. The CLA was administered using a sampling method where roughly half of the students took the performance task components and the other half took the argument components of the CLA. To get reliable estimates of the performance of underrepresented students, institutions had to test additional students. Therefore, in addition to the representative student samples, these 19 institutions were also asked to draw an in-depth sample of first-generation and low-income first-year and senior students of up to 100 for each group to take the CLA in the academic year of 2010–2011.

This report analyzes the results from the 2010–2011 CLA administration at the 19 participating institutions. The data included in this report are cross-sectional, with institutions collecting information from samples of first-year students in fall 2010 and seniors in spring 2011. The study includes a representative sample of 2,645 first-year students and 1,999 seniors and an in-depth sample of 834 first-year students and 441 seniors who were first-generation and/or low-income students (see the Methodological Appendix for the number of students that participated at each institution). Most of the analyses presented are based on the full sample (i.e., the combined sample including students in both the representative sample and the in-depth sample). Differences between the two samples are discussed in the Methodological Appendix, as are definitions of all of the variables used in sampling and analysis. The final set of analyses examining institutional performance and value-added scores is based on the representative sample.

PARTICIPATING INSTITUTIONS

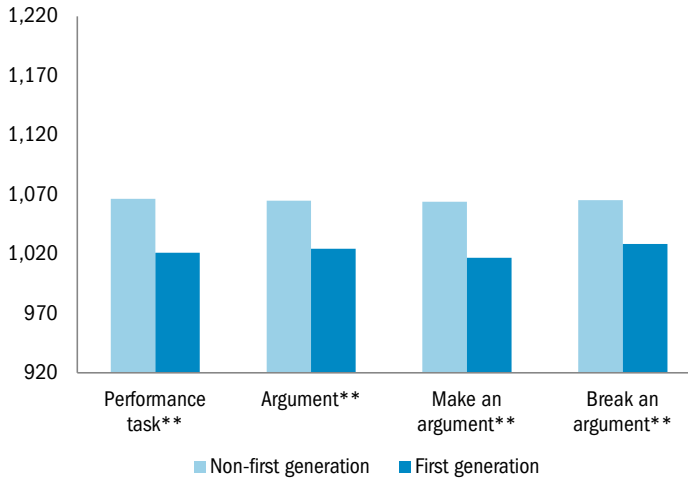
Institutions in Urban Areas
Alaska Pacific University
Bethel University (MN)
Cabrini College (PA)
Carlow University (PA)
Charleston Southern University (SC)
Dominican University (IL)
Notre Dame of Maryland University
Trinity Christian College (IL)
University of Charleston (WV)

Institutions in Non-Urban Areas
Barton College (NC)
College of Saint Benedict/
Saint John's University (MN)
Illinois College
Indiana Wesleyan University
Lynchburg College (VA)
Morningside College (IA)
Stonehill College (MA)
Texas Lutheran University
University of Great Falls (MT)
Westminster College (MO)

II. CLA Performance of Students by First-Generation Status

The report begins by examining variation in CLA performance between first-generation and non-first-generation students. "First-generation" is used to designate students whose parents did not complete college (for further information on this definition, please see the Methodological Appendix). Descriptive results in Figure 1a show that first-generation students enter higher education with lower levels of skills as measured by the CLA. More specifically, first-generation first-year students have lower performance on all components of the CLA compared to their non-first-generation peers.[1] All of the differences are statistically significant, but not of large magnitude *(see Table 1A in the appendix for effect size estimates)*.[2] First-generation seniors still score lower on the CLA than their non-first-generation peers, but the gaps among seniors are approximately half the size of those among first-year students *(see Figure 1b)*.

Figure 1a. First-Year CLA Scores, by First-Generation Status



*Note: **p<0.01, *p<0.05*

Based on these descriptive results, it may be tempting to conclude that the gaps in performance between first-generation and non-first-generation students decrease during their time in college. But that conclusion does not seem warranted. First-generation students tend to differ from non-first-generation students along multiple dimensions. Table 1 illustrates the difference in one important characteristic: pre-college academic performance. The results indicate that first-generation students have substantially lower pre-college academic performance than non-first-generation students (the gap is approximately half a standard deviation).

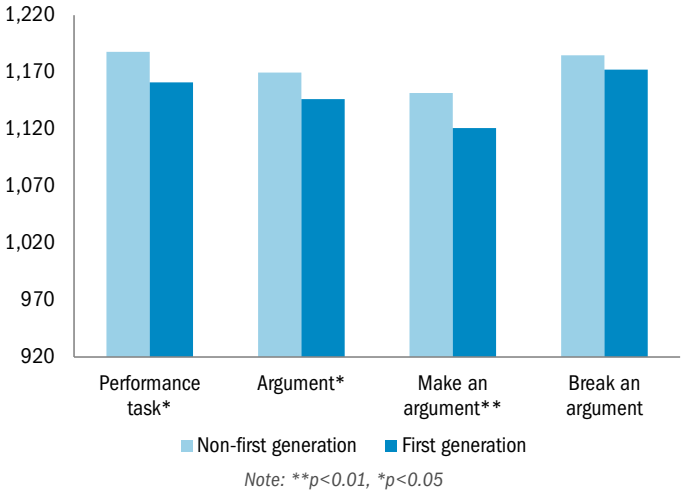
Moreover, since this report relies on cross-sectional data, the same students are not observed twice, raising the possibility that the senior sample differs from the first-year student sample. Results in Table 1 show a slight increase in pre-college academic performance between the first-year and senior samples in both urban and non-

[1] The y-axis range in Figures 1a and 1b (and all similar figures reporting average CLA scores) is approximately two standard deviations.

[2] Typically, the effect size up to 0.3 standard deviations would be regarded as small, around 0.5 as medium, and 0.8 and above as large. All of the differences between first-generation and non-first-generation students are at or below 0.3 standard deviations.

urban settings. Although the difference is not large, which is reassuring for the comparisons of CLA performance across the two samples, it does not preclude the possibility that the two samples differ along other dimensions, requiring caution when interpreting results based on a cross-sectional study design. Furthermore, the limitations of this study do not permit determining if the difference in academic performance between first-year and senior students is attributable to differential student enrollment patterns between the two classes, attrition from the first to the senior year, or response bias among seniors that took the CLA.

Figure 1b. Senior CLA scores, by First-Generation Status



*Note: **p<0.01, *p<0.05*

Given differences between first-generation and non-first-generation students in individual-level characteristics, it is important to adjust CLA estimates for those differences. Although no dataset includes variables describing all of the ways in which the two groups may differ, adjusting for observable characteristics available in the dataset is an important step in this process. This report includes regression analyses of different components of the CLA, controlling for students' sociodemographic characteristics (gender, race/ethnicity, parental education, and an indicator of English as a primary language) and pre-college academic preparation *(see Table 2A in the appendix for more details and alternative model specifications).*

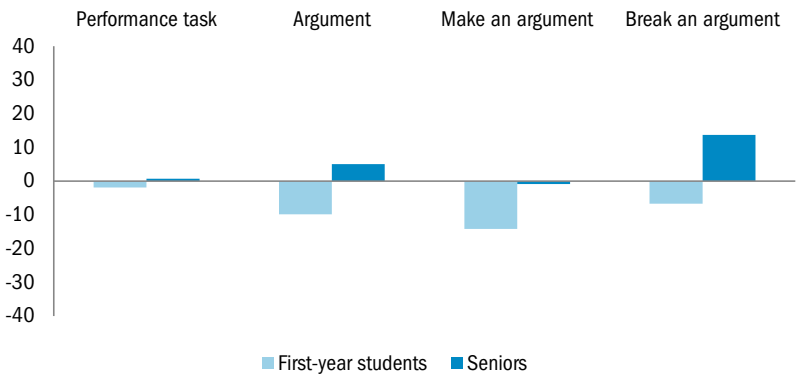
Table 1. Students' Pre-College Academic Performance, by First-Generation Status and Urbanicity

	Non-First-Generation	First-Generation	Difference
TOTAL			
First-year students	1,090.24	1,015.03	75.21
	(153.37)	(150.21)	
Seniors	1,105.78	1,037.51	68.27
	(160.12)	(152.49)	
NON-URBAN			
First-year students	1,106.69	1,032.31	74.38
	(156.17)	(155.58)	
Seniors	1,126.95	1,062.94	64.01
	(155.61)	(155.09)	
URBAN			
First-year students	1,064.54	996.18	68.36
	(145.32)	(141.83)	
Seniors	1,077.36	1,008.52	68.84
	(161.65)	(144.33)	

Note: This table includes means and standard deviations (in parentheses).

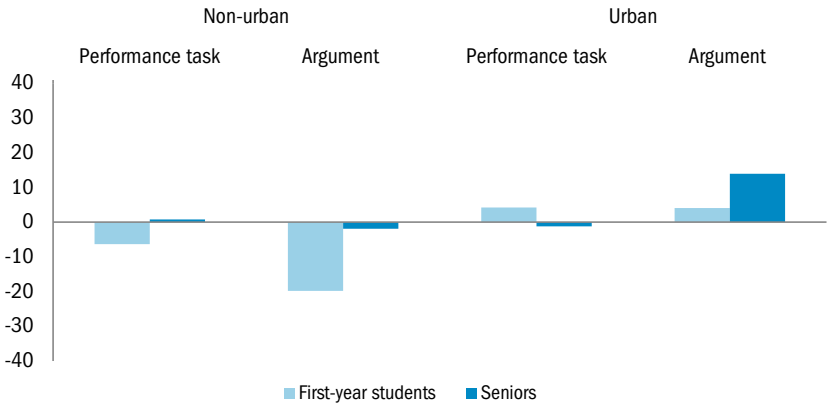
Figure 2, which displays the results graphically, shows no statistically significant gaps between first-generation and non-first-generation students in either first or senior year, after adjusting for individual-level differences.[3] The gaps between first-generation and non-first-generation students in Figure 2 are also of small magnitude, often just a fraction of the gaps observed in the descriptive data. Though there is some variation in the magnitude of the gaps across different components of the CLA, the overall pattern of no large or statistically significant difference between first-generation and non-first-generation students holds for all outcomes examined.

