El Camino College
Critical Thinking Institutional Learning Outcome Assessment Report
Spring 2020

Executive Summary

The Spring 2020 Critical Thinking ILO assessment was only administered to class sections that were slated to be online for the whole semester because of the coronavirus pandemic.

Students affiliated with a student support cohort passed the assessment at a rate 5% higher than those who were not affiliated with a student support cohort.

El Camino College continues to fall short in teaching critical thinking skills to Black or African American students. While assessments for skills related to Critical Thinking were closer to or on par with other groups, proficiency rate of Black or African American students in all three skills was lower compared to the rate achieved by other groups.

Introduction

El Camino College assesses one of its four Institutional Learning Outcomes (ILO's) every academic year. *Critical Thinking* was the ILO slated to be assessed during the 2019-20 academic year. This learning outcome, described below, was last assessed during the 2015-16 academic year.

Critical Thinking

Students apply critical, creative and analytical skills to identify and solve problems, analyze information, synthesize and evaluate ideas, and transform existing ideas into new forms.

- **Identify vital questions, problems, or issues and evaluate solutions.**
- **Analyze, compose, and assess the validity of an argument.**
- **Compute and analyze multiple representations of quantitative information, including graphical, formulaic, numerical, verbal, and visual.**

Methodology

The Critical Thinking ILO was scheduled to be assessed in a selection of courses with course level Student Learning Outcomes which were mapped to the Critical Thinking ILO during the Spring 2020 semester. Because of the COVID-19 pandemic and the closure of campus for in-person instruction, the Assessment of Learning Committee made the decision to evaluate all sections with SLOs mapped to the Critical Thinking ILO, which were scheduled to be offered

fully online from the beginning of the spring semester. Sections that had to rapidly transition to an online format were not included in the Critical Thinking ILO assessment.

Sample

During the Spring 2020 semester, there were 78 online class sections with SLO's linked to Critical Thinking ILO. Instructors teaching these sections received a rubric and rosters to document their scores. Twenty-five of these instructors returned rated rosters to Institutional Research and Planning. This resulted in 352 student assessments (margin of error 5.2%).

Method of Assessment

Instructors teaching the selected online class sections received a students' roster and the ILO rubric (see Appendix A) with instructions to evaluate the students using the same method (e.g., assignment, presentation, exam, etc.) they would normally use to assess the linked SLO. Students were rated according to each critical thinking skill identified above (identify, analyze, and conclude). Students met the Critical Thinking ILO when completing each skill with a score of 2 or 3 on a three-point scale.

Limitations

This study has several limitations. First, this assessment took place during a world pandemic. As a consequence, in-person classes were moved to fully online. The decision to assess only sections offered fully online from the beginning of the semester limited the types of courses and students from which we could sample, as several types of courses were not offered online. Second, there was a low rate of return, as less than 1/3 of the selected sections returned student ratings to Institutional Research and Planning. The limited sections created a sample of students that is not completely representative of the El Camino College student body. Some groups were oversampled (e.g., female and Asian students), and some other groups were under-sampled (e.g., Black or African American students). Finally, assessing the impact the pandemic itself had on the ILO results is challenging. There are a wide number of economic, emotional, health, personal and family responsibilities, as well as technological stressors that could have affected the outcome of this assessment.

Results

Instructors returned ratings for 352 students, resulting in an overall ILO proficiency rate of 76.4% (see Table 1). This was a 7.6% increase compared to the 2016 ILO assessment. Proficiency in the ILO required that students pass all three critical thinking skills with a score of 2 or 3. The proficiency rates for each critical thinking skill were higher than the overall proficiency rate, since at least 85% of students demonstrated having each skill.

Table 1: Critical Thinking Skills Proficiency Rate

ILO	Rate	Students
Overall	76.4%	352
Identify	86.9%	352
Analyze	86.6%	352
Conclude	84.9%	352

When Critical Thinking was assessed in 2016, there were some differences in outcomes for students based on gender, race/ethnicity, and disability status. There was no evidence of a difference when disaggregated by unit accumulation. For the 2020 assessment, outcomes were examined by gender, race/ethnicity, disability status, participation in a "campus cohort"[1], economic disadvantage status[2], and unit accumulation. Due to the unique nature of the current year, students were also disaggregated by type of enrollment (whether students were initially only enrolled in online courses, or whether they had initially enrolled in some face-to-face courses).

