

Kean University

CAAP Test

Critical Thinking Report

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Office of Accreditation and Assessment



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Background

CAAP test is a standardized test designed by ACT, a non-profit organization, to measure student's knowledge in writing, reading, math, critical thinking, and science. Kean University used the CAAP Critical Thinking test in fall semesters of 2011-2013.

"The CAAP Critical Thinking Test is a 32-item, 40-minute test that measures students' skills in clarifying, analyzing, evaluating, and extending arguments. An argument is defined as a sequence of statements that includes a claim that one of the statements, the conclusion, follows from the other statements. The Critical Thinking Test consists of four passages that are representative of the kinds of issues commonly encountered in a postsecondary curriculum." (ACT CAAP CT homepage) It is a paper-and-pencil test administered in class. The scores range between 40-80.

The Office of Accreditation and Assessment (OAA) and the Office of General Education cooperated in administering the CAAP Critical Thinking test at Kean. After the test, the answering sheets were delivered to ACT and a total score of each student was sent back in a CD to the OAA office.

The CAAP Critical Thinking Test was given to freshmen and seniors in fall 2011. In 2012, only capstone courses from programs due for program review in fall 2012 (some from spring 2013) were selected for the test on a volunteer basis. In fall 2013, a randomly selected courses, including 11 Research & Tech courses (mainly sophomore) and 13 Capstone Courses (mainly seniors), were chosen to take the test. 366 students at Kean took the test in the fall 2013 semester, including 8 freshmen, 100 sophomore, 57 juniors and 199 seniors (2 NA). The class level and other demographic information were reported by students during the test. The fall 2013 sample is representative of the target population: Kean sophomore and seniors.