Figure 2. Gaps in CLA Performance between First-Generation and Non-First Generation Students, Controlling for Individual Characteristics



*Note: **p<0.01, *p<0.05 (None of the reported differences is statistically significant.)*

Figure 3. Gaps in CLA Performance between First-Generation and Non-First Generation Students by Urbanicity, Controlling for Individual Characteristics



*Note: **p<0.01, *p<0.05 (None of the reported differences is statistically significant.)*

Although the overall performance of first-generation students does not differ from that of their non-first-generation peers, net of controls, these averages may hide variation in performance across different geographical contexts. To consider this possibility, the report turns to examining CLA performance of first-generation and non-first-generation students in urban and non-urban settings. The descriptive results in Table 1 show that the gap in pre-college academic preparation between first-generation and non-first-generation students is similar across those two contexts. This would imply that the gap in CLA performance is likely to be similar in urban and non-urban settings. To evaluate this claim statistically, Table 3A in the appendix shows results from regression analyses estimating gaps in CLA performance between first-generation and non-first-generation students, after adjusting for pre-college academic preparation and sociodemographic characteristics. Figure 3 graphically illustrates selected findings.

[3] The y-axis range in Figure 2 (and all similar figures reporting gaps in CLA performance) is approximately 1/2 standard deviation.

Results from regression analyses reveal no statistically significant gaps in CLA performance between students from first-generation and non-first-generation backgrounds, net of controls. This pattern of no significant difference holds for both first-year students and seniors and in both urban and non-urban settings. There is one exception to this pattern, which is a statistically significant gap among first-year students in the "make an argument" component of the CLA *(see Table 3A in the appendix)*. Although statistically significant, that gap is small in magnitude. Thus, though there is some variability in results, which is to be expected given smaller sample sizes resulting from dividing students into categories based on both their first-generation status and urbanicity (the degree to which a location is urban), the overall pattern of no difference in CLA performance between first-generation and non-first-generation students is reasonably consistent across outcomes. These results imply that first-generation students perform equally well on the CLA as their non-first-generation peers after adjusting for individual-level differences between the two groups.

Table 2. Overlap between Different Definitions of Underrepresented Status

	First-Year Students	Seniors
TOTAL		
First-generation	53%	48%
Pell-eligible	41%	36%
African-American/Hispanic*	19%	12%
FIRST-GENERATION		
Pell-eligible	53%	49%
African-American/Hispanic*	26%	15%
NON-FIRST-GENERATION		
Pell-eligible	27%	24%
African-American/Hispanic*	11%	8%

* *For this analysis, African-American and Hispanic students are compared with white students; students of other racial/ethnic backgrounds are excluded from analysis.*

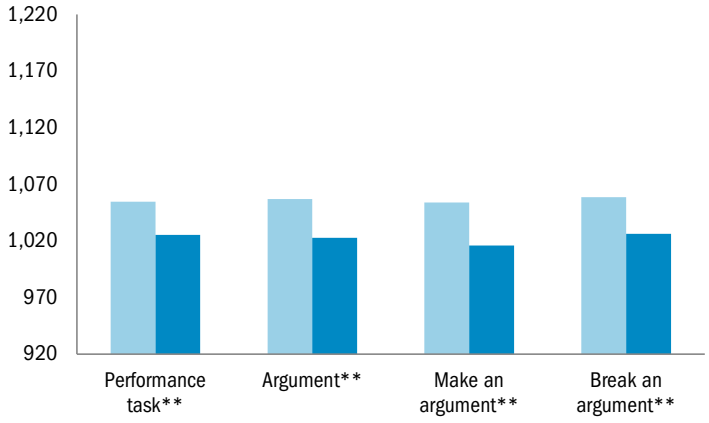
The next two sections of the report, III and IV, will examine CLA performance by Pell-grant eligibility and race/ethnicity. Before presenting those results, it is worthwhile to note that there is a substantial amount of overlap between students in different underrepresented categories. As Table 2 shows, among first-generation first-year students, approximately one-half are Pell-eligible and one-quarter are African-American and Hispanic. The proportions of Pell-eligible and African-American/Hispanic students are much smaller among non-first-generation first-year students. This table also reveals that the senior sample includes a slightly smaller proportion of first-generation and Pell-eligible students and a substantially smaller proportion of African-American and Hispanic students.

III. CLA Performance of Students by Pell-Grant Eligibility

The discussion of CLA performance for Pell-eligible and non-Pell-eligible students begins with descriptive results. Figure 4a shows that Pell-eligible students enter higher education with lower levels of skills as measured by the CLA. Pell-eligible first-year students have lower performance on all components of the CLA compared to non-Pell-eligible first-year students. Yet though this difference is statistically significant, it is not of large magnitude *(see Table 4A in the appendix for effect size estimates)*. Among seniors, descriptive results suggest that Pell-eligible and non-Pell-eligible students perform equally well on different components of the CLA *(see Figure 4b)*. Differences between Pell-eligible and non-Pell-eligible seniors are typically about half of the differences among first-year students. None of the differences in the senior sample is statistically significant.

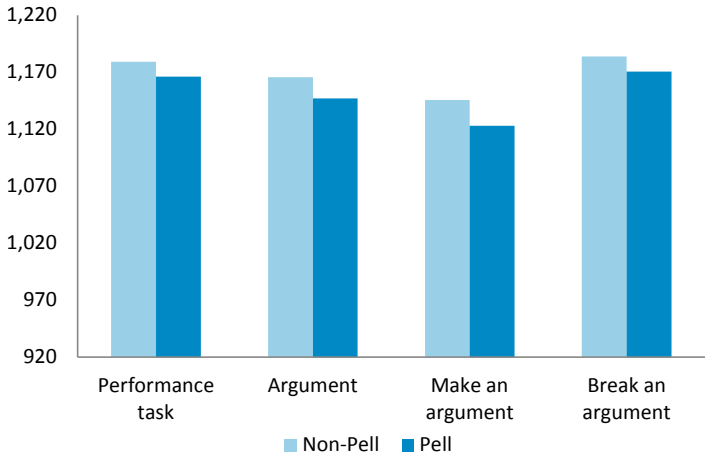
The descriptive results, which show gaps in CLA performance among first-year students but not seniors, seem to imply that Pell-eligible students catch up with their non-Pell-eligible peers during their time in college. The following analyses, however, indicate that conclusion to be premature. Figures 4a and 4b present descriptive statistics from cross-sectional samples. These figures do not adjust for differences between Pell-eligible

Figure 4a. First-Year Student CLA Scores, by Pell-Grant Eligibility



*Note: **p<0.01, *p<0.05*

Figure 4b. Senior CLA Scores, by Pell-Grant Eligibility



*Note: **p<0.01, *p<0.05 (None of the reported differences is statistically significant.)*

and non-Pell-eligible students on various individual characteristics, and they do not include the same students in both first-year and senior samples.

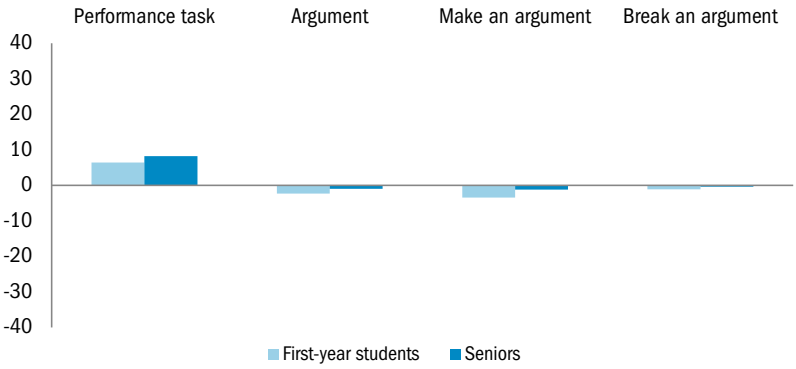
Table 3 illustrates patterns for one important characteristic: pre-college academic performance. Among first-year students, the difference between the two groups is as expected: Pell-eligible students have lower pre-college academic performance than non-Pell-eligible students. The gap is still present in the senior sample, but it is smaller. Both Pell-eligible and non-Pell-eligible students have higher pre-college academic preparation in the senior sample than in the first-year student sample. Though that is to be expected in a cross-sectional sample, it is notable that the difference in academic preparation between first-year and senior samples is twice as large for Pell-eligible students as for non-Pell-eligible students. Table 3 thus reveals a convergence in academic preparation between Pell-eligible and non-Pell-eligible samples in the senior year. Since academic preparation is related to CLA performance, this pattern would imply convergence in CLA performance, which is exactly what was observed in Figure 4b.

Table 3. Students' Pre-College Academic Performance, by Pell-Grant Eligibility and Urbanicity

	Non-Pell	Pell	Difference
TOTAL			
First-year students	1075.30	1,014.84	60.46
	(154.42)	(151.96)	
Seniors	1,089.67	1043.80	45.87
	(158.99)	(158.20)	
NON-URBAN			
First-year students	1,085.17	1,044.95	40.22
	(158.03)	(160.78)	
Seniors	1,117.63	1,055.87	61.76
	(155.74)	(156.48)	
URBAN			
First-year students	1,060.49	983.46	77.03
	(147.70)	(135.35)	
Seniors	1,050.75	1,032.28	18.47
	(155.35)	(159.17)	

Note: This table includes means and standard deviations (in parentheses).

Figure 5. Gaps in CLA Performance between Pell-Eligible and Non-Pell-Eligible Students, Controlling for Individual Characteristics

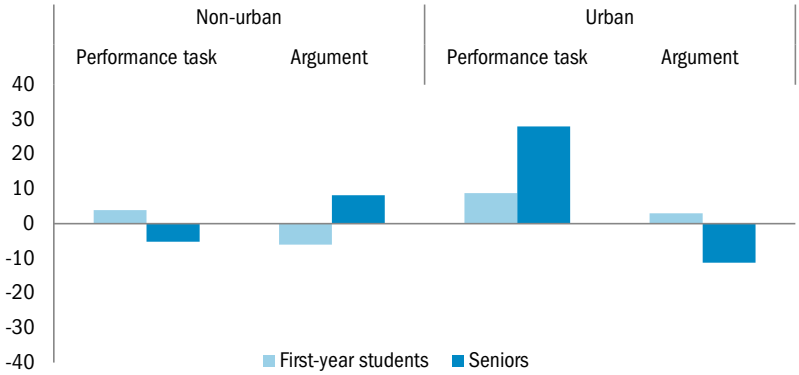


*Note: **p<0.01, *p<0.05 (None of the reported differences is statistically significant.)*

To examine whether CLA performance differs by Pell-grant eligibility, after adjusting for individual differences, the report includes regression analyses of different components of the CLA, controlling for students' sociodemographic characteristics (gender, race/ethnicity, parental education, and an indicator of English as a primary language) and pre-college academic preparation *(see Table 5A in the appendix for more details and alternative model specifications)*. Figure 5, which displays the results graphically, shows negligible or non-existent gaps in CLA performance between Pell-eligible and non-Pell-eligible students in both the first year and senior

year, net of controls. None of the gaps is either statistically significant or of large magnitude. The apparent differences in the descriptive results thus reflect variation in individual-level characteristics.