There were virtually no negative disproportionate impacts in outcomes based on any of these characteristics (see Table 2). Students performed similarly to the overall average across these disaggregated groups.

Students with an indicated disability status who were affiliated with the Special Resource Center performed 11% higher than the overall sample. Although there were only 16 students in the sample, this was a 28% increase over the 2016 assessment.

The ILO proficiency rate was 5% higher for students affiliated with any campus cohort group compared to students who were not in a cohort. Cohort affiliation was not considered in the previous assessment so there are no comparisons for this characteristic.

Students considered economically disadvantaged, based on the financial aid received through the California Promise Grant and the Pell Grant, were assessed just above the college average. These students' ILO proficiency rate was the same as the college average in 2016.

 Presumably, students who have completed more college courses are better prepared to use the skills required to complete the ILO assessment. In 2016, there was virtually no difference in assessment results based on unit completion. The 2020 assessment goes against the expected

[1] Campus cohorts include programs that offer additional resources and guidance to students such as: Veteran Services, Guardian Scholars, Special Resource Center, EOPS, FYE, CalWORKs, Athletics, Project Success, Puente, MESA/ASEM and the Honors Transfer Program.
[2] Economic disadvantage is determined based on financial support received through the California Promise Grant or Pell Grant.

presumption as students with a lower number of completed units performed 10% higher on the ILO assessment than students who had already achieved the 60 units required to graduate.

No difference in assessment outcomes was observed for students who were scheduled to attend classes fully online compared to students who had had initially enrolled in some face-to-face sections.

*Table 2: ILO Proficiency Rate by Characteristic*

Variable	Characteristic	ILO Proficiency Rate	Students
Overall		76.4%	352
Gender	Female	75.7%	218
	Male	77.6%	134
Disability Status		87.5%	16
Campus Cohort	Any cohort	79.6%	142
	No cohort	74.4%	210
Economic Disadvantage		77.3%	220
Units Completed	<15 units	82.5%	80
	15-29 units	83.3%	24
	30-59 units	76.5%	81
	60+ units	72.5%	167
Initial Spring 2020 Enrollment Status[3]	Online only	77.2%	79
	Online & on campus	78.0%	245

When examining outcomes by race/ethnicity (see Chart 1), most groups performed better in Spring 2020 than they did in Spring 2016, with the exception of the White, non-Hispanic population, which declined by 3%. However, even though Black or African American students showed gains over the previous assessment, these students' performance is still more than 10% below the college average.

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[3] There were 28 students whose status was ambiguous because other enrolled sections were not coded as online and did not have a location available so the number of students will not add to 352.