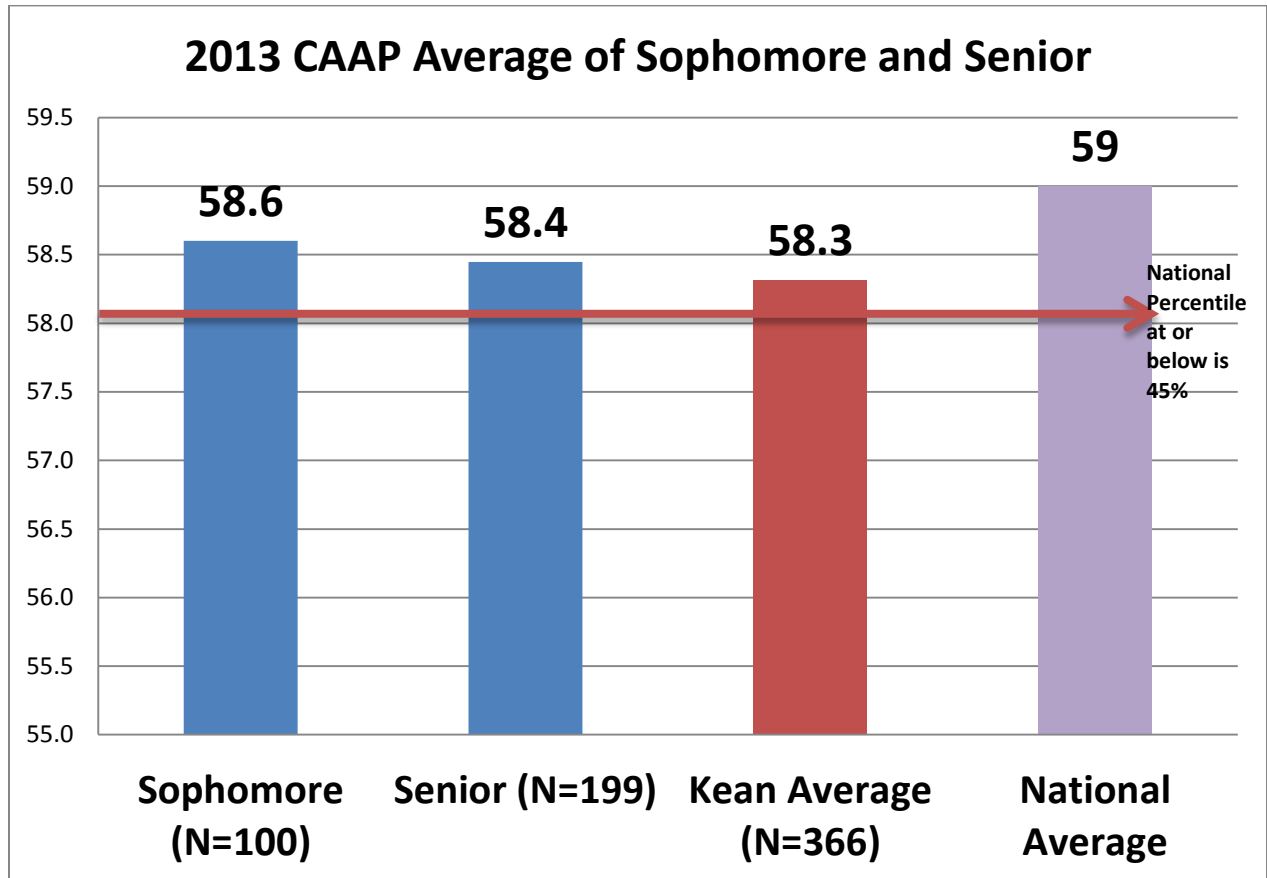
Analysis

Summary

- On average, Kean students scored as high as or higher than 47% of the people taking the CAAP Critical Thinking Test in the past three years in United States.
- There is no significant difference between the averages of sophomore (Mean 58.6) and seniors (Mean 58.4) at Kean.
- The average score in the Natural and Applied Sciences programs is the highest (59.7) among all Kean students. Students in those programs scored as well or better than 55% of the national test takers.
- Compared with other self-reported programs, Health professions (Nurse, Physical Therapy, etc.) and Community Services (Criminal Justice, Public Administration etc.) programs rank as the lowest among all on average, but still scored the same or higher than about 43% of the national test takers.

- Compared with national competitors, Kean’s average performance stay within top 53% (top 51% in 2011 and top 45% in 2012) in the past three years, indicating a competitive performance of Kean students.

Figure 1



The national cumulative percentiles are based on sophomores at all four year institutions that used CAAP during the last three years.

Freshmen and juniors are included in the Kean Average.

The average CAAP Critical Thinking score of fall 2013 Kean students is 58.3, which places Kean students at about the 47th percentile (47% of the national test takers scored equal to or below Kean). Considering the strength of the other institutions that also took the test over the past three years (national percentile base), the performance of Kean students can be considered a success. The Kean average also includes 8 freshmen and 57 juniors. Because participated freshmen and juniors are not representative of the 1st year and 3rd year population, no analysis was performed for freshmen and junior groups.

The average scores of both sophomore and seniors at Kean are very close to the national average. Sophomore (Mean 58.6) scored only slightly higher than seniors (Mean 58.4), but there is no significant difference. One possible reason for this lack of difference might be the influx of transfer

students in the Junior Year: most of the sophomores at Kean enrolled as freshmen and were required to take all General Education (GE) courses in their first two years to improve their critical thinking skills, while about 60% of the seniors at Kean are transfer students who skipped that step. For instance, in the Academic Year 2012-13, 63.3% of the graduating seniors were transfer students. So the only GE course that transfer students must take is the capstone course at the senior level. But this is simply a first idea. The result suggests that Kean should review progress at the 'fourth point' (the Junior Year) and potentially should implement more critical thinking practice at this juncture as well. The GE department in cooperation with Academic Services is in the process of constructing a GE core course for incoming transfer students that will form a rapid first introduction to the Kean GE SLOs among transfer students. This introduction will include critical thinking skills.

But in the interests of continuous improvement, we should also consider embedding more directed teaching and assessment of critical thinking skills into the Research & Tech courses for sophomores and capstone courses for seniors. It would also be useful, for triangulation purposes, to test a random sample of freshmen and junior students in the fall to have a fuller picture of the Critical Thinking skill proficiency at Kean.

