

Peirce College 2019-20 Institutional Learning Outcomes Assessment Report

This report is divided into three main sections. The first section is a report of the action items scheduled at the end of the previous period to be completed in 2019-20. Next is a section dedicated to the current year's assessment activities' methods, results, and implications. Finally, action item plans for the upcoming 2020-21 year are established and discussed.

2018-2019 Action Items in Review & Status Updates

Action items determined after the 2018-19 ILO assessment cycle regarding quantitative literacy included the following bulleted items. The current status of each item is provided in italics.

- Assure that students take MAT 101 & 102 early in their academic careers given the foundational nature of these courses. *The importance of students' tackling their mathematics requirements early in their studies has been communicated to academic advisors. A review of MAT requirements in the degree programs is still pending*
- Consider extent of and prospects for closing gaps from departmental needs analysis regarding ratios and data interpretation / analysis
- Update course-level outcomes in MAT 101, MAT 102 – *Still pending*
- Reconsider the role of MAT 102 in advancing Peirce students' mathematical / quantitative literacy needs; make MAT 101 a prerequisite for MAT 102 . *MAT 101 has been added as a prerequisite to MAT 102. Given the emphasis in the degree program divisions needs reports on quantitative data analysis, BIS 111, our spreadsheet course, was also added as this course addresses a key tool for data representation and analysis*
- Consider conducting a more comprehensive, curriculum-wide objective test QA initiative using item-level analysis via Canvas – *this item was tabled for having a low benefit to cost ratio*
- Review material in MAT 101 related to tax returns and banking applications and streamline for a focus on generalized applied problem solving rather than specific knowledge of or techniques related to tax preparation and/or finance
- Consider the prospect of adding a review of fractions and ratios to the material on percents in MAT 101. *Fractions are now addressed in review material in Week 1 content*
- Provide pointers to instructors in impacted courses to refresher material related to percentages, decimals, fractions, ratios and related foundational areas to help students with quick in-course refreshers. *This resource is being developed.*
- Review and, as necessary, revise the low discrimination question on the MAT 101 final examination. *Review and revision of MAT 101 objective assessment is complete and has been implemented*

2019-2020 Assessment Activities

Introduction

Since 2008 it has been Peirce's practice to assess one of its six institutional learning outcomes (available in Appendix A below) each year using a faculty-led, rubric-based direct assessment of student learning. 2019-20 was the year of critical thinking assessment, which had last been assessed by similar means in 2012-13. The following sections summarize the methods, results and implications of that assessment.

Method

Approach

Assessment occurred via a descriptive, analytic critical thinking rubric drafted by Dr. John-Patrick Schultz, our lead philosophy faculty member and coordinator for COM 312, Practical Reasoning, which is a capstone-like critical thinking course required of all Peirce bachelor's students, typically taken in their final year of study. The rubric was then used for a norming exercise and subsequently revised collaboratively by the full Peirce faculty in a live session held in January 2020 in response to a preliminary norming exercise conducted using the draft rubric. The final version of the rubric used in the assessment can be viewed at

<https://docs.google.com/document/d/19vsozG3LQ9D0F3E1WXU1vD16UUfZe4FUjZ7gM6I1-ul/edit?usp=sharing>. The revisions to the draft rubric related to removing some unfamiliar technical language and clarifying a few descriptors. (The original draft rubric used can be viewed at https://docs.google.com/document/d/1HFLEYp6Pg0ldtr-QGwFz5sKo_D1jx2Vq/edit?usp=sharing&oid=114553901147419468229&rtpof=true&sd=true.)

Assessors

All full-time faculty members -- 25 in all -- participated in the assessment. Each assessor read and rated either 12 or 13 papers. Each paper was read independently by 3 assessors. Scores were submitted via the online form available at https://docs.google.com/forms/d/1hgwKP3TkzokZDaOQHVCWcXGhjnUw-nm6YZ_M6k41yJs/edit.

Learning Outcome Targeted

In keeping with our multi-year ILO assessment plan, we examined Peirce ILO 2, "Solve problems using critical thinking, analytical, and quantitative skills," focusing specifically on critical thinking skills (given that quantitative literacy and analytic skills had been assessed in the prior (2018-19) period.