Figure 6. Gaps in CLA Performance between Pell-Eligible and Non-Pell-Eligible Students by Urbanicity, Controlling for Individual Characteristics



*Note: **p<0.01, *p<0.05 (None of the reported differences is statistically significant.)*

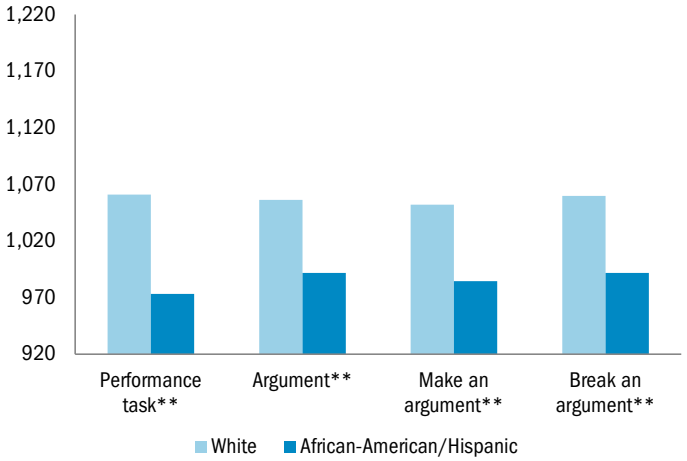
Although Pell-eligible and non-Pell-eligible students perform equally well on different components of the CLA, after adjusting for individual-level characteristics, it is important to consider whether the same pattern holds in both urban and non-urban settings. Examining CLA performance in urban and non-urban settings is complicated by patterns revealed in Table 3. Students in non-urban settings are more academically prepared than students in urban settings. This pattern holds for both Pell-eligible and non-Pell-eligible students, as well as for first-year and senior samples. But beneath that simple observation lies a complicated set of patterns. In urban settings, Pell-eligible first-year students lag substantially behind their non-Pell-eligible peers in pre-college academic preparation. This difference is substantially smaller in the senior year—indeed it is only one-quarter of the size in the first year. In urban settings, thus, Pell-eligible students are much less academically prepared than their non-Pell-eligible peers in the first-year sample but are relatively close to the academic preparation of their non-Pell-eligible peers in the senior sample. The pattern is reversed in non-urban settings, where the gap in academic preparation between Pell-eligible and non-Pell-eligible students is larger in the senior year than in the first year. Any consideration of CLA performance of Pell-eligible and non-Pell-eligible students in urban and non-urban settings thus must attend to differences in academic preparation.

Figure 6 shows gaps in CLA performance between Pell-eligible and non-Pell-eligible students in urban and non-urban settings, controlling for students' sociodemographic characteristics and pre-college academic performance *(see Table 6A in the appendix for complete results and alternative model specifications)*. After adjusting for individual-level characteristics, there are no statistically significant differences in CLA performance between Pell-eligible and non-Pell-eligible students; this finding holds for first-year students and seniors in both urban and non-urban settings. The estimates for these models are less stable given relatively small sample sizes for each sub-group examined. Consequently, there is more variability across outcomes, particularly in urban settings. The overall pattern, however, is one of no difference in CLA performance between Pell-eligible and non-Pell-eligible students, net of controls.

IV. CLA Performance by Race/Ethnicity

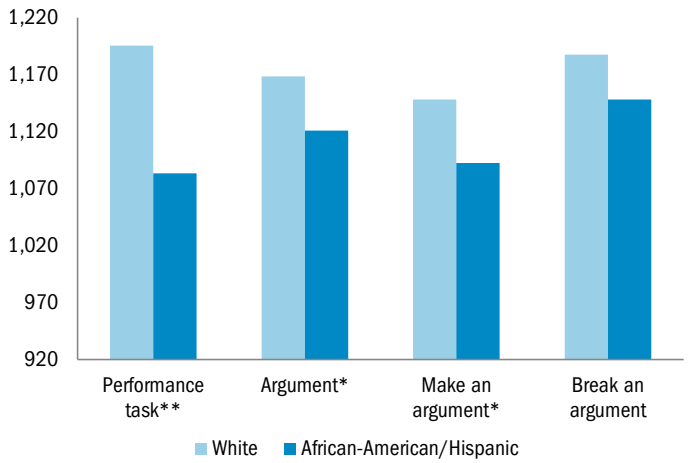
Although students from racial/ethnic minority groups, and African-American and Hispanic students in particular, are more likely to be first-generation as well as Pell-eligible, it is worthwhile to examine their performance independently. Figures 7a and 7b show descriptive results for different components of the CLA for African-American and Hispanic students in comparison to white students. Descriptive results indicate that African-American and Hispanic students enter college performing substantially below their white peers on all CLA components. These differences are not only statistically significant but also of greater magnitude than any of the gaps reported previously for either Pell-eligible or first-generation students *(see Table 7A in the appendix for effect size estimates)*. These patterns reveal a distinct disadvantage faced by racial/ethnic minority students entering higher education.

Figure 7a. First-year Student CLA Scores, by Race/Ethnicity



*Note: **p<0.01, *p<0.05*

Figure 7b. Senior CLA Scores, by Race/Ethnicity

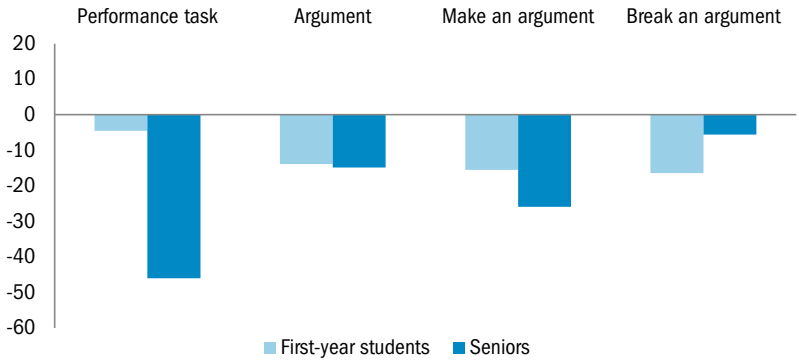


*Note: **p<0.01, *p<0.05*

CLA performance of seniors presents a mixed picture *(see Figure 7b)*. The gap between African-American/Hispanic and white students for the break an argument component is of small magnitude and not statistically significant. Gaps for the other components of the CLA remain statistically significant, although of varied magnitudes. The largest gap is for the performance task, where African-American/Hispanic seniors perform 0.65 standard deviation below their white peers. Indeed the difference between African-American/Hispanic and white students on the performance task

is larger in the senior sample than in the first-year sample. Some of this variability in the results may reflect relatively small sample sizes for African-American/Hispanic students in the senior year (approximately 140 for performance task and 120 for other components of the CLA; *see Table 7A*).

Figure 8. Gaps in CLA Performance between African-American/Hispanic and White Students, Controlling for Individual Characteristics



*Note: **p<0.01, *p<0.05 (None of the reported differences is statistically significant.)*

Making comparisons between first-year and senior samples is further complicated by the ethnicity distribution patterns noted in Table 2: While the first-year student sample includes 19 percent of African-American/Hispanic students, the senior sample includes only 12 percent of students in these racial/ethnic groups. The difference between the first and senior year is particularly pronounced for first-generation students: Among first-generation students, 26 percent of first-year students and only 15 percent of seniors are African-American/Hispanic. First-year and senior samples thus seem to include different groups of African-American/Hispanic students.

African-American/Hispanic students differ from their white peers not only with respect to first-generation status but a range of other background characteristics, including academic preparation. An important question thus is whether gaps in CLA performance between African-American/Hispanic and white students persist after controls. Table 8A in the appendix reports results from regression models predicting each of the components of the CLA while controlling for students' sociodemographic characteristics (gender, parental education, Pell-grant eligibility, and an indicator of English as a primary language) and pre-college academic preparation. Figure 8 summarizes the results by showing adjusted gaps in CLA performance between African-American/Hispanic and white students. This figure shows no statistically significant gaps between African-American/Hispanic and white students in either first-year or senior samples. Some differences in magnitude exist, with the gap in performance task in the senior year being particularly pronounced. The overall pattern, however, indicates no racial/ethnic differences in CLA performance in either the first or senior year after controls for pre-college academic performance and background characteristics.

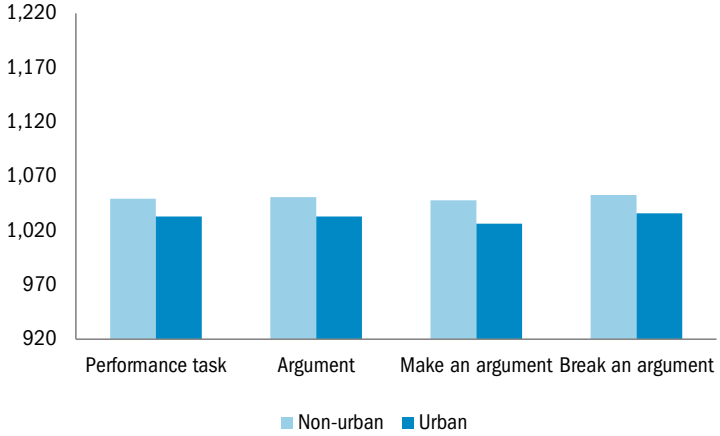
Although it would be valuable to consider whether the observed racial/ethnic patterns in CLA performance are the same in urban and non-urban settings, this comparison is not possible with the available data. As noted in Table 7A, the number of African-American/Hispanic students is already quite low in the senior sample. Further disaggregating this sample by urbanicity would produce too small a sample to render reliable estimates.