Chart 1: ILO Proficiency Rate by Race/Ethnicity
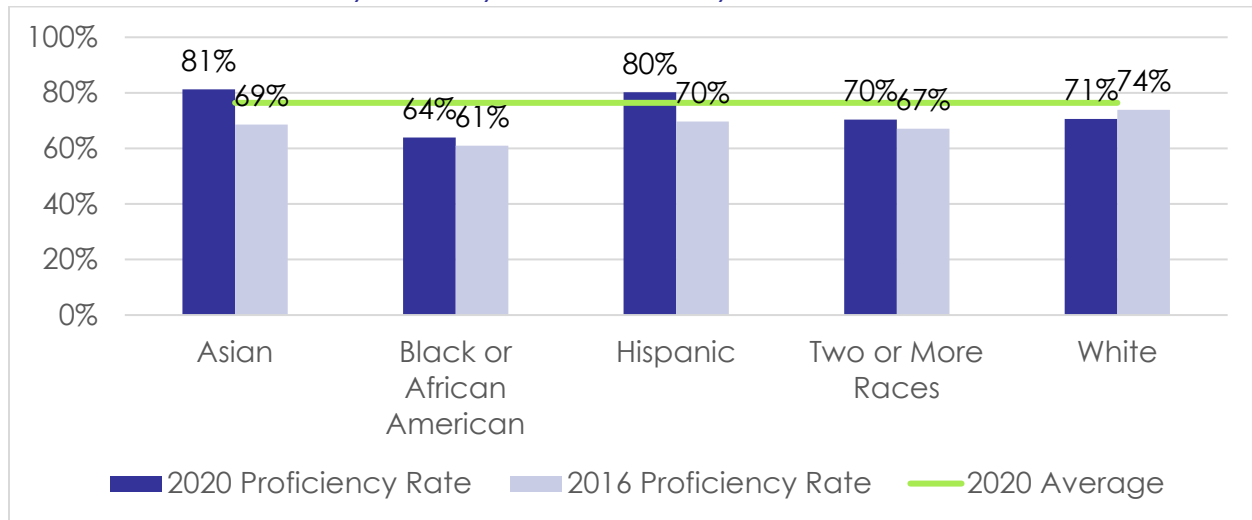
In the 2016 assessment, the ILO lowest proficiency rate for Black or African American students was the Conclude skill (61%). In the 2020 assessment, the students' performance for this skill improved by 22% (see Chart 2). The lowest skill proficiency rate for Black or African American students in 2020 was the Analysis skill (78%), four percentage points over the 2020 ILO average. However, this rate was approximately 10% below the Asian, Hispanic, and White rates for the Analysis skill. Conversely, White students passed the Conclusions skill at a rate 9% lower than Black or African American students. Unfortunately, the sample did not contain enough examples of Pacific Islander students, another group the college is interested in monitoring for equity purposes.

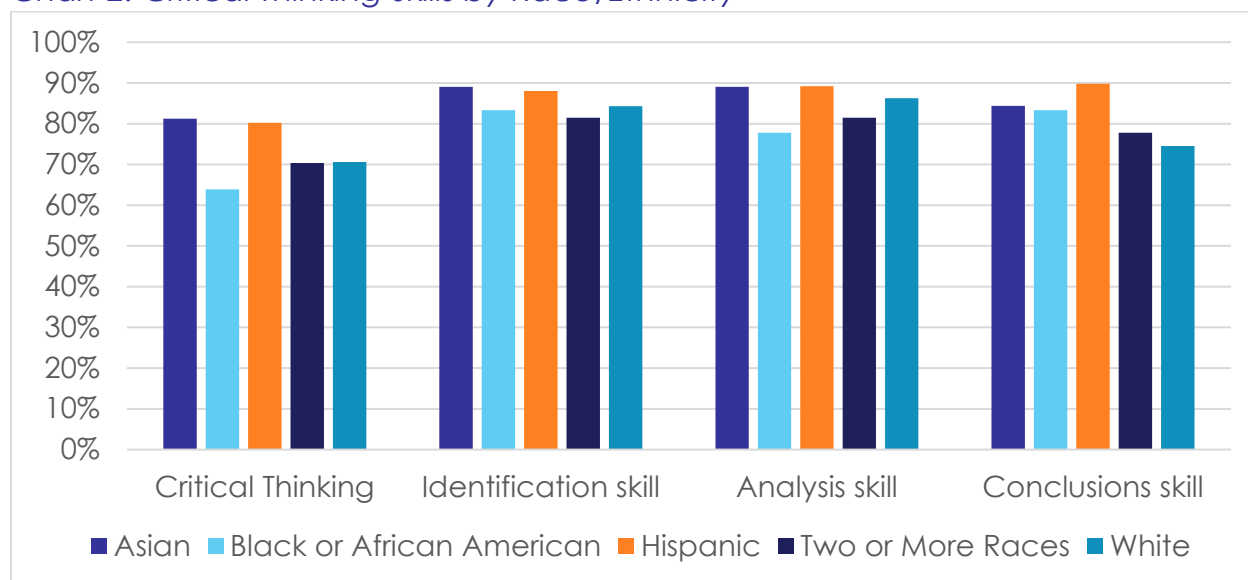*Chart 2: Critical Thinking Skills by Race/Ethnicity*