Student Work Targeted

We seek to understand student learning outcome performance as close to graduation as possible. Additionally, evaluating the same student work for all students is ideal for both ease of evaluation and consistency. Fortunately, we require all bachelor's students to complete COM 312, Practical Reasoning, a course which we chose to evaluate the final argument paper for COM 312, Practical Reasoning, a course required of all bachelor's students that serves as an informal capstone to the Peirce general

education core, and that requires students to complete all other required GE courses prior to enrollment and is thus normally taken in the final year prior to graduation.

The COM 312 syllabus is available at [Syllabus for Master COM312 Critical Reasoning.pdf](#). Multi-stage instructions to students regarding how to complete the assignment can be found in the document [Final Paper \(Final Copy\).docx](#).

Sample

Our target population was the 171 students graduating with a bachelor's degree between June 1, 2018 and September 31, 2019. Of those students, 126 were working from a set of degree requirements that included COM 312, Practical Reasoning, the course that was our assessment target. Of those students, two transferred COM 312 from another institution, 8 students participated in a section of COM 312 that had them work together on their final papers in small teams (a practice since discontinued), and ten students' papers were turned in person or were otherwise inaccessible in the LMS archive, yielding a total of 106 papers to be evaluated, which represents 62% of the total bachelor's graduating class. The average career GPA of the 106 students in the sample was 3.4, nearly identical to the overall population GPA of 3.3, giving us at least some indication that the sample students were representative of the population of interest.

Breakdown of the sample students by degree program was as follows:

Program	Count	AVG GPA	AVG COM 312 Grade
Business	58	3.3	3.1
Healthcare	17	3.4	3.5
Information Technology	9	3.3	3.2
Legal Studies	22	3.3	3.2
Total	106	3.4	3.2

Norming

We conducted a "trial run" assessment in March 2020 to gather feedback on the assessment rubric and to calibrate our ratings for improved consistency and reliability. Papers selected for the norming exercise were not among those included in the actual sample and were selected specifically to represent a wide range of achievement in the outcome of interest. Each rater was presented with a personalized report situating their individual scores among those of the group as a whole. Further detail regarding the norming exercise can be found in the [ILOA 1920: Critical Thinking Norming Results](#) document. A sample customized norming report given to each faculty member participating in the norming exercise

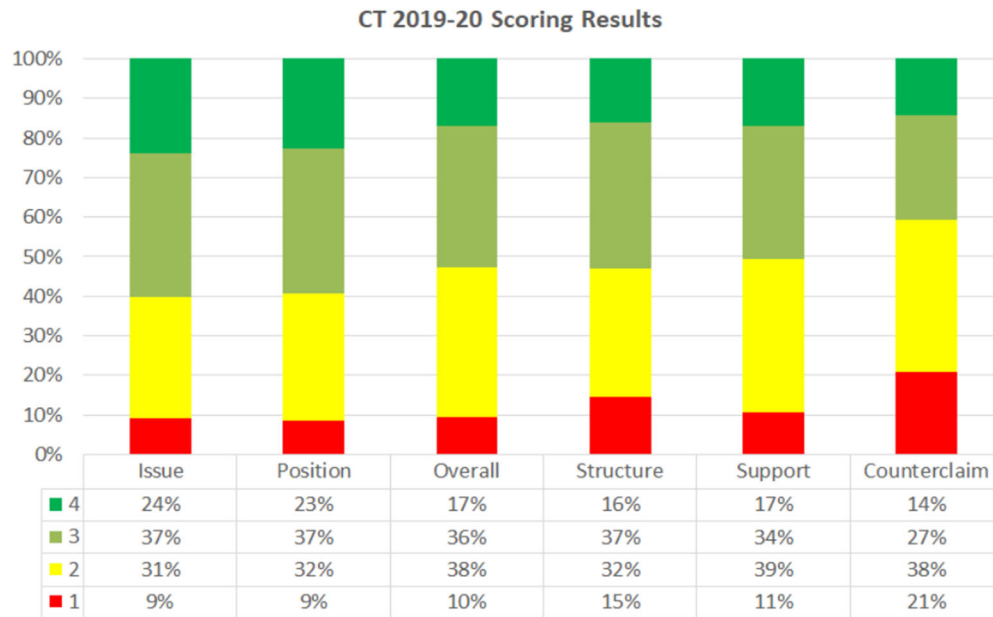
can be found here: https://docs.google.com/document/d/1_y6LHSct2C7Q3O8A-QPpG4Pkj84O9P27agyWT4BH0w/edit?usp=sharing.