V. CLA Performance in Urban and Non-Urban Settings

Descriptive Differences and Regression Results for Urban and Non-Urban Settings

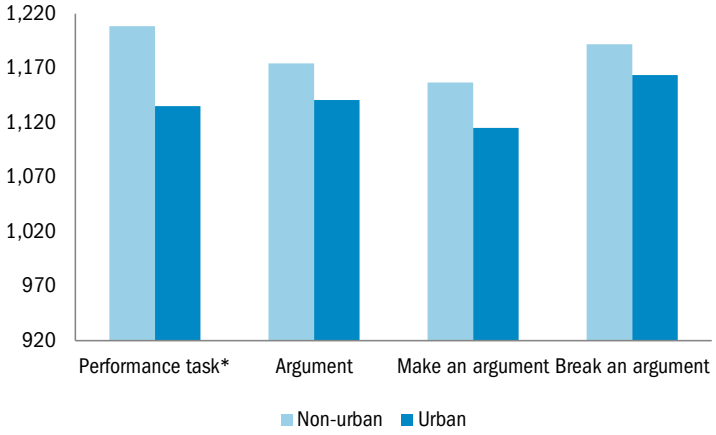
Although differences between urban and non-urban contexts have been considered throughout the report, the analyses heretofore focused on examining whether gaps between certain groups of students vary in urban and non-urban settings. At this point, the report turns to a closer examination of urban vs. non-urban differences. The report will begin by treating urbanicity as a characteristic of students and thus reporting individual-level analyses akin to those performed for first-generation status, Pell-grant eligibility, and race/ethnicity. These analyses present a broader view of urban vs. non-urban differences and depend less on characteristics of specific samples at each institution. Moreover, they allow for estimation of regression analyses using all of the available data, thus adjusting CLA estimates for a range of students' background characteristics.

Figure 9a. First-Year Student CLA Scores, by Urbanicity



*Note: **p<0.01, *p<0.05 (None of the reported differences is statistically significant.)*

Figure 9b. Senior CLA Scores, by Urbanicity



*Note: **p<0.01, *p<0.05 (Statistically significant difference for the performance task.)*

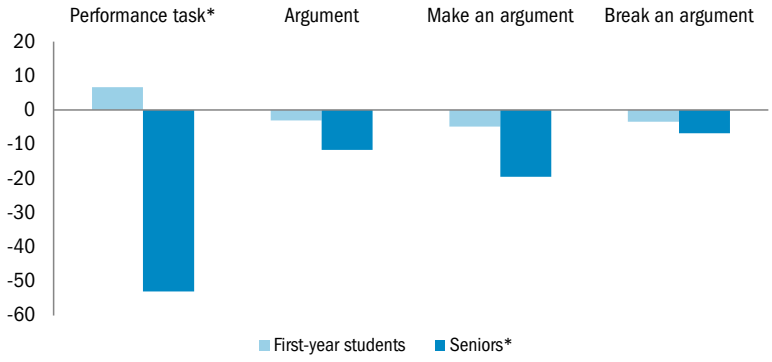
Descriptive results in Figure 9a reveal that students in urban and non-urban settings perform equally well on different components of the CLA at entry into higher education. Differences among first-year students are very small and not statistically significant *(see Table 9A in the appendix for complete results and effect size estimates)*. Senior-year results are slightly more mixed *(see Figure 9b)*. Gaps between seniors in urban and non-urban settings are small in magnitude and not statistically significant for argument components of the

CLA. The difference in the performance task, however, is 0.43 standard deviations, a moderate magnitude and statistically significant.

Notwithstanding the difference in the senior-year performance task measure, it is notable that descriptive results reveal little variation in CLA performance across urban and non-urban settings. As students across those two settings differ from each other along multiple dimensions, it may be anticipated that the regression analyses will even further reduce the relatively small gaps observed in Figures 9a and 9b. Table 10A in the appendix shows results from regression analyses of CLA performance, adjusted for students' sociodemographic characteristics (gender, race/ethnicity, Pell-grant eligibility, parental education, and an indicator of English as a primary language) and pre-college academic preparation. Figure 10 displays selected results graphically.

Patterns in Figure 10 reveal no notable or statistically significant differences in CLA performance between first-year students in urban and non-urban settings. The same pattern holds for the senior year, except for the performance task component of the CLA. Controlling for individual characteristics reduces, but does not eliminate, the gap in performance task between seniors in urban and non-urban settings. This one exception deserves more careful exploration in future research, but given that the other components of the CLA show no difference between the two settings, the weight of the evidence implies that there is no difference in CLA performance between urban and non-urban settings. It is important to note that these findings are not simply an artifact of using the full sample as opposed to the representative sample (see the Methodological Appendix for discussion of sample differences). If the representative sample were used, all of the reported patterns would hold, with the gaps differing by only a few points (e.g., for the performance task, the gap is 53 points in the full sample and 49 points in the representative sample after controlling for student characteristics).

Figure 10. Gaps in CLA Performance between Students in Urban and Non-Urban Areas, Controlling for Individual Characteristics



*Note: **p<0.01, *p<0.05*

(Statistically significant difference for performance task in the senior year.)

Institutional CLA Performance in Urban and Non-Urban Settings

Though the preceding analyses treated urbanicity as a characteristic of students, this project was designed with urbanicity as an institution-level attribute. At this point, the report thus shifts to focus on institutions as units of analysis. This shift necessitates several changes in perspective. The first one is focusing on data from the representative sample as opposed to the full sample, as was the case for preceding analyses. Each institution aimed to collect information from a representative sample of students and an in-depth sample of Pell-eligible and/or

first-generation students. Although institutions were differentially successful in these endeavors and differentially coded students as being in the representative sample or the in-depth sample, claims about individual institutions will focus on what they designated as the representative sample (for a more detailed discussion of the two samples, see the Methodological Appendix). Second, focusing on institutions shifts the analytic frame to the value-added approach, which emphasizes an institution's contribution to the development of higher-order skills.

Figure 11 shows descriptive patterns for the performance task of the CLA for first-year students and seniors at each institution. To protect the confidentiality of the institutions, they are given generic names (college 1, college 2, etc.) and separated into urban and non-urban settings. It is important to note that while all institutions are shown in the figure, the reliability of estimates varies across institutions, and some of the estimates are based on a very small number of cases *(see sample size for each institution in Table 11A and Table 12A in the appendix)*. Estimates for college 9 in particular are based on a very small number of cases (fewer than 20 cases in each student cohort).

The light blue portion of the bars indicates average performance by first-year students in each institution. The dark blue portion of the bars represents the difference between the average first-year and the average senior score. These descriptives reveal much variation across institutions in both first-year and senior samples. On average, the dark blue portion of the bars is larger for non-urban institutions. This implies that the difference between senior and first-year scores is larger in non-urban than in urban settings. There is a substantial amount of variation within both settings, however. Moreover, these findings need to be interpreted with caution given that they are based on cross-sectional data.

Figure 11. CLA Performance Task Scores for First-Year Students and Seniors, by Institution

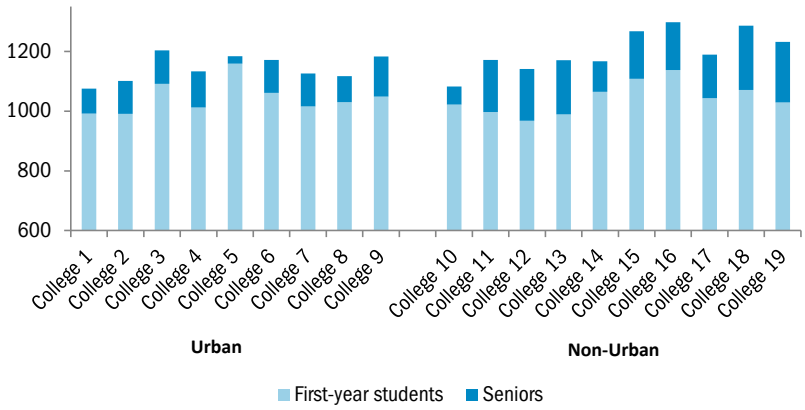
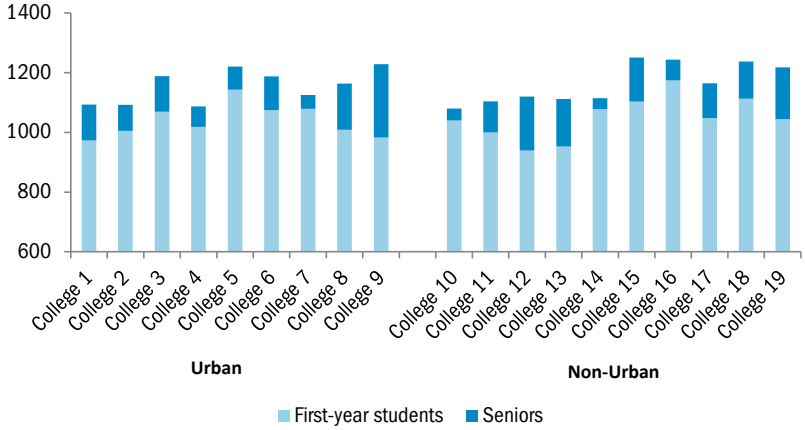


Figure 12. CLA Argument Scores for First-Year Students and Seniors, by Institution



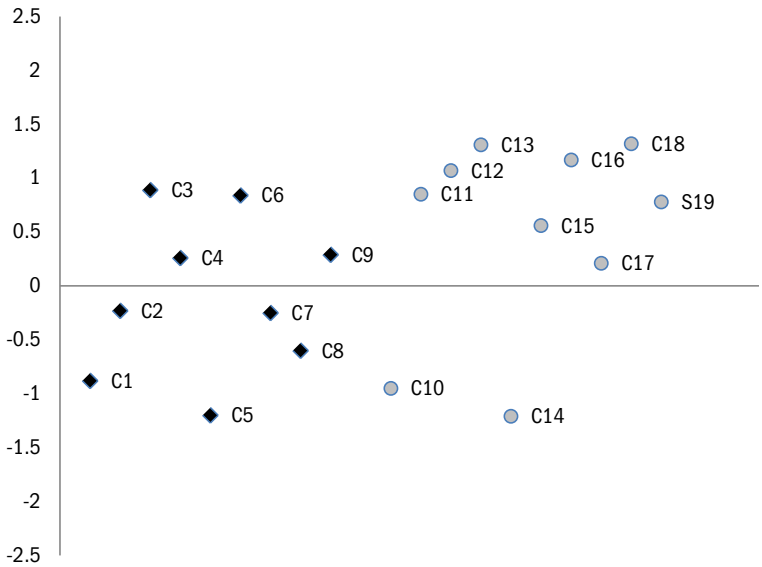
The patterns for other components of the CLA are more similar across the two settings. Figure 12 shows average scores for the argument component of the CLA for first-year students and

seniors at each institution. In this figure, there is no discernible pattern that would differentiate urban from non-urban institutions. There is a substantial amount of variation across institutions within both urban and non-urban contexts and no clear difference between institutions in the two settings. This pattern would be anticipated from previously reported individual-level regression analyses, which reported no difference between urban and non-urban settings with respect to student performance on the argument component of the CLA.

