

The 2020-21 assessment for Learning Outcome #2 included survey results for five students who graduated between May 2019 and April 2021. We combined two years' worth of data to obtain an adequate sample size of students. Scores were averaged across respondents for each of the two questions for each student; the percentage of students exceeding the minimum criteria (3.0) are reported here.

Results

Between 2019 and 2021, 80% of MS students completing their theses in Biological Sciences obtained a mean score of at least 3.0 from their thesis committee members on the “Mastery of Research Design” the “Mastery of Research Design and Execution” questions. The average score across the five students was 3.57 for “Mastery of Research Design” and 3.53 for “Mastery of Research Design and Execution”. The proportion of students (80%) meeting the minimum standard meets our stated goal of 80% for both the “Mastery of Research Design” and the “Mastery of Research Design and Execution” questions.

2020-21 Biological Sciences MS Program Learning Outcome Assessment - Mastery of Research Design and Methods						
Student	1	2	3	4	5	Mean
Mastery of Research Design	2.50	4.00	3.67	3.67	4.00	3.57
Mastery of Research Design and Execution	2.00	4.00	4.00	3.67	4.00	3.53
	Total number of students			5		
	Students scoring > 3.0 on Q1			4		
	Percent of students, Q1			80%		
	Students scoring > 3.0 on Q2			4		
	Percent of students, Q2			80%		

Learning Outcome 3 – Mastery of Communication

Methods

We assessed students' mastery of research design and methods using a survey distributed to the thesis committee within 10 days of the thesis defense. Questions on the survey addressing this learning outcome included “Mastery of Communication” and “Mastery of Written Communication”, with students scored on a range of 1 (unsatisfactory) to 4 (outstanding). We also distributed an exit survey will be given to each student to report the number of national or regional conferences they attended, the number of posters or oral presentations given, and the number of publications they had submitted or accepted in peer-reviewed journals at the time of their defense.

The 2020-21 assessment for Learning Outcome #3 included survey results for five students who graduated between May 2019 and April 2021. We combined two years' worth of data to obtain an adequate sample size of students. Scores were averaged across respondents for each of the two questions for each student; the percentage of students exceeding the minimum criteria (3.0) are reported here.

Results

During the assessment period, 80% of MS students completing their theses in Biological Sciences obtained a mean score of at least 3.0 from their thesis committee members on the “Mastery of Communication” question and all of the “Mastery of Written Communication” questions, which met our stated goal. The average score across the five students was 3.63 for “Mastery of Communication”, 3.47 for the goals portion of the “Mastery of Written Communication”, and 3.57 and 3.40 for the methodology and results portions of the “Mastery of Written Communication” questions, respectively. These proportions (80%) met our stated goal of 80% for these questions.

2020-21 Biological Sciences MS Program Learning Outcome Assessment - Mastery of Communication						
Student	1	2	3	4	5	Mean
Mastery of Communication	2.50	4.00	4.00	4.00	3.67	3.63
Mastery of Written Communication: Goals	2.00	4.00	3.67	4.00	3.67	3.47
Mastery of Written Communication: Methods	2.50	4.00	4.00	4.00	3.33	3.57
Mastery of Written Communication: Results	2.00	4.00	3.67	4.00	3.33	3.40
Total number of students						5
Students scoring > 3.0 on Q1						4
Percent of students, Q1						80%
Students scoring > 3.0 on Q2.1						4
Percent of students, Q2.1						80%
Students scoring > 3.0 on Q2.2						4
Percent of students, Q2.2						80%
Students scoring > 3.0 on Q2.3						4
Percent of students, Q2.3						80%

MS students reported an average of 1.8 meetings attended during the course of their MS program, and 80% of the 5 students met our minimum standard of one meeting attended. Four of the five students (80%) gave at least one presentation, which met our stated goal. Unfortunately, only 40% of the students (two of five) surveyed met our stated goal of one publication accepted or submitted at the time of the thesis defense. The average number of publications was 0.40.

2020-21 Biological Sciences MS Program Learning Outcome Assessment - Mastery of Communication						
Student	1	2	3	4	5	Mean
# Meetings Attended	0	2	3	3	1	1.80
# Posters + Talks	0	2	3	3	1	1.80
# Publications Accepted + Submitted	0	0	0	1	1	0.40
Total number of students						5
Students with a meeting attended						4
Percent of students, meetings						80%
Students with a presentation						4
Percent of students, presentations						80%
Students with a paper						2
Percent of students, papers						40%

Timeline for Action Plan

A timeline for the implementation of the action plan for the 2021-22 academic year follows:

1. Student familiarity with the major issues in their fields will continue to be emphasized in courses and individual laboratories. The department will emphasize the importance of these issues to all PIs having MS students in their labs, with significant improvements expected within 3 years.
2. The department will continue to emphasize the importance of student publications for MS students, beginning in Fall 2021.
3. Student mastery of their work will continue to be emphasized in courses and individual laboratories. The department will emphasize the importance of MS students' abilities to reason and answer questions about their research, with significant improvements expected within 3 years.