Assessment Results

Per Criterion

Criterion	Emerging	Developing	Competent	Exemplary	Competent+
Issue	9%	31%	37%	24%	60%
Position	9%	32%	37%	23%	59%
Structure	15%	32%	37%	16%	53%
Support	11%	39%	34%	17%	51%
Counterclaim	21%	38%	27%	14%	41%
Overall*	10%	38%	36%	17%	53%

* Note that this overall score is not an index, average or composite of the other scores necessarily, but was rather assigned separately by individual raters to allow them to evaluate a paper's overall impact independently, to account for instances where the whole is dissimilar to the sum of the parts.



Analysis & Implications

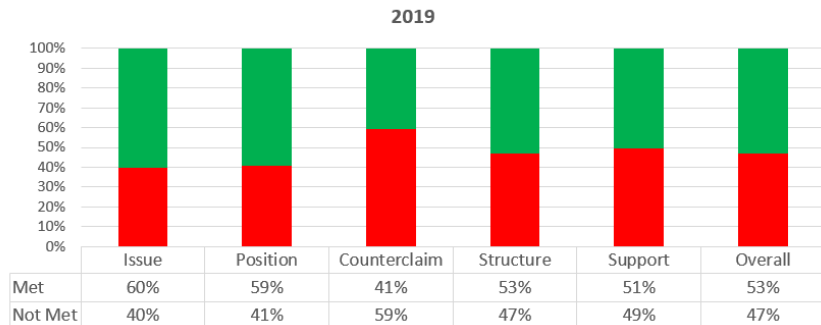
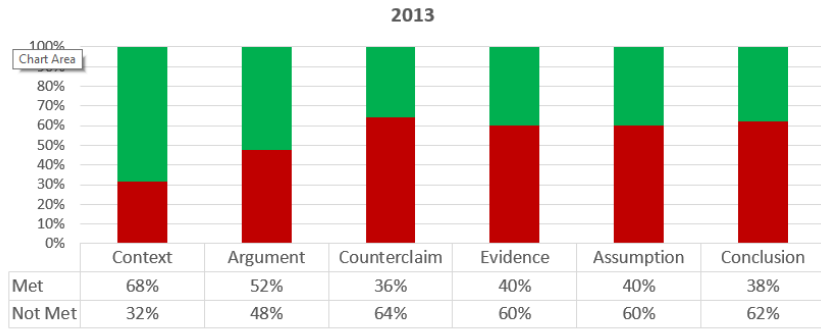
Criteria Priorities

The righthand column of the “Per Criterion” table above shows the per criterion percentage that received either a score of either “competent” or “exemplary”, the two categories consistent with or better than the faculty’s collective expectation of student performance at graduation. Our benchmark for an average per-competency proficiency percentage is 75% when assessing students near graduation. As such, with an overall 53% competent-or-better across categories, we fall well short of our benchmark here, although considerably less so in some areas than in others. Students struggled most at addressing counterclaims, with only 41% meeting faculty expectations in this area. Conversely, in the areas of identifying the relevant controversy at issue and in establishing a specific claim regarding that controversy, students met expectations 60% of the time. These results are consistent with expectations, as identifying an issue is generally easier than staking a specific claim, which in turn is easier than structuring, which is easier than supporting, and so on. In light of this, while critical thinking as a whole must be a priority for improvement efforts, there is no one specific component of critical thinking, except perhaps for addressing counterclaims, that stands out as surprisingly underperforming. Specific efforts for improvement will be discussed in the “Improving Critical Thinking Outcomes” section that follows.

Critical Thinking Performance over Time

The last time Peirce’s critical thinking ILO was assessed was 2013. At that time, we had yet to implement COM312 and we had a different faculty lead for philosophy. We assessed critical thinking via HUM 300, The Great Thinkers , an upper-level, elective general education course. The HUM 300 final project directly called upon students to exhibit critical thinking. Indeed, because it is generally fairly rare for students to elect 300-level courses to satisfy their general education requirements, and because this course had such an explicitly philosophical orientation, it is quite possible that its students’ critical thinking abilities actually overstated those of the student body as a whole at the time. That fact notwithstanding, critical thinking assessment outcomes were well short in 2013 of what we found in 2020:

