

Program-Level Assessment: Annual Report

Program Name (no acronyms): MS in Anatomy

Department: Center for Anatomical Science and Education

Degree or Certificate Level: Master's Degree

College/School: Medicine

Date (Month/Year): July 21, 2021

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In what year was the data upon which this report is based collected? 2020-2018

In what year was the program's assessment plan most recently reviewed/updated? 2021

1. Student Learning Outcomes

Which of the program's student learning outcomes were assessed in this annual assessment cycle? (Please list the full, complete learning outcome statements and not just numbers, e.g., Outcomes 1 and 2.)

Because critical thinking and presentation skills have not been recently assessed, we decided components of student learning outcomes two, three and four should be assessed. Specifically, we assessed course ANAT-6990 Journal Club learning outcomes that include competency in: 1) critical evaluation of scientific literature, 2) in written communication skills with respect to clarity, use of appropriate grammar, syntax and vocabulary to effectively present information including the use of figures, tables and citations, and 3) in oral communication skills with respect to content, organization, presentation and delivery, use of visual aids, and ability to answer audience questions.

2. Assessment Methods: Artifacts of Student Learning

Which artifacts of student learning were used to determine if students achieved the outcome(s)? Please describe and identify the course(s) in which these artifacts were collected. Clarify if any such courses were offered a) online, b) at the Madrid campus, or c) at any other off-campus location.

In ANAT-6990 Journal Club students give a presentation in which they critically evaluate a research article in the anatomical field to faculty and peers. Each faculty member evaluates the presentation by completing a rubric that consists of the following categories: article selection, background knowledge and introduction of topic, questions and experimental design, critical analysis of results, slides/visual aids, oral presentation and delivery, ability to answer questions and overall performance.

3. Assessment Methods: Evaluation Process

What process was used to evaluate the artifacts of student learning, and by whom? Please identify the tools(s) (e.g., a rubric) used in the process and **include them in/with this report document** (do not just refer to the assessment plan).

The result from AY18-19, 19-20 and 20-21 were tallied and average scores for each category and overall performance were documented.

4. Data/Results

What were the results of the assessment of the learning outcome(s)? Please be specific. Does achievement differ by teaching modality (e.g., online vs. face-to-face) or on-ground location (e.g., STL campus, Madrid campus, other off-campus site)?

On a scale of 1-5, with 1 as unsatisfactory and 5 as outstanding, the average results for each category were: 3.6 for article selection, 3.9 for background knowledge and introduction to topic, questions, and experimental design, 3.6 for critical analysis, 4.0 for slides and visual aids, 3.9 for oral presentation and delivery, 3.5 for ability to answer questions from the audience and 3.8 for overall performance. The average overall performance score of 3.8 indicates a very good to adequate competency in the journal club categories and we feel this indicates students are competent in these learning outcomes. These results were compared with results of doctoral students to identify similarities and

differences between the two groups. The average overall performance of doctoral students was 4.0 which was 1.2 points higher than the master students which indicates slightly weaker skills in master students. While some sessions in AY19-20 and AY 20-21 occurred remotely there is no evidence that achievement differed by modality.

5. Findings: Interpretations & Conclusions

What have you learned from these results? What does the data tell you?

The average overall performance score of 3.8 indicates a very good to adequate competency in the journal club categories and we feel this indicates students are competent in these learning outcomes. The lowest average score was in the ability to answer questions category. As a result, faculty will work with students to further develop this skill.

6. Closing the Loop: Dissemination and Use of Current Assessment Findings

A. When and how did your program faculty share and discuss these results and findings from this cycle of assessment?

Course director discussed results with each student and faculty discussed results at faculty meetings.

B. How specifically have you decided to use these findings to improve teaching and learning in your program? For example, perhaps you've initiated one or more of the following:

Changes to the Curriculum or Pedagogies

- Course content
- Teaching techniques
- Improvements in technology
- Prerequisites

- Course sequence
- New courses
- Deletion of courses
- Changes in frequency or scheduling of course offerings

Changes to the Assessment Plan

- Student learning outcomes
- Artifacts of student learning
- Evaluation process

- Evaluation tools (e.g., rubrics)
- Data collection methods
- Frequency of data collection

Please describe the actions you are taking as a result of these findings.

Faculty are aware of the need to develop student skills in answering question. As a result, faculty will train students specifically on how to answer questions during a presentation and more questions will be asked. Training would be implemented earlier in the curriculum during the ANAT-5100 Human Embryology which occurs in the Fall semester of the first academic year.

If no changes are being made, please explain why.

7. Closing the Loop: Review of Previous Assessment Findings and Changes

A. What is at least one change your program has implemented in recent years as a result of assessment data?

During AY16-17 the faculty discussed the need to provide more student opportunities for developing student critical thinking skills. While no quantitative data was presented, qualitative feedback from students and faculty regarding course ANAT-6900 Journal Club identified a need to address strengthening critical thinking skills. During this time, a new faculty member was appointed to direct the course. As a result, resources to help strengthen the course were used to develop a new grading rubric for the course. These resources included "Bringing up scientists in the art of critiquing research" by Barbara J. Kuyper from BioScience 1991. 41(4):248-249 and a student/faculty survey. Results of the survey indicated both faculty and students indicated the need to develop analytical skills for writing, critiquing, revising, and defending research proposals and articles and reviewing the research of other scientists. The old grading rubric included categories that focused on presentations and lacked categories that evaluated critical thinking skills. A new grading rubric with the following categories was developed and implemented: 1) Background knowledge, introduction of topic, questions, and experimental design and 2) critical analysis of results including concise and accurate conclusions, caveats, and future experiments or implications. By adding these categories, data on critical thinking skills is now available and assessed.

B. How has this change/have these changes been assessed?

This outcome for this course was not previously assessed.

C. What were the findings of the assessment?

Average overall scores indicate that students are developing critical analysis and presentation skills. However, categories with low scores, specifically the ability to answer questions, identifies areas of needed improvement.

D. How do you plan to (continue to) use this information moving forward?

We will continue to evaluate each category to determine strengths and weaknesses for needed improvements.

IMPORTANT: Please submit any assessment tools (e.g., rubrics) with this report as separate attachments or copied and pasted into this Word document. Please do not just refer to the assessment plan; the report should serve as a stand-alone document.