

# CURQ Web Vignettes

## Assessment-Driven Changes to Programming and Evaluation of Research Writing and Communication

Sumana Datta, *Texas A&M University, sumad@tamu.edu*

The word “assessment” frequently engenders a mixture of negative feelings among UR staff: anger at extra work imposed by fiat, frustration at busywork with no obvious benefit, or worry about failure to reach performance standards that seem to be set arbitrarily. Yet by understanding that assessment is a process, not a grade, assessment can be an excellent tool to provoke deeper thought among UR staff about goals and outcomes and to promote improvement. Evaluation of student success can be improved by differentiation between indirect assessments such as self-report surveys, which are easy to carry out but can only identify perceived gains, and direct assessments such as tests of ability, which are harder to implement but yield concrete measures of student learning. Differentiation between program outcomes such as participation and student-learning outcomes such as critical thinking give program administrators “ammunition” to defend their programs’ value. Both types of assessment and outcome information are important in developing an overall picture of an academic program.

Since 2006 Texas A&M University (TAMU) has undertaken yearly cycles of assessment and revision of the Undergraduate Research Scholars Program, now housed in Honors and Undergraduate Research (HUR), using end-of-program surveys, reports from supporting units, and input from the Office of Institutional Assessment. Analysis of student surveys from the early years of the program (2005-2009) showed that the primary challenge (cited by between 40 and 58 percent of student respondents) centered on time management and writing (Spikes 2010). In open-ended comments, students told us that time-management issues were caused by trying to balance coursework with writing. Although HUR offered a course on thesis writing, it was available only in the spring semester and accommodated about 25 percent of our students. In response to these issues, the HUR staff partnered with POWER (Promoting Outstanding Writing for Excellence in Research), a program at TAMU that supports writing by addressing issues that hinder or block people’s ability to write productively. Based on the work of Elbow (1981), POWER helps students feel as though they are in control of the writing process rather than at the mercy of it. This is particularly important for undergraduates, as many have never written a paper as long and complex as a research thesis. POWER helps students commit to write a little bit each day without worrying about perfection and introduces the use of mind maps to organize information, providing a workshop

and consultations on writing productivity for our students (Buzan and Buzan 1994). HUR also moved a workshop on reference software from later to earlier in the fall semester to catch students before they began to write so that they could build their reference library as they became immersed in their projects. More recent feedback from student surveys indicated appreciation of our writing workshops. These days, student writing challenges center on thesis formatting and formatting feedback from HUR (our current area targeted for improvement).

The Thesis Office, which reviewed undergraduate theses in the past, informed us that many students required multiple rounds of review before they had correct formatting for their theses. Meanwhile, students told us that Thesis Office guidelines aimed at graduate theses were far more detailed than seemed appropriate for undergraduates, and could be difficult to implement in equation-heavy disciplines. We hired two graduate students and trained them to review draft chapters (along with significant time committed by a one of our HUR staff) as they are submitted throughout the academic year. By reviewing during the year, formatting issues are caught earlier, and the final theses are approved much more smoothly. We have also simplified the guidelines for the undergraduate thesis format, and implemented a LaTeX template for symbol-rich disciplines. Recent surveys indicated student appreciation of LaTeX workshops and sample theses. Now the major challenge is that the STEM-oriented format (introduction, background, methods, results, and discussion) required by the Thesis Office, on which our format was based, is not appropriate for humanities and social-science scholarship. Our future plans include developing a humanities- and social science-friendly format for those scholars. This option is available to us since review of undergraduate theses now resides entirely within HUR.

The Office of Institutional Assessment requested direct evaluation of student learning. We chose to assess improvement of research communication and writing skills. To provide direct assessment of research communication and writing, we use a rubric for judging posters and oral presentations. Students learn about rubrics and how to apply them in our thesis-writing course and use the rubric as a guideline for developing and giving their presentations at our Student Research Week in late March. The rubric is a five-point scale that covers organization, presentation, knowledge, clarity, accuracy, references, and aesthetics. Faculty reviewers use the same rubric to judge the posters and talks throughout the week. Our students also use the rubric to judge two poster and two oral presentations as a class assignment. Since we can distinguish which presentations

belong to our Undergraduate Research Scholars who have taken the thesis-writing course or presentation workshops from presentations by those who have not, we can now directly evaluate the effectiveness of our instruction in the Undergraduate Research Scholars Program and are currently analyzing the data.

To further improve students' communication skills, we also focus on graphical presentation of information. Many scholarly presentations, especially those in STEM fields, depend on having simple, understandable graphics. To address this skill we have a class session on graphic design based on Edward Tufte's (2001) theories and practice for quantitative data. Faculty members discuss several different categories of graphic information (tables, line charts, etc.), which types of graphics are best suited to what message, and the criteria for a good graphic. Students are assigned to design a single graphic that represents anything relating to their research. The graphics are evaluated by the professor according to the precepts laid out by Tufte. This will be included in our assessment plan for the coming year.

Multiple rounds of indirect assessment through survey data have led to increasing improvement in our Undergraduate Research Scholars Program. We hope more recent implementation of direct assessment of student-learning outcomes will give us data to explicitly demonstrate improvement in students' communication and writing skills as a result of our programming. 

### References

- Buzan, Tony and Barry Buzan. 1994. *Mind Map Book*. London, England: BBC Books.
- Elbow, Peter. 1981. *Writing with Power: Techniques for Mastering the Writing Process*. Oxford, England: Oxford University Press.
- Spikes, Sara. 2010. Undergraduate Research Scholars Program at Texas A&M University. A Program Evaluation. Internal report.
- Tufte, Edward. 2001. *The Visual Display of Quantitative Information*. Second Edition. Cheshire, Connecticut: Graphics Press LLC.

## A Practical, Hands-on Guide for Mentoring Undergraduates in the Arts & Humanities

Designed for faculty members and administrators hoping to develop opportunities for undergraduate research, scholarship, and creative work in the arts and humanities, the book contributes new ideas for meaningful student participation in the scholarship of these disciplines. Written by faculty members with long experience working with undergraduates, the book's eleven chapters offer models of successful practice in a wide range of disciplines and cross-disciplinary programs.

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