Teaching Methods

Writing in Horticulture: A Course to Help Graduate Students Write More Effectively

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ADDITIONAL INDEX WORDS. communicating, reviewing, editing, publishing

SUMMARY. A one-credit course, *Writing in Horticulture*, was developed and taught to graduate students in the Dept. of Horticulture at Clemson Univ. The course focused on discussion and explanation of the philosophies and methods of writing in the horticulture field. Discussions included a review of writing mechanics, types of writing and audiences, examples of exemplary writings, editing and reviewing, and examples and methods of professional correspondence. Real-life writing experiences were emphasized. Hands-on activities included writing and reviewing peer manuscripts and grant proposals. Three original written works were completed by the end of the semester: 1) a popular press article, 2) a grant proposal (maximum three pages long), and 3) an abstract for a manuscript published previously in a scientific journal.

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An important lesson taught to graduate students and young scientists involved in research is that a research project is not complete until the results are communicated to appropriate audiences, especially in writing. Communication skills are considered by many as important to science as the research. Also, many scientists believe that the quality of a person's science and the quality of the written report are virtually inseparable (Carlisle, 1978). This highlights the importance of educating graduate students in proper writing methods.

The traditional method for writing instruction in most graduate programs is one-on-one interaction between student and major advisor. This method of instruction may result in great variability in the styles taught within a graduate program and in the effectiveness of instruction. Writing instruction also can be a major strain on the overall student-mentor relationship. For example, common requests by advisors to students to re-write sections of manuscripts have been met by some students with dismay and even hostility (Reitt, 1980).

Another manner by which graduate students learn to write in their field is by imitating the style and approach of previous authors. While this may be effective, it could result in the students' repeating all that is incorrect with respect to the style and prose of authors before them (Day, 1988).

Frustrated students and faculty members (especially advisors and committee members) can result from these traditional approaches to writing instruction in graduate programs. Also, the frustrations experienced during the writing process may result in the attitude that writing for publication is drudgery, punishment, and torture.

Students and professionals may approach future writing tasks with fear, frustration, rejection, inadequacy, anger, resentment, and depression (Matkin and Riggall, 1991).

A more formal and well-planned method of instructing graduate students in the basics of writing for publication is needed (Reitt, 1980). Even so, it has been suggested (Goodell, 1979; Greaser, 1979) that the literary style taught in many English departments may not bridge the communication gap between the highly sophisticated technologist and the busy, non-technical policy maker or the public. As a result, some discipline-specific writing courses are being developed and offered, often with scientists from the discipline as course instructors (Dunwoody and Wartella, 1979; Figgins and Burbach, 1989). These discipline-specific writing courses may still be considered the exception rather than the norm for most graduate programs, especially in the field of horticulture.

With the approval of the faculty of the Dept. of Horticulture at Clemson Univ., I developed and taught a one-credit course (1 classroom hour per week), *Writing in Horticulture*, during fall semester 1994. I approached this task as a one-semester experiment on teaching graduate students about writing, but not necessarily on how to write.

Developing the course

STRUCTURE AND FORMAT. After reviewing the literature on previous discipline-specific writing courses, I decided to structure the format of *Writing in Horticulture* on two published course formats designed for postbaccalaureate students. One course was for graduate students at Emory Univ. (Reitt, 1980) and the other was for research scientists at the Rand Corp. (Greaser, 1979). From the reported experiences of students in these two courses, I concluded that the course must be interactive and hands-on, with students using their own writings.

The major instructional goals developed for the course were that the student, after having successfully completed this course, would be able to a) understand the proper mechanics of writing, b) prepare effective manuscripts, c) be able to review and edit written materials, and d) prepare effective correspondence. A topical outline