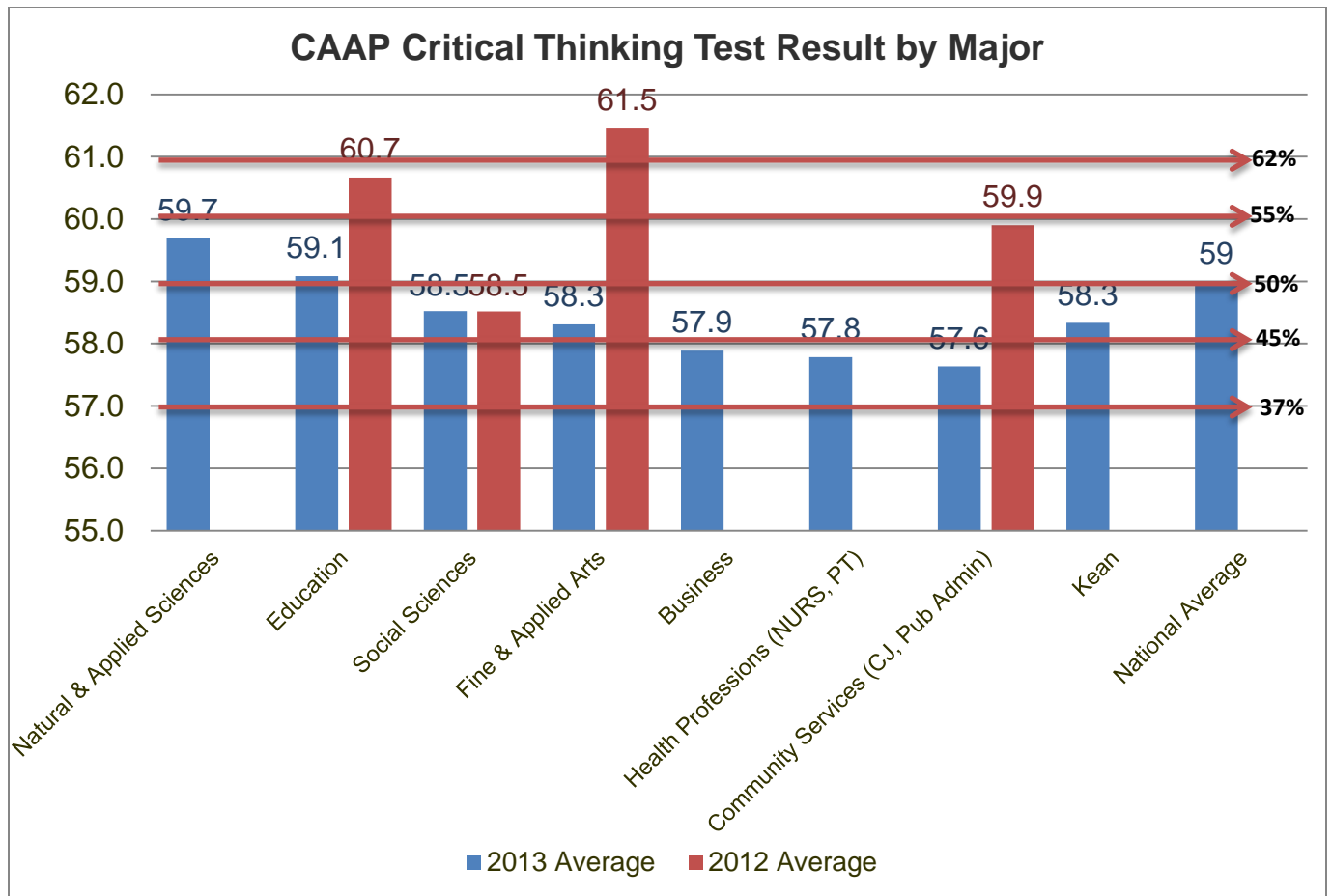
Table 1

CAAP Critical Thinking Average By Major

	2013					2012
	Mean	SD	Min	Max	Senior Mean	Mean
Natural & Applied Sciences	59.7	5.417	51	69	59.6	
Education	59.1	5.324	50	71	58.4	60.7
Social Sciences	58.5	5.437	48	73	58.2	58.5
Fine & Applied Arts	58.3	6.329	49	71	59.1	61.5
Business (N=108)	57.9	4.770	50	71	58.2	
Health Professions (NURS, PT)	57.8	4.441	51	66	**	
Community Services (CJ, Pub Admin)	57.6	5.185	49	70	57.5	59.9
Undecided	57.8	5.726	50	68		
Kean	58.3	5.230	48	73		59.7*
National Average						59