Figures 11 and 12 show descriptive patterns without any adjustment for student characteristics. To consider whether institutional performance differs after adjusting for student characteristics, the report turns to institutional value-added scores. Value-added scores used in this portion of the report are computed by the Council for Aid to Education (CAE) using representative samples for each institution. An institution's value-added score indicates the degree to which the observed senior mean CLA score meets, exceeds, or falls below expectations. The CAE calculates value-added scores by controlling for students' pre-college academic performance.

Before reporting value-added estimates, it is worthwhile to reflect on the question of whether pre-college academic performance represents an adequate control. Though the report cannot answer this question definitively, appendix tables provide some insights. All regression analyses in the appendix include two different models: one controlling only for students' pre-college academic preparation and the other one controlling for students' pre-college academic preparation and several other background characteristics. Examination of the results indicates that controlling for pre-college academic performance substantially reduces gaps between all of the groups examined (first-generation vs. non-first-generation, Pell-eligible vs. non-Pell-eligible, African-American/Hispanic vs. white). And notably, pre-college academic performance alone reduces the gaps in CLA performance as much as all of the other sociodemographic characteristics considered jointly. Pre-college academic performance is thus the single most important factor to be used in the adjustment of CLA performance for pre-existing student differences.

Figure 13. Value-Added CLA Performance Task Scores by Institution

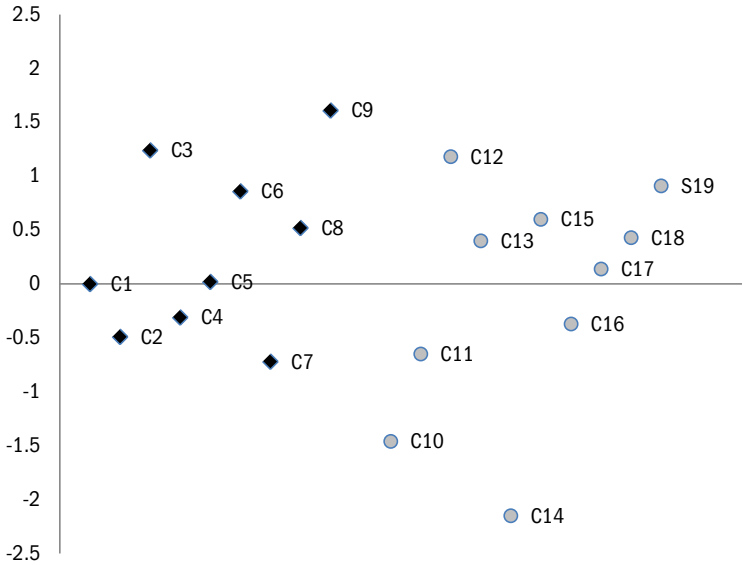


Note: Diamonds indicate urban institutions and circles indicate non-urban institutions.
Source: Institutional reports prepared by the Council for Aid to Education.

Figure 13 reports standardized value-added scores for the performance task of the CLA for each institution. This figure reveals two notable findings. First, on average, non-urban institutions have slightly higher value-added scores on the performance task of the CLA—most of the non-urban institutions are in the

positive range of value-added scores, with only two non-urban institutions having negative value-added scores. Second, a substantial amount of variation in value-added scores occurs within each of those settings. Some urban institutions have positive value-added scores and some have negative value-added scores. The same pattern holds for non-urban institutions. And indeed, most of the institutions in urban and non-urban settings have value-added scores within a close range.

Figure 14. Value-Added CLA Argument Scores by Institution



Note: Diamonds indicate urban institutions and circles indicate non-urban institutions.
Source: Institutional reports prepared by the Council for Aid to Education.

Figure 14 shows institutional value-added scores for the argument component of the CLA. As would be anticipated from the descriptive results, this figure shows much more variation within each setting and no clear pattern differentiating urban from non-urban institutions. Some institutions in both settings have positive value-added scores, and some institutions in both settings have negative value-added scores. There is no clear tendency for institutions in either the urban or non-urban setting to cluster in a particular section of the graph. Findings in Figures 13 and 14 highlight the challenges of identifying whether contextual factors, such as urban vs. non-urban settings, are related to CLA performance. As is clear from these figures, the predominant variation is within each setting not across it. Even in instances where small differences between urban and non-urban contexts (e.g., the performance task) may exist, those differences are overshadowed by variation within urban and non-urban contexts. Both urban and non-urban settings have high and low-performing institutions.

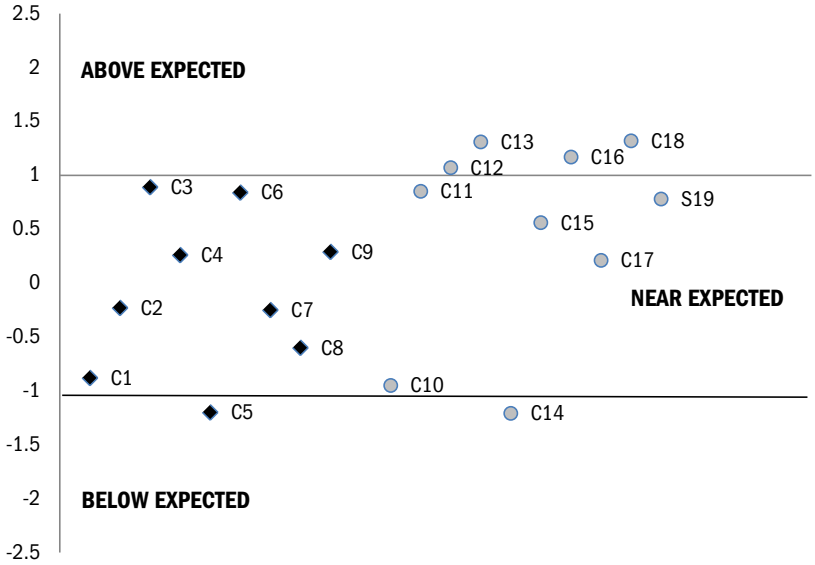
Institutional CLA Value-Added Scores Assigned to Performance Levels

In addition to reporting value-added scores for each institution, the CAE assigns institutions to different performance levels. These performance levels are based on standardized value-added scores (i.e., value-added scores expressed in standard deviations such as those reported in Figures 13 and 14) as follows: Institutions that fall between -1.00 and +1.00 are classified as "near expected," between +1.00 and +2.00 are "above expected," between -1.00 and -2.00 are "below expected," above +2.00 are "well above expected," and below -2.00 are "well below expected." To simplify graphic representations in this section, the categories are collapsed into three levels: "above expected" (including "well-above expected"), "near expected," and "below expected" (including "well-below expected"). Most of the institutions in the sample fall in the "near expected" category across different measures. A few of the institutions are classified as "above expected" or "below expected," with only one institution falling into

the "well-below expected" category for the argument component of the CLA *(see Table 13A in the Appendix)*.

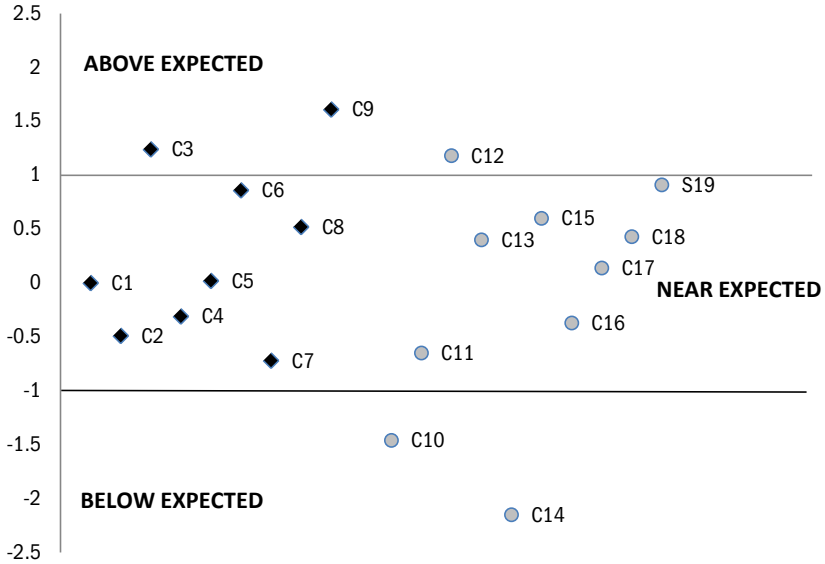
Figures 15 and 16 include previously reported value-added scores, with two horizontal lines separating above expected, near expected, and below expected categories. These figures show that most of the institutions in both urban and non-urban settings are in the near-expected category. Four non-urban institutions are in the above-expected category for performance task, without any urban institutions being classified in this category. This would seem to suggest that non-urban institutions perform slightly better. Institutions in the above-expected portion of the graph are quite close to the line, however, and thus are quite close to being in the near-expected category. Moreover, non-urban institutions do not perform as well when considering the argument component of the CLA. Only one non-urban institution, along with two urban institutions, is in the above-expected category for the argument component of the CLA. Two non-urban institutions (and no urban institution) are in the below-expected category for the argument component of the CLA. As noted previously, thus, there is more variation in performance *within* urban and non-urban settings than across them.

Figure 15. Value-Added CLA Performance Task Scores by Institution, Divided into Performance-Level Categories



Note: Black diamonds indicate urban institutions and gray circles indicate non-urban institutions.
Source: Institutional reports prepared by the Council for Aid to Education.

