

APPENDIX IV

Re: General Education Student Learning Outcomes Assessment Report – Life and Physical Sciences

During the 2019-2020 academic year, Hunter College assessed student learning outcomes in the *Life and Physical Science* (LiPS) area of CUNY’s Common Core. This assessment was part of the five-year assessment plan for General Education approved by the Hunter Faculty Senate on February 29th, 2018. A representative sample of courses from across the College was selected by the General Education Requirements (GER) and Academic Assessment & Evaluation (AAE) Committees.

CUNY outcomes examined included:

1. Identify & apply the fundamental concepts & methods of a life or physical science.
2. Apply the scientific method to explore natural phenomena, including hypothesis development, experimentation, measurement, data analysis, & data presentation.
4a. Gather, analyze, & interpret data...
3. Use the tools of a scientific discipline to carry out collaborative laboratory investigations.
4b. ...and present it in an effective written laboratory or fieldwork report.
5. Identify & apply research ethics & unbiased assessment in gathering & reporting scientific data.

Participation:

Sections from five departments were included in our sample; 1 department did not submit a report. Each department agreed to assess the LiPS learning outcomes in two laboratory sections of roughly 20 students each. In addition, not all departments assessed all learning outcomes, resulting in different samples sizes for different outcomes, ranging from 53 or 54 students in two sections for outcomes 3a and 3b, to 90 students for outcomes 4b and 5, 130 students for outcome 2/4a, and 204 students for outcome 1. It is important to note that one of the departments used all students in the 94-student lecture class, which was one of the options for that outcome. This did reflect and impact results of outcome which asked to “identify and apply the fundamental concepts of a life or physical science”.

The summary of results can be found within this chart. The complete assessment report, written by Director of Assessment Joel Bloom, is also attached with this report.

Summary of 2019-2020 Life and Physical Sciences Assessment Results

Life and Physical Sciences Student Learning Outcomes	Does not Meet Expectations		Approaches Expectations		Meets Expectations		Exceeds Expectations		Total	Combined Meets + Exceeds
	N	%	N	%	N	%	N	%		
1. Identify & apply the fundamental concepts & methods of a life or physical science.	32	16%	44	22%	69	34%	59	29%	204	63%
<i>1. (with lecture results omitted) Identify & apply the fundamental concepts & methods of a life or physical science.</i>	7	6%	23	21%	40	36%	40	36%	110	73%
2/4a. Apply the scientific method to explore natural phenomena, including hypothesis development, experimentation, measurement, data analysis, & data presentation. 4a. Gather, analyze, & interpret data...	9	7%	24	18%	58	45%	39	30%	130	75%
3a. Use the <u>tools of a scientific discipline</u> to carry out collaborative laboratory investigations.	1	2%	1	2%	24	45%	27	51%	53	96%
3b. Use the <u>tools of a scientific discipline to carry out collaborative laboratory investigations.</u>	0	0%	6	11%	16	30%	32	59%	54	89%
4b. ...and present it in an effective written laboratory or fieldwork report.	4	4%	20	22%	23	26%	43	48%	90	73%
5. Identify & apply research ethics & unbiased assessment in gathering & reporting scientific data.	12	13%	9	10%	52	58%	17	19%	90	77%

Reflection and Recommendations

With eight of ten sampled sections in four of five sampled departments participating in the 2019-2020 Life and Physical Sciences assessment, this assessment can generally be considered successful from both a qualitative and quantitative perspective, especially considering some of this work was done during the Spring 2019 emergency shift to online learning.

Participating faculty did an excellent job of selecting tests, assignments, and other types of student work to match the outcomes being assessed, and skillfully utilized the rubrics provided. Especially impressive was that most departments completed the reflective and more qualitative parts of the report, and actively thought of ways to alter pedagogy and instruction moving forward based on the results of their examinations of learning outcomes.

Senate Committees and Assessment Director Recommendations:

Assessment is always easier when things are simple and clear. As a result, we included chairs and assessment coordinators from designated departments in the process from the beginning. All parties assisted in working on rubrics and talking out the process together. The work of assessment coordinators was crucial to the success of the LiPS assessment as a whole.

A recommendation would be to be careful of overuse of the rubric category “exceeds expectations” which is meant to imply exemptional work. Assessment directors will improve rubric design and have conversations with faculty to stress this point.

Departmental and Program Considerations:

We suggest that faculty and departments continue to reflect on how their course fit into the larger scope of Hunter's general education. Also, we encourage those reflection to consider specifically how these courses align with the stated outcomes of general education at Hunter. To this end, we encourage the departments and programs involved in the assessment of general education to participate in the appropriate workshops offered through the Office of Assessment. We hope that this participation will help departments and programs become involved in conversations regarding general education requirements at the college level. These conversations can also produce departmental or program specific awareness of rubric categories and strengthen the way assessment is tailored at the level of individual departments or programs.

We recommend that departments and programs continue moving toward fully integrating assessment into larger discussions on curriculum and pedagogy in a consistent way. This is especially important in relation to online assessment and how to integrate the GER assessment report into continuing discussions. We recommend that departments and programs continue moving toward understanding assessment as part of the learning process, and not a separate component of learning and teaching, especially regarding the institutional requirements of general education.