Collaborative Creation of a Lab Rubric†

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INTRODUCTION

Most instructors have heard of rubrics and many use them to evaluate student work. Typically, rubrics are adapted from other sources or created in isolation by the instructor. Rubrics are often developed to help both the instructor and the students see what is expected and understand how each dimension of an assignment is prioritized, valued, and evaluated. We have a rubric now for an Introduction to Zoology lab that could be submitted here as a pretty darn good rubric for other instructors to use. But the intent of our “Tips and Tools” is to describe the actual creation of the rubric. We believe the active “real time” development of the rubric carried as much or more value than the finished product.

While there are a number of tested rubrics in circulation, our task was to intervene in a particular situation: the lead professor was concerned because her graduate teaching assistants held negative views about student performance on the lab reports. GTAs found poor products frustrating, and admitted that their grading was thus superficial and provided no feedback to students. Specifically, GTAs did not feel equipped to evaluate writing and, as a result, simply graded on steps completed in the lab process.

PROCEDURE

Although writing is an integral part of being a scientist, many science professionals view themselves as unable to adequately instruct students in science writing. Understanding this, the Zoology professor arranged for the director of the campus Learning, Teaching and Writing Center to facilitate one of the hour-long weekly GTA meetings as an expert in teaching and assessing student writing. Because the director has a strong “writing ethos” she was able to point to the “writing ethos” already inherent in the GTAs as experienced science communicators.

We (a lead GTA and the Learning, Teaching, and Writing program facilitator) began the presentation with some brief pedagogical training, stressing the purpose of writing as a tool for students to think about and synthesize information. The first activity reviewed the existing lab report template, which had five parts, and the GTAs created five rubric categories. The facilitator then began to solicit keywords from the GTAs and listed them on the white board. The next step involved prioritizing and arranging these terms so that specific criteria within each of the required domains could be developed. McKeachie and Svinicki (1) call this identification of “traits” essential to building an effective scale. In other words, as the GTAs generated terms, they also collectively reinforced the value of the required pieces of the lab report. Coming to this consensus and making the criteria clear and visible to all was the first major step in making GTAs the genuine stakeholders in evaluation and sharpening their understanding of what was being evaluated.

CONCLUSION

Previously, there were fairly significant differences in lab report assignment grades across all 30 lab sections. The 15 GTAs held varied teaching philosophies and perceptions of student capabilities, and this exacerbated grading inconsistencies and heightened GTA frustration. Creating the lab rubric together allowed the GTAs to find common ground, which softened extremes in teaching philosophy and increased GTA confidence in judging writing ability. And, although only one criterion was explicitly about the writing in the lab report (called Organization and Proofreading), the GTAs also began to understand the connection between clear writing and the demonstration of new learning. In this way, they have become more effective instructors, helping our students improve their scientific communication skills and conceptual understanding, which continues to be important in both their upper-level bio-sciences courses within the department and in their future careers.

SUPPLEMENTAL MATERIALS

Appendix I: Lab ReportRubric

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REFERENCES