Figure 16. Value-Added CLA Argument Scores by Institution, Divided into Performance-Level Categories

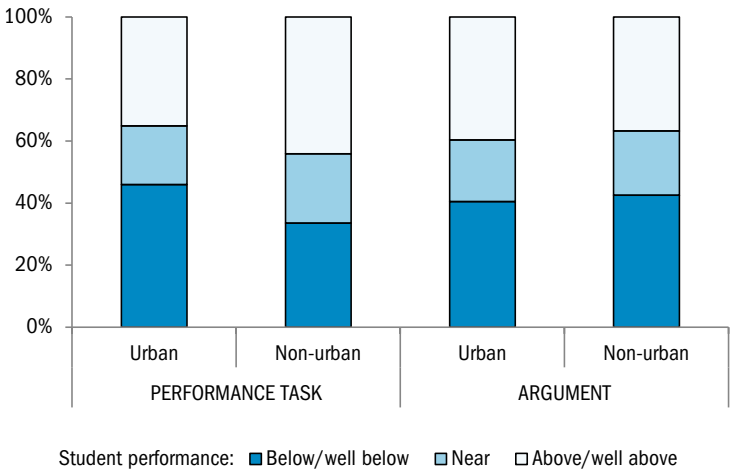


Note: Black diamonds indicate urban institutions and gray circles indicate non-urban institutions.
Source: Institutional reports prepared by the Council for Aid to Education.

Another approach to considering variation within urban and non-urban settings is to examine students' individual performance. In addition to classifying institutions into specific performance categories, the CAE creates expected scores for students. Students' expected CLA scores are based on a regression model adjusting for their academic preparation as well as average CLA scores and academic preparation of the institution they attend. Based on the regression equation, students' expected scores are compared to their observed scores and resulting deviation scores (or residuals) are divided into quintiles, with students in the top quintile designated as "well-above expected," second quintile as "above expected," middle quintile as "near expected," fourth quintile as "below expected," and the bottom quintile as "well-below expected."

Since the student distribution is based on quintiles, this means that 40 percent of students are found in the above/well-above category, 40 percent in the below/well-below category, and 20 percent in the near-expected category. If urban institutions had a disproportionate number of students who did not perform well, the below/well-below category would be greater than 40 percent. Similarly, if non-urban institutions had a disproportionate number of well-performing students, the above/well-above category would be larger than 40 percent. Figure 17 reveals that the distributions of student performance are remarkably similar in urban and non-urban settings. For the argument component of the CLA, the distribution of student performance in urban and non-urban settings is virtually identical. There are small differences for the performance task, as would be expected from previous analyses, showing that students in non-urban settings seem to perform slightly better on the performance task component of the CLA. Despite this variation, similarities across the two settings are much more pronounced than the differences.

Figure 17. Percentage of Seniors Performing at Various Levels in Urban and Non-Urban Settings



Moreover, it may be valuable to note that high and low-performing students are found at all institutions. One straightforward way to illustrate this point is to examine student performance at institutions of varying levels of performance. It is important to keep in mind that institutional performance levels are based on absolute cut-offs, while student performance levels are based on a relative location in the distribution (i.e., quintiles). The two scales are thus not perfectly matched, but they are adequate for the purposes of this illustration.

Institutions in the near-expected category are closest to the average and thus should have approximately 40 percent of students who perform in the above/well-above expected category, 20 percent in the near-expected category, and 40 percent in the below/well-below average category. That is indeed what is observed in Figures

18 and 19. Moreover, institutions that are in the above-expected category have more than 40 percent of students in the above/well-above category, and institutions in the below-expected category have more than 40 percent of students in the below/well-below category. This is precisely what would be expected based on the definitions.

It is worthwhile to note, however, that, regardless of the overall institutional performance, all of these institutions enroll students of varying degree of ability. Even institutions classified as above expected have some students who perform below what would be expected. Similarly, even institutions classified as below expected have a substantial proportion of students who perform above what would be expected. As Charles Blaich, director of inquiry in the liberal arts at Wabash College, often notes, every institution has a "zone of excellence" and a "zone of despair." Every institution has students who perform above expectations as well as those who perform below expectations. Institutional leaders thus face a unique challenge of identifying the students who perform well and the ones who seem to be losing ground (i.e., performing at lower levels than expected) and developing specific strategies to facilitate student learning on their campuses.

Figure 18. Percentage of Seniors Performing Below-Near-Above Expected on the Performance Task Component of the CLA, at Institutions of Varying Levels of Performance

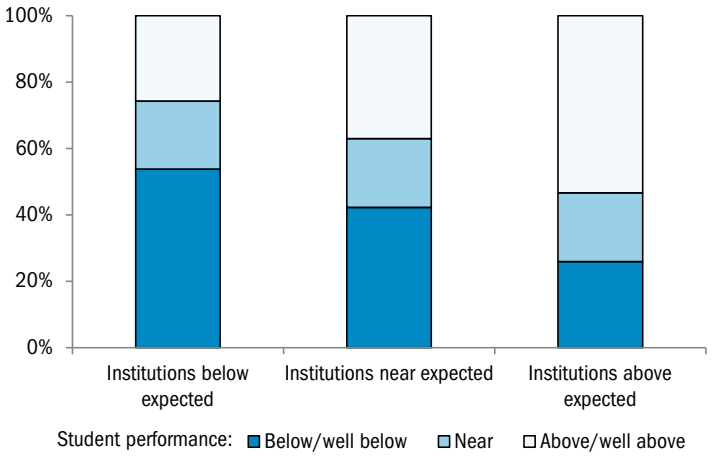
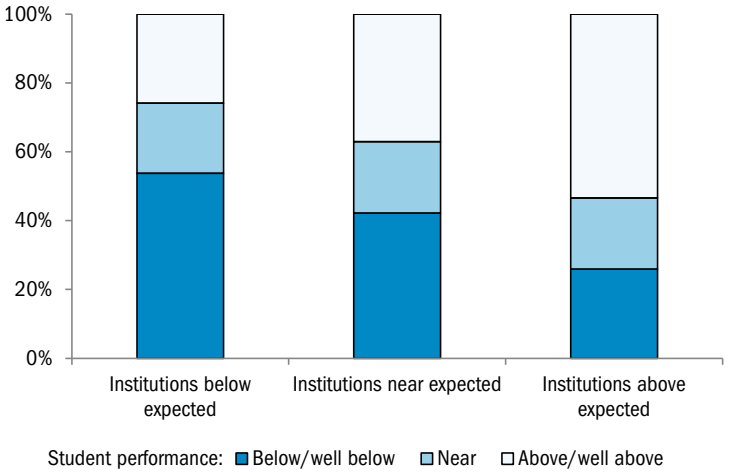


Figure 19. Percentage of Seniors Performing Below-Near-Above Expected on the Argument Component of the CLA, at Institutions of Varying Levels of Performance



Though lacking longitudinal data and therefore the ability to make direct claims about growth over time, findings presented are consistent with the following observations. Independent urban and non-urban institutions do equally well in educating the students they enroll (as assessed by the CLA). Independent urban and non-urban institutions do equally well in educating different groups of students (as assessed by the CLA), including students from underrepresented groups.

VI. Conclusion

This study examined gaps in CLA performance between several underrepresented groups of students and their more advantaged peers. In particular, the study compared first-generation and non-first-generation students, Pell-eligible and non-Pell-eligible students, and African-American/Hispanic and white students. In addition to reporting average CLA performance for those groups, the report also considered whether student performance varied across urban vs. non-urban settings.

Three main findings emerge from presented analyses:

- After controlling for individual-level characteristics, and particularly academic preparation, there are no differences in CLA performance among different groups of students. This finding holds in both urban and non-urban institutional settings.

- There is substantially more variation *within* urban and non-urban settings than across those two settings. Individual institutions, not broad categories such as urban and non-urban, present a more productive focus of analysis and policy development.

- Independent urban and non-urban institutions do equally well in educating the students they enroll (as assessed by the CLA). They also do equally well in educating different groups of students, including students from underrepresented groups.

These findings have several notable implications:

- The most important predictor of CLA performance is academic preparation. This is also the primary factor that explains inequalities in CLA performance among different groups of students. This finding suggests that postsecondary institutions should work with local high schools to improve student preparation or influence broader state and national conversations to prepare high school students for college-level work.

- There is more variation in CLA performance within specific institutional settings (e.g., urban and non-urban) than across those settings. Analyses and policy interventions thus need to focus on specific institutions, not broad categories of institutions.

- All institutions have students who perform at different levels, producing much more variation within institutions than across them. Institutions would thus benefit from focusing within—studying carefully their own students and understanding the groups of students that perform well and how their successes can be replicated, as well as the groups of students that do not perform as well and the specific strategies that are needed to improve their outcomes.

Finally, this report could not have been written without the concerted effort of many institutions. Moreover, institutions cannot improve their outcomes without understanding the challenges and successes of their students. To better examine variation on student learning outcomes within an institution, additional assessment measures beyond those examined in this study will be needed. Investing in institutional infrastructure to collect high-quality assessment data is thus an important part of the puzzle of improving learning outcomes for all students.

It is important to note that the results presented in this report are based on cross-sectional data including samples of first-year students in 2010 and seniors in 2011. Moreover, the report includes two different samples: a representative sample of the student population and an in-depth sample of first-generation and low-income students. All of the individual-level analyses are based on the full sample (including the representative sample and the in-depth sample), while institution-level analyses are based on the representative sample only. Comparisons of those samples in both the first and senior years are discussed in the Methodological Appendix. Discussion of different samples illuminates the challenges of data collection efforts and subsequent statistical analyses. Supporting the development of stronger institutional infrastructure for data collection efforts would facilitate more robust analyses in the future.

Methodological Appendix

Overall Sample Definition

This report is based on the fall 2010 first-year cohort and spring 2011 senior cohort at 19 participating institutions, all small and mid-sized private, nonprofit colleges and universities. Students with missing information on the key variable of interest, Pell status, which was missing for six students, were excluded from analyses. This restriction produces the beginning sample size of 3,479 first-year students and 2,440 seniors. This overall sample size includes two distinct samples: a representative sample and an in-depth sample of first-generation and low-income students. (Though race/ethnicity is examined in this report, institutions were not asked to provide an in-depth sample along this dimension.) The representative sample includes 2,645 first-year students and 1,999 seniors. The in-depth sample includes 834 first-year students and 441 seniors. Comparison of the two samples is discussed under the heading of "sample comparisons." It is important to note that approximately half of the students took the performance task component of the Collegiate Learning Assessment (CLA) and the other half took the argument components of the CLA. Therefore, reported analyses for each component of the CLA are based on approximately half of the sample. Appendix tables include sample sizes for each outcome and group examined.