Table 3: Critical Thinking Skills by Race/Ethnicity

Row Labels	Critical Thinking	Identification skill	Analysis skill	Conclusions skill
Asian	81%	89%	89%	84%
Black or African American	64%	83%	78%	83%
Hispanic	80%	88%	89%	90%
Two or More Races	70%	81%	81%	78%
White	71%	84%	86%	75%

Conclusions

The unique circumstances of the 2019-20 academic year are a reason to be cautious when comparing Critical Thinking ILO past results with those from the 2020 assessment. The COVID-19 pandemic led the Assessment of Learning Committee to only assess course sections intended to be online from the beginning of the semester. Students enrolled in these courses intended to be online throughout the semester, which may be a different population than those who intended to take courses in person. The results of the assessment indicate higher performance than in 2016. The college shows 76% of assessed students achieved the Critical Thinking learning outcome. This result is almost 8% higher than the results of the 2016 assessment. However, because this assessment used a more specific population, the college should be cautious about attributing the improved ILO proficiency rates to actions El Camino undertook during the period of time between both assessments.

Within the population assessed, the 2020 results show little evidence of disproportionate impact among the students the college has identified for equity support. One notable observation is the higher performance of students who receive support through a cohort (including those students who get support through the Student Resource Center) compared to students who are not involved in a cohort. This evidence supports the strategy of the college to provide comparable cohort program supports to all students through the Guided Pathways Success Teams.

El Camino College still falls short when it comes to Black or African American students' assessments. The three individual Critical Thinking skills of Black or African Americans were all assessed near 80%. However, the proficiency rate of Black or African American students in all three skills was lower compared to the rate achieved by other groups.

Recommendations

The data indicates Black and African American students are proficient when individual critical thinking skills are assessed separately, but not as proficient when critical thinking is assessed as a whole. This may evidence that these students do not fully understand what is expected from their performance to achieve critical thinking full proficiency (as opposed to identification, analysis, and conclusion skills proficiency). Academic programs may consider examining how they convey the expectations they have for mastering the critical thinking skill. This involves programs evaluating how content is delivered to ensure students with various backgrounds and learning styles understand the intended message. Special emphasis should be placed on how Black and African American students best learn and interact in the classroom.

Additionally, faculty members might benefit from reflecting on how differences on cultural practices (including language) could lead to bias when assessing the work of minoritized students. Are there instances where Black or African American students are performing well on critical thinking, but because of dominant cultural practices influencing assessment, their work is being evaluated lower than it should be? Introspective reflection and regular training (e.g., unconscious bias, cultural competency, etc.) may help faculty members be more aware and critical about their assessment practices.

The data shows that students' affiliation with a student support cohort positively impacted their ILO proficiency rate. Therefore, the College should continue working on increasing the number of students who are part of these learning and support communities.

Appendix A: Critical Thinking Rubric[4]

ILO #1 – CRITICAL THINKING

Students apply critical, creative and analytical skills to identify and solve problems, analyze information, synthesize and evaluate ideas, and transform existing ideas into new forms.

- Identify vital questions, problems, or issues and evaluate solutions.
- Analyze, compose, and assess the validity of an argument.
- Compute and analyze multiple representations of quantitative information, including graphical, formulaic, numerical, verbal, and visual.

	0=Missing	1=Developing	2=Proficient	3=Exemplary
Identify	Introduction or identification of problem is not present	Problem is identified or introduced in minimal or simplistic way	Problem is identified or introduced clearly and with support	Problem is identified or introduced clearly and with all relevant information necessary for full understanding
Analyze	Analysis, solution, or plan is not present	Analysis, solution, or plan presents limited or biased perspective	Analysis, solution, or plan presents effective or comparative perspective	Analysis, solution, or plan presents full, comparative, or original perspective
Conclude	Conclusion or synthesis is not present	Conclusion or synthesis is disconnected or oversimplified	Conclusion or synthesis is clear and connected to relevant information	Conclusion or synthesis is logical, well-informed, and strongly connected to relevant information

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[4] Adapted from Palomar College Learning Outcomes Council,
http://www2.palomar.edu/pages/sloresources/rubrics/critical-and-creative-thinking-rubric/