Year	% Proficient + Overall
2019-20	53%
2012-13	44%



While the results from the two assessment projects are not entirely comparable, both rubrics are indexed to faculty expectations, and from that perspective they should allow for at least informal comparison. Further, a crosswalk between the criteria used in the two rubrics can be established (see the slide deck at https://docs.google.com/presentation/d/1wv_pT83UNtjBPFiKxmqlYG_TKjh8XY2iOXJA3jMuIDU/present?slide=id.g870ebe6978_0_30, pages 14-16 for details). While the evidence is preliminary, the ostensible improvement is marked, and we are heartened that the changes made to the general education curriculum in the period intervening 2013 and 2020 and particularly the introduction of COM 312 have led to a marked improvement in Peirce graduates' critical thinking skills, and that further evidence gathering will show more conclusively that these improvements have been sustained and significant. Nevertheless, we have not lost sight of the fact that student performance in critical thinking is still short of where we want it to be.

Critical Thinking Compared to Other ILOs

The following table shows the percentage of scores reflecting proficiency or better in the last year assessed for each of the three ILOs that are assessed via rubric:

Year	ILO	% Proficient +
2019-20	Critical Thinking	53%
2017-18	Information Literacy	58%
2016-17	Written Communication	56%

Summary

Improving critical thinking pedagogy needs to remain a high priority at Peirce. There is still much work to be done to move toward our 75% proficient+ goal. Fortunately, there is some encouraging, albeit preliminary evidence that student performance has improved in the last half decade. We are hopeful that this trend will continue into the next.

Meta-Assessment

In addition to measuring student performance, we also strive to understand and improve our performance as raters over time. We work to assure accuracy by iteratively and collaboratively developing our assessment rubric and reflecting on and seeking to improve its validity. We assess the precision of our measurement by looking at inter-rater reliability, i.e., the reliability of our assessments one rater to the next. Meaningful, actionable assessment is predicated on the assumption that the raters are able to agree consistently on what constitutes excellent or subpar work.

While there are many ways to assess inter-rater reliability, we find one of the most straightforward ways to also be the most instructive: by doing a pairwise comparison of each rater's score for a given paper and criteria to every other such score and calculating the percentages where there is an exact match, scores that are adjacent to each other (i.e. off by one), scores that are off by two, and scores that are antithetical (i.e. off by three) and then comparing these percentages to past performance and to those results expected to arise by chance.

Accuracy	2020 Critical Thinking	2018 Info Literacy	2017 Writing	Random Chance
Exact Match	33%	36%	35%	25%
Off by 1 or Match	79%	85%	83%	62.5%
Off by 2 or Less	98%	98.5%	98%	87.5%
Maximum Disagreement	2%	1.5%	2%	12.5%

Inter-rater Reliability Analysis

Rater agreement was solid in 2019-2020, with 79% of the pairwise rating comparisons either matching or only being off from one another by one scoring echelon. Agreement was similar to that of recent writing and information literacy assessments, which may be somewhat surprising given that critical thinking is arguably a more abstract concept than the others.

2020-2021 Plans & Action Items

Improving Critical Thinking Outcomes

- Curriculum
 - Consider whether it makes sense for a critical thinking course to be a *culminating* GE course given that critical thinking is absolutely foundational to academic success generally
 - Assure that COM 312 is well supported by several other critical thinking-rich assignments 100- and 200-level GE and non-GE classes across the curriculum
- Pedagogy
 - “Selling” CT to students as crucial – in class, at work, in life
 - Modeling good CT ourselves
 - Having high expectations regarding CT
 - Providing examples of good CT
 - Embracing teaching methods that promote CT (e.g., Socratic or other dialectical method, student debates, etc.)
 - Crafting assignments that promote CT
 - Evaluation that explicitly calls for critical thinking (e.g., Specific CT rubric items in non-COM 312 courses)
 - Swapping limited critical thinking assignments – reaction/opinion papers, assignments requiring description or exposition, “book report” assignments – for critical thinking-centric assignments – justify, defend, argue, critique, recommend, or anything else centered on a thesis claim or argument to be made and defended
- Faculty development
 - “Maximizing opportunities for Critical Thinking in your course” professional development in 2020-21
 - Collaborative rubric development session(s)
 - CT Audit of 100- and/or 200-level GE electives

Plans for Ongoing Routine ILO Assessment

In 2020-21, Peirce will undertake a review of its ILO 1, Communicate clearly and effectively both orally and in writing, with a focus on writing.