Variable Definitions

The report focuses on exploring CLA performance of underrepresented groups of students in comparison to their more advantaged peers. Underrepresented status is defined along three different, albeit overlapping, dimensions: first-generation status, Pell-grant eligibility, and race/ethnicity. For the purposes of selecting an in-depth sample, a "first-generation" student was defined as a student whose parent(s) did not attend *any* college, and a "low-income" student was defined as a student who was a Pell grant recipient or who was eligible to receive a Pell grant. Pell-grant eligibility is a variable denoting whether a student received or was eligible for a Pell grant. Even with over-sampling, however, the proportion of students whose parents had no college experience ended up being quite small. Approximately one-quarter of first-year students and less than 20 percent of seniors in the full sample came from families where parents had no college experience. As only approximately half of the students completed the performance task, and the other half completed the argument components of the CLA, each of those samples was split in half, substantially decreasing the reliability of results. For the purposes of the analyses presented in the report, a first-generation student thus is defined as a student coming from a family where neither parent *completed* a college degree. Approximately one-half of first-year students and seniors had at least one parent who completed college or graduate/professional degrees—therefore, approximately one-half of the sample is designated as non-first-generation in this study.

The third aspect of underrepresented status is race/ethnicity. The original variable included six categories, but most of them, except for white, had a relatively small number of cases. In this report, African-American and Hispanic students are combined into one category and compared to white students. Other racial/ethnic groups are omitted from analyses of racial/ethnic differences in CLA performance. Including all non-white groups into one category produces too much heterogeneity. Different racial/ethnic groups tend to have varied levels of pre-college academic performance (and subsequent CLA performance); some perform relatively similarly to white students and some do not. African-American and Hispanic students are most similar along these dimensions. They are combined into one category because each group includes too few students to provide reliable estimates, particularly in the senior sample.

The report explores variation in student performance between urban and non-urban settings. "Urban" was defined as a city with a population greater than 100,000 or a large suburb located in close proximity to a major metropolitan area where the institution serves a high percentage of students from that metropolitan area. Among 19 institutions participating in the study, nine were located in urban settings and ten in non-urban settings.

The key outcome of interest is students' performance on the CLA, a standardized assessment which aims to capture higher-order collegiate skills, including critical thinking, complex reasoning, and written communication. The CLA provides four different scores: performance task, make an argument, break an argument, and argument (which is the average of make an argument and break an argument scores). Throughout most of the report, results for all four CLA components are reported. In general, the patterns are consistent across measures, increasing confidence in the reported results.

Analysis

For each dimension of underrepresented status, the report first presents descriptive results. Average CLA performance of students in underrepresented groups is compared to the average CLA performance of their more advantaged peers. The comparisons include: first-generation vs. non-first-generation, Pell-eligible vs. non-Pell-eligible, and African-American/Hispanic vs. white.

Although these descriptive results provide valuable information, they are difficult to interpret since students from underrepresented groups differ from students who are not in those groups. The report thus includes regression analyses of CLA performance, controlling for specific individual-level characteristics. The strongest predictor of CLA performance is students' pre-college academic preparation (i.e., entering academic ability score: SAT Math plus Verbal, ACT Composite, or Scholastic Level Exam [SLE] scores on a common scale). The report thus includes two sets of models controlling for: a) pre-college academic preparation and b) pre-college academic preparation and sociodemographic characteristics.

All descriptive results are based only on non-missing data. To preclude deleting cases from regression analyses, however, a mean substitution method was used (i.e., mean is substituted for missing data and a dummy indicator

denoting that the substitution is made is added to the models). The number of missing cases is quite small, but given that some of the analyses already rely on a small number of cases, preserving cases is valuable. Four percent of cases were missing pre-college academic performance, 0.25 percent gender, and 2 percent race/ethnicity. Race/ethnicity is not mean substituted in the models focusing on African-American/Hispanic vs. white comparisons. All regression analyses and statistical tests are adjusted for clustering of students within institutions.

Sample Comparisons

This study includes two distinct samples: the representative sample and the in-depth sample of first-generation and low-income students. The in-depth sample was added to increase the reliability of estimates for underrepresented groups of students. Individual-level regression analyses were performed on the full sample (i.e., including both the representative and the in-depth sample) to maximize the number of cases for each group of interest. Institution-level analyses were based on the representative sample. The Council for Aid to Education (CAE) also used the representative sample to estimate institutional value-added scores. The CIC and CAE representative samples differ slightly because CAE deleted cases without valid pre-college academic preparation. Tables 11A and 12A show the distribution of cases and mean scores for the performance task component of the CLA for each institution across different samples. It is notable that many institutions do not have an in-depth sample; thus, the representative and the full sample are the same.

When considering whether to use the representative or the full sample, in addition to the concern about the number of cases available for specific groups, it is worthwhile to note that the representative sample is not always necessarily representative. For example, three institutions in the sample included all of their Pell-eligible students in the in-depth sample, leaving none in the representative sample. There was also variation in the ability of institutions to obtain representative samples. For example, a supplementary comparison was conducted comparing the percentage of white and Pell-grant eligible students in two samples: the representative sample in this dataset and institutional data reported in the Integrated Postsecondary Education Data System (IPEDS) for 2009. Those comparisons reveal variation in the extent to which representative samples in this study mimic data reported in IPEDS.

For all of the aforementioned reasons, regression analyses in this report are based on the full sample. Supplementary analyses, however, were conducted to compare the sensitivity of results to the sample used. CLA performance of first-year students and seniors in the full sample, in-depth sample, and representative sample was compared. The comparison focused on Pell-eligible vs. non-Pell-eligible students since those two groups show the most variation. After calculating the CLA performance for each sample, the CLA performance was weighted based on the representation of Pell-eligible and non-Pell-eligible students in each of the samples. The results from the weighted data were closer to the results for the full sample than the results for the representative sample. In addition, regression analyses were conducted on both the full and the representative sample. Regression results for the two samples are substantively identical—i.e., neither sample shows gaps in CLA performance between different groups after controlling for individual-level characteristics. Reliance on the full sample thus does not appear to bias the reported results.

Appendix Tables

Table 1A. CLA Scores, by First-Generation Status

	First-generation			Non-first generation			Mean difference	Mean difference
	N	Mean	SD	N	Mean	SD	Raw scores	Effect size (SD)
First-year students								
Performance task	925	1,021.06	158.58	824	1,066.50	163.36	-45.44**	-0.28
Argument	901	1,024.31	134.49	791	1,064.88	136.72	-40.57**	-0.30
Make an argument	917	1,016.84	157.58	799	1,063.86	152.95	-47.02**	-0.30
Break an argument	908	1,028.45	156.07	795	1,065.24	157.70	-36.79**	-0.23
Seniors								
Performance task	622	1,161.05	173.39	630	1,187.91	170.69	-26.86*	-0.16
Argument	537	1,146.35	139.32	633	1,169.62	143.84	-23.27*	-0.16
Make an argument	542	1,120.98	160.80	636	1,151.58	166.96	-30.60**	-0.19
Break an argument	538	1,172.09	158.65	637	1,184.78	166.12	-12.69	-0.08

*Note: **p<0.01, *p<0.05 (significance tests adjusted for clustering of students within institutions)*

Table 2A. Mean Observed and Estimated Gaps in CLA Scores between First-Generation and Non-First Generation Students

	Non-First Generation vs. First-Generation Gap in CLA Performance		
	Observed	Estimated	
Controlling for:		Pre-college academic	Pre-college academic and background
First-year students			
Performance task	-45.44**	-2.37	-1.91
Argument	-40.57**	-11.13	-9.87
Make an argument	-47.02**	-15.18	-14.16
Break an argument	-36.79**	-9.23	-6.72
Seniors			
Performance task	-26.86*	0.96	0.73
Argument	-23.27*	6.58	5.00
Make an argument	-30.6**	-0.30	-0.91
Break an argument	-12.69	16.25*	13.73

***p<0.01, *p<0.05 (significance tests adjusted for clustering of students within institutions)*
Note: Estimates are based on a regression model predicting different components of the CLA and controlling for students' background characteristics and pre-college academic performance, as indicated.

Table 3A. Mean Observed and Estimated Gaps in CLA Scores between First-Generation and Non-First-Generation Students, in Urban and Non-Urban Settings

	Non-First Generation vs. First-Generation Gap in CLA Performance		
	Observed	**Estimated**	
Controlling for:		Pre-college academic	Pre-college academic and background
NON-URBAN			
First-year students			
Performance task	-52.34**	-7.08	-6.36
Argument	-52.55**	-22.44	-19.77
Make an argument	-64.11**	-33.14**	-32.07**
Break an argument	-40.90**	-11.14	-7.04
Seniors			
Performance task	-22.36	-0.39	0.79
Argument	-27.43	1.33	-1.92
Make an argument	-39.51*	-11.20	-12.11
Break an argument	-15.67	13.12	7.40
URBAN			
First-year students			
Performance task	-33.53	2.26	4.25
Argument	-21.26	4.33	4.05
Make an argument	-20.33	9.53	9.05
Break an argument	-28.52	-6.74	-5.27
Seniors			
Performance task	-27.37	2.94	-1.22
Argument	-15.76	12.60	13.92
Make an argument	-16.97	12.10	11.93
Break an argument	-6.94	19.86	22.27

***p<0.01, *p<0.05 (significance tests adjusted for clustering of students within institutions)*

Note: Estimates are based on a regression model predicting different components of the CLA and controlling for students' background characteristics and pre-college academic performance, as indicated.