* Programs with less than 10 students are included

** Excluded due to limited N

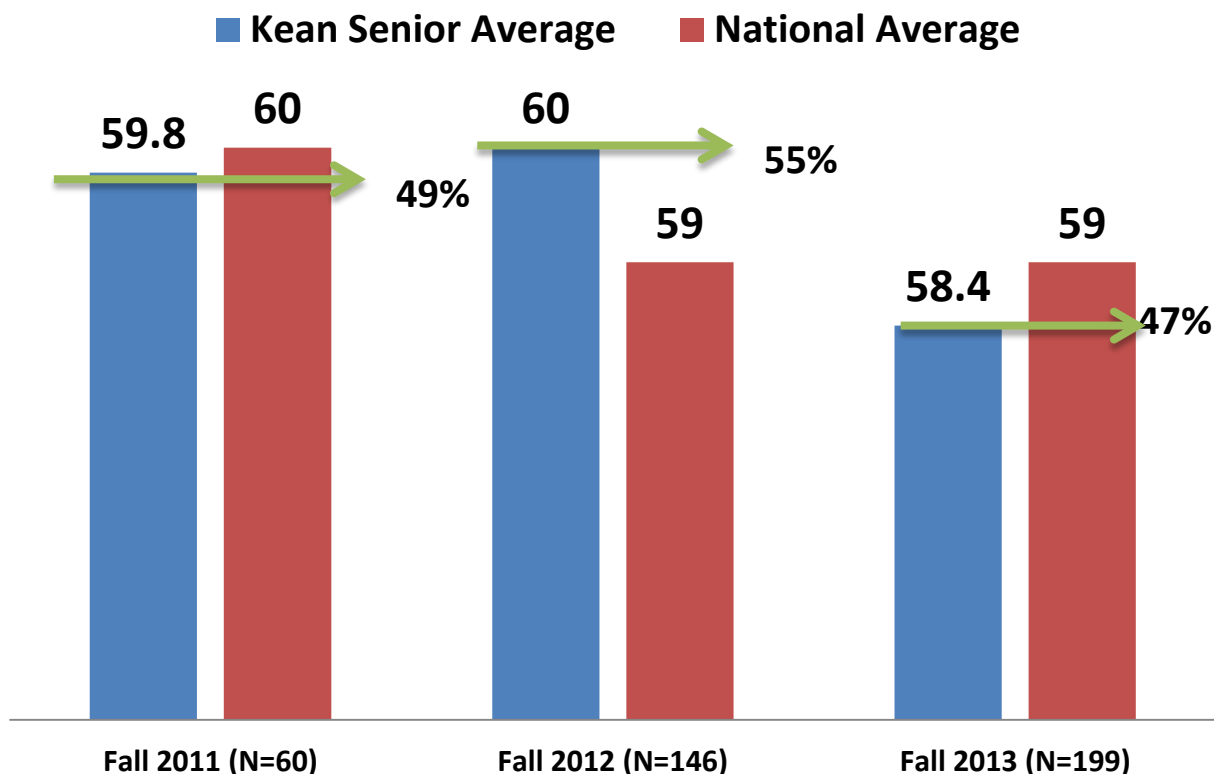


Based on self-reported majors as defined by ACT, the test results are analyzed by program. The average scores of Kean programs range between 57.6 - 59.7, remaining close to the national average (59). Students enrolled in Natural and Applied Sciences programs earned the highest average score (59.7) among all, with approximately 55% of the national test takers scoring as well or below (nationally 55% scored at or below 60), suggesting strong critical thinking skills among those students from science majors. Compared with other self-reported programs, Health professions (Nurse, Physical Therapy, etc.) and Community Services (Criminal Justice, Public Administration etc.) programs rank as the lowest among all on average, but still scored the same or higher than about 43% of the national test takers. These two areas could provide more critical thinking related practice in their curriculum and instruction.

We obviously need to ask specific programs to look into their courses more carefully. The CAAP test provides a 'suggestion' of where we need to look more carefully. The evidence does however suggest that our next step should be to direct assessment of Critical Thinking at the institutional level to Health and Community Service programs. We are already using the AAC&U rubric in Composition sections and Research and Tech, but the CAAP test allows us to be much more directed in its use. We should also open a discussion with related GE distributed courses, Capstone faculty and GE faculty teaching Research and Tech for these fields to consider how to teach actively

Critical Thinking in their classrooms. First thoughts would include more assignments and in-class discussion that challenge students to analyze real-world problems to improve their ability in critical thinking area; and/or co-curricular activity with a post event report that require students to analyze real-world issues more critically should be introduced to the Community Services and Health Professions programs, as well as other programs.

CAAP Fall 2011-13 Seniors Average Comparison



The sample from fall 2012 is not representative, thus the validity of comparison between 2012 and 2013 is reduced. It is also unclear how the fall 2011 data was collected. Therefore it is crucial to continue randomly selecting samples of Kean students in 2014 and 2015, and repeat it every three years at Kean to keep tracking change of students' critical thinking skills.

The data indicated that from 2011 to 2013, Kean students have been on a par with their peers in other institutions in US who took the same test in the past three years. National Percentiles at or below the average score of Kean 2011-13 test participants are 49%, 55%, and 47%, indicating a competitive performance of Kean students.

References

ACT Homepage: <http://www.act.org/caap/test/thinking.html>