Report for Information Literacy in BIOL142L-General Biology II Laboratory, Taught Spring 2014.

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Introduction

I am taking part in the departmental revision of the general biology laboratory curriculum to focus on the five major goals recently implemented in the Biology Curriculum Revision approved in spring 2013. These goals call for graduates of the Biology major to demonstrate: critical evaluation of biological data, mastery of the scientific method, and effective written and oral communication. Students will need to complete these competencies either through classroom experiences, research, or other extra-classroom activities.

The goal of the first year laboratory course is to begin to engage students in these key skills and to challenge them with inquiry-based learning to teach students how to think, rather than simply memorize. Information literacy is key to inquiry-based learning. To become lifelong learners students must have the ability find resources, evaluate them, and summarize the information for their own research

Methods

We used the small lass size (18 maximum) of the laboratory sections for students to engage in experimental design, data collection, data analysis, and communication of their findings, both written and orally. Throughout the semester students needed to locate, evaluate, summarize and incorporate information with their collected experimental data and present this information in oral presentations to the class and in written papers.

The semester began with a visit to each section by either Betsy Moylan or Bonnie Oldham. They spoke to each section for about 15 minutes on the use of library resources, particularly databases specific for science. They had received from me our first assigned topic (photosynthesis) and they were able to give specific instructions pertinent to the topic. They also discussed source reliability and format of citations. This information was followed up in class for the next few weeks by the instructors to follow up the librarians.

Course Assessment

Three major laboratory reports were part of the student workload throughout the semester and I used these reports to assess the student learning progression through the semester. I

was able to obtain 135 laboratory reports from 7 of the 13 BT1 0 0 TEoth w

Results

Table 1 <u>Assessment Rubric for Information Literacy Scores:</u> scores were determined by each SLO on the sampled report, then taking an average of all reviewed reports to get a mean ranking (first row) for each laboratory report done. The mean ranking was divided by the top rank of 3 to get a percentage score (second row).

SLO #2 Conduct effective search strategies and identify a variety of potential sources.	SLO #3 Evaluate the appropriateness of sources.	SLO #4 Evaluate information and its sources critically and incorporates selected information into his or her knowledge base.	SLO #6 Synthesize main ideas to construct new concepts (with use of the primary source).
Ranking: 0=no sources 1=no variety 2=mix of sources 3=primary incl. covered area needed.	Ranking: 0=none appropriate 1=scientific 2=sci., & primary 3= sci., & primary, on topic, (present date).	Ranking: 0=none used 1=sometimes correct 2=info. always used correctly 3= uses information correctly, integrates into their text.	Ranking: 0=none used 1=scientific & on-topic 2= scientific & on-topic, integrated into text 3= scientific & on-topic, integrated into text and adds beyond basic text.
<u>Lab Report #:</u> 1 2 3	Lab Report #: 1 2 3	<u>Lab Report #:</u> 1 2 3	<u>Lab Report #:</u> 1 2 3
1.9 2.5 2.5 63% 83 83	2.2 2.4 2.4 73% 80% 80%	2.0 2.2 2.4 67% 73% 80%	1.8 2.0 2.3

Discussion

Overall the class visitation by the library staff and the follow-up classroom instruction of all the sections appears to have supported improvement in the laboratory reports in terms of using source material. SLO#2 & #3 generally showed higher scores and indicate students can find primary and useful sources, however the assessment has shown us that more work needs to be done to explain the use of sources in the future. SLO#4 & #6 focus more on how the students are using the sources particularly focusing on integrating and synthesizing new ideas from the material they glean from primary sources. This is naturally the more difficult of the SLOs, and in the future we will work on creating example and short assignments on how best to integrate source material to their discussion.

The low percentage of use of the student laboratory notebooks to journal their source strategy will need to be addressed also. The library staff suggested some potential improvements such as including prompts for students might be helpful. We could ask them to specifically name what database they used, key words used, or the number of search results.

Overall this award has pointed to areas of focus for the future in use of source material and how best to teach students on this matter. While there was improvement over the course of the semester new assignments need to be