Table 4A. CLA Scores, by Pell-Grant Eligibility

	Pell			Non-Pell			Mean difference	Mean difference
	N	Mean	SD	N	Mean	SD	Raw scores	Effect size (SD)
First-year students								
Performance task	728	1,025.42	165.75	1021	1,054.62	158.93	-29.20**	-0.18
Argument	678	1,022.68	136.65	1014	1,057.05	135.63	-34.37**	-0.25
Make an argument	692	1,016.04	162.89	1024	1,054.07	151.40	-38.03**	-0.24
Break an argument	683	1,026.26	154.87	1020	1,058.59	158.65	-32.33**	-0.20
Seniors								
Performance task	445	1,166.13	164.23	807	1,179.22	176.22	-13.09	-0.08
Argument	420	1,146.99	140.48	750	1,165.63	142.89	-18.64	-0.13
Make an argument	421	1,123.08	157.05	757	1,145.52	168.61	-22.44	-0.14
Break an argument	422	1,170.45	163.98	753	1,183.74	162.14	-13.29	-0.08

*Note: **p<0.01, *p<0.05 (significance tests adjusted for clustering of students within institutions)*

Table 5A. Mean Observed and Estimated Gaps in CLA Scores between Pell-Eligible and Non-Pell-Eligible Students

	Pell-Eligible vs. Non-Pell-Eligible Gaps in CLA Performance		
	Observed	Estimated	
Controlling for:		Pre-college academic	Pre-college academic and background
First-year students			
Performance task	-29.20**	3.77	6.37
Argument	-34.37**	-8.53	-2.31
Make an argument	-38.03**	-10.33	-3.47
Break an argument	-32.33**	-8.29	-1.15
Seniors			
Performance task	-13.09	4.54	8.22
Argument	-18.64	2.23	-0.96
Make an argument	-22.44	-1.62	-1.22
Break an argument	-13.29	6.92	-0.41

***p<0.01, *p<0.05 (significance tests adjusted for clustering of students within institutions)*
Note: Estimates are based on a regression model predicting different components of the CLA and controlling for students' background characteristics and pre-college academic performance, as indicated.

Table 6A. Mean Observed and Estimated Gaps in CLA Scores between Pell-Eligible and Non-Pell-Eligible Students in Urban and Non-Urban Settings

	Pell-Eligible vs. Non-Pell-Eligible Gaps in CLA Performance		
	Observed	Estimated	
Controlling for:		Pre-college academic	Pre-college academic and background
NON-URBAN			
First-year students			
Performance task	-20.84	0.08	3.93
Argument	-36.36**	-16.44*	-6.07
Make an argument	-40.37**	-19.73*	-7.61
Break an argument	-32.45*	-13.32	-5.36
Seniors			
Performance task	-28.69	-7.72	-5.19
Argument	-22.55	4.37	8.22
Make an argument	-33.29	-6.64	1.44
Break an argument	-11.33	15.92	16.01
URBAN			
First-year students			
Performance task	-37.28*	4.85	8.79
Argument	-28.61	-0.20	2.98
Make an argument	-31.26*	1.10	4.19
Break an argument	-29.04	-4.54	3.39
Seniors			
Performance task	17.27	23.41	28.03
Argument	-9.58	0.18	-11.25
Make an argument	-5.29	4.23	-4.03
Break an argument	-11.43	-2.19	-18.79

***p<0.01, *p<0.05 (significance tests adjusted for clustering of students within institutions)*
Note: Estimates are based on a regression model predicting different components of the CLA and controlling for students' background characteristics and pre-college academic performance, as indicated.

Table 7A. CLA Scores, by Race/Ethnicity

	African-American/Hispanic			White			Mean difference	Mean difference
	N	Mean	SD	N	Mean	SD	Raw scores	Effect size (SD)
First-year students								
Performance task	319	973.24	145.40	1,293	1,061.07	162.06	-87.83**	-0.54
Argument	277	991.78	123.46	1,296	1,056.28	137.67	-64.50**	-0.47
Make an argument	288	984.57	151.42	1,306	1,052.03	156.59	-67.46**	-0.43
Break an argument	281	991.91	146.36	1,302	1,059.77	158.25	-67.86**	-0.43
Seniors								
Performance task	141	1,083.46	161.81	1,015	1,195.60	166.57	-112.14**	-0.65
Argument	118	1,120.90	148.26	947	1,168.56	139.19	-47.66*	-0.34
Make an argument	119	1,092.35	165.60	953	1,148.09	162.67	-55.74*	-0.34
Break an argument	119	1,148.18	169.21	950	1,187.47	160.73	-39.29	-0.24

*Note: **p<0.01, *p<0.05 (significance tests adjusted for clustering of students within institutions)*

Table 8A. Mean Observed and Estimated Gaps in CLA Scores between African-American/Hispanic and White Students

	African-American/Hispanic vs. White Gap in CLA Performance		
	Observed	Estimated	
Controlling for:		Pre-college academic	Pre-college academic and background
First-year students			
Performance task	-87.83**	-9.25	-4.56
Argument	-64.50**	-13.92	-13.89
Make an argument	-67.46**	-11.78	-15.54
Break an argument	-67.86**	-21.16	-16.45
Seniors			
Performance task	-112.14**	-53.71*	-46.05
Argument	-47.66*	-15.24	-14.86
Make an argument	-55.74*	-23.07	-25.96
Break an argument	-39.29	-8.89	-5.57

***p<0.01, *p<0.05 (significance tests adjusted for clustering of students within institutions)*
Note: Estimates are based on a regression model predicting different components of the CLA and controlling for students' background characteristics and pre-college academic performance, as indicated.

Table 9A. CLA Scores, by Urbanicity

	Urban			Non-Urban			Mean difference	Mean difference
	N	Mean	SD	N	Mean	SD	Raw scores	Effect size (SD)
First-year students								
Performance task	755	1,033.15	159.75	994	1,049.54	164.11	-16.39	-0.10
Argument	723	1,032.94	133.00	969	1,050.99	139.55	-18.05	-0.13
Make an argument	738	1,026.41	153.35	978	1,048.04	159.49	-21.63	-0.14
Break an argument	730	1,035.92	156.75	973	1,052.90	158.45	-16.98	-0.11
Seniors								
Performance task	581	1,135.22	177.38	671	1,208.64	160.12	-73.42*	-0.43
Argument	540	1,140.75	148.47	630	1,174.53	134.88	-33.78	-0.24
Make an argument	548	1,115.28	174.35	630	1,156.82	153.68	-41.54	-0.25
Break an argument	543	1,163.87	166.95	632	1,191.94	158.24	-28.07	-0.17

*Note: **p<0.01, *p<0.05 (significance tests adjusted for clustering of students within institutions)*

Table 10A. Mean Observed and Estimated Gaps in CLA Scores between Students in Urban and Non-Urban Settings

	Urban vs. Non-Urban Gap in CLA Performance		
	Observed	Estimated	
Controlling for:		Pre-college academic	Pre-college academic and background
First-year students			
Performance task	-16.39	11.66	6.66
Argument	-18.05	-0.76	-3.08
Make an argument	-21.63	-3.13	-4.81
Break an argument	-16.98	-0.86	-3.42
Seniors			
Performance task	-73.42*	-52.18*	-53.02*
Argument	-33.78	-9.53	-11.64
Make an argument	-41.54	-17.44	-19.53
Break an argument	-28.07	-4.90	-6.78

***p<0.01, *p<0.05 (significance tests adjusted for clustering of students within institutions)*
Note: Estimates are based on a regression model predicting different components of the CLA and controlling for students' background characteristics and pre-college academic performance, as indicated.

Table 11A. Number of Cases and Performance Task Scores for First-Year Students across Three Samples

	CIC Full Sample		CIC Representative Sample		CAE Value-Added sample	
	N	Mean	N	Mean	N	Mean
URBAN						
College 1	152	991	152	991	142	996
College 2	86	991	86	991	86	991
College 3	89	1,091	89	1,091	89	1,091
College 4	96	991	45	1,012	45	1,012
College 5	79	1,162	57	1,159	57	1,159
College 6	53	1,061	53	1,061	53	1,061
College 7	98	1,019	44	1,016	44	1,016
College 8	86	1,015	50	1,030	50	1,030
College 9	17	1,048	17	1,048	14	1,077
NON-URBAN						
College 10	95	1,041	68	1,022	68	1,022
College 11	101	985	44	997	42	1,006
College 12	94	968	94	968	94	968
College 13	59	989	59	989	50	982
College 14	145	1,065	145	1,065	132	1,069
College 15	101	1,115	49	1,109	48	1,112
College 16	93	1,150	42	1,138	38	1,150
College 17	91	1,039	52	1,044	52	1,044
College 18	108	1,082	53	1,071	51	1,975
College 19	107	1,029	107	1,029	101	1,039

Table 12A. Number of Cases and Performance Task Scores for Seniors across Three Samples

	CIC Full Sample		CIC Representative Sample		CAE Value-Added Sample	
	N	Mean	N	Mean	N	Mean
URBAN						
College 1	112	1,075	112	1,075	106	1,078
College 2	54	1,102	54	1,102	52	1,098
College 3	49	1,203	49	1,203	49	1,203
College 4	64	1,120	48	1,133	48	1,133
College 5	82	1,218	43	1,184	42	1,186
College 6	41	1,171	41	1,171	22	1,202
College 7	106	1,126	106	1,126	105	1,126
College 8	63	1,109	41	1,117	28	1,122
College 9	10	1,184	10	1,184	9	1,207
NON-URBAN						
College 10	53	1,082	53	1,082	50	1,072
College 11	61	1,181	42	1,172	42	1,172
College 12	91	1,142	91	1,142	91	1,142
College 13	40	1,171	40	1,171	35	1,181
College 14	55	1,167	55	1,167	51	1,167
College 15	107	1,275	54	1,268	54	1,268
College 16	57	1,305	51	1,298	50	1,302
College 17	75	1,189	41	1,189	44	1,179
College 18	96	1,274	51	1,286	51	1,286
College 19	36	1,232	36	1,232	36	1,232

Table 13A. Institutional CLA Performance Levels

	CLA Total	Performance Task	Argument
URBAN			
College 1	Near	Near	Near
College 2	Near	Near	Near
College 3	Above	Near	Above
College 4	Near	Near	Near
College 5	Near	Below	Near
College 6	Near	Near	Near
College 7	Near	Near	Near
College 8	Near	Near	Near
College 9	Near	Near	Above
NON-URBAN			
College 10	Below	Near	Below
College 11	Near	Near	Near
College 12	Above	Above	Above
College 13	Above	Above	Near
College 14	Below	Below	Well Below
College 15	Near	Near	Near
College 16	Near	Above	Near
College 17	Near	Near	Near
College 18	Above	Above	Near
College 19	Near	Near	Near

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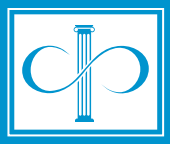

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