Table 1. Weekly assignment and discussion topics.**First week****Written assignment:** Complete the questionnaire**Discussion topic:** Introduction of the course**Second week****Written assignment:** A popular press article (five to six pages long) submitted to the managing editor of the class. Included must be a cover letter (see attached example) that indicates what this manuscript is for, the directed outlet, and any other important information. Three copies of the article should be submitted since it will be sent out to other class members for review.**Reading assignment:** Forman, B.D. 1988. Writing for publication: The process of journal article publishing. *Counselor Educ. and Supervision* 28:181–185.**Discussion topic:** Basics of writing**Third week****Written assignment:** Due in 2 weeks—review of articles must be submitted to the managing editor of the class. Included for the individual papers must be a cover letter, manuscript evaluation form, and suggestion form explaining additional concerns. Attached are examples.**Reading assignment:** Frantz, T.T. 1968. Criteria for publishable manuscripts. *Personnel and Guidance J.* 47:384–386.**Discussion topic:** Peer review of a manuscript**Fourth week****Written assignment:** Due in 1 week—review of articles.**Reading assignment:** Clemente, F. 1973. Early career determinants of research productivity. *Amer. J. Sociol.* 79:409–419**Discussion topic:** Common mistakes in writing**Fifth week****Written assignment:** Due in 2 weeks—a rewrite of your article must be submitted to the managing editor of the class. Included must be a cover letter outlining changes or rebuttal to proposed suggestions and the two reviews of the paper.**Reading assignment:** Hickson, M., D.W. Starks, and J.H. Amsbary. 1989. An analysis of prolific scholarship in speech communication, 1915–1985: Toward a yardstick for measuring research productivity. *Comm. Educ* 38:230–236.**Discussion topic:** Handling reviews**Sixth week****Written assignment:** Due in 2 weeks—a four- to five-page grant proposal submitted to managing editor. Included must be a cover letter explaining the nature of the grant proposal and intended funding source.**Reading assignment:** Bridgewater, C.A., P.H. Bornstein, and J. Walkenbach. 1981. Ethical issues in the assignment of credit. *American Psychol.* 36:524–525.**Discussion topic:** Grant proposals**Seventh week****Written assignment:** Due in 1 week—grant proposal.**Reading assignment:** None for this week**Discussion topic:** Budget development for grant proposals**Eighth week****Written assignment:** Due today—grant proposal.**Reading assignment:** Starhan, R.F. 1982. More on JCP publication: Single versus multiple authorship. *J. Counseling Psychol.* 29:430–431.**Discussion topic:** Common types of professional correspondence**Ninth week****Written assignment:** None**Reading assignment:** Zuckerman, H. 1967. Nobel laureates in science: Patterns of productivity, collaboration, and authorship. *Amer. Soc. Rev.* 391–403.**Discussion topic:** Other types of writing in horticulture**Tenth week****Written assignment:** Abstract due next week**Reading assignment:** None**Discussion topic:** The final project**Eleventh week****Written assignment:** Abstract due**Reading assignment:** None**Discussion topic:** Fundamentals of speed reading—the Evelyn Wood way**Twelfth week****Written assignment:** None**Reading assignment:** None**Discussion topic:** Appropriate speed reading methods for various types of writing, course wrap-up

was developed, and the course was advertised throughout the department as a graduate-level special-topics offering. Thirteen graduate students enrolled, representing over 80% of the graduate students in the Dept. of Horticulture during that semester.

DEVELOPING THE INSTRUCTION METHODS. To help develop appropriate instruction methods for the course, I distributed a questionnaire to the students at our first class meeting. The questionnaire surveyed student writing habits, prior experiences, and views on writing.

Of the thirteen individuals in the class, six were seeking MS degrees, six were seeking PhD degrees, and one was a postdoctoral student. Eight of the students considered themselves average in writing skills, while four considered themselves below average. Only one student considered his/her skill to be above average. Eight had no prior formal writing courses, and seven indicated no informal training. Business writing was the most frequently mentioned formal training of the students, and thesis writing was the most frequently mentioned informal training.

The hardest part of writing for the students was getting started. The students felt that the most important reason for writing in society was sharing ideas and communication. They also believed that the publish-or-perish mentality still existed in academia and that, as a result, the quantity of publications was more important in faculty evaluations than the quality of the work.

Course structure

WEEKLY HANDOUTS. Since the results of the questionnaire indicated that many of the students had little to no formal training in writing, I distributed a one-to-two page handout to the students each week summarizing that week's discussions and activities. Weekly assignments and discussion topics are listed in Table 1. The weekly handout had the following section headings: written assignment, reading assignment, this week's discussion topic and reference materials, discussion outline, and next week's discussion topic. I suggested that the students place all handouts and supporting information into a three-ring binder notebook for easy future reference.

WRITTEN ASSIGNMENTS. The first

assignment was to develop a three-to-five page manuscript appropriate for the popular press. I served as the editor for this assignment and chose a managing editor from the class. My responsibilities were to help the students during the peer-review process. The managing editor's responsibilities were to log and track manuscript submissions and returns into a class notebook.

Two students reviewed each submitted manuscript and returned them to the managing editor. The authors of the manuscripts were known to the reviewers. The students served as reviewers to illustrate how peer review is accomplished. I also based this decision on the suggestion that, when students assume responsibility for someone else's prose, they learn more about how to write than when they struggle with a traditional academic exercise (Friedman, 1979). Also, as the students become more adept at evaluating and strengthening others' work, they begin acquiring the skills they need to turn inward upon themselves and their own work (Reitt, 1980).

I summarized the reviewers' comments and returned the manuscripts and reviews to the authors. I indicated what revisions would be necessary for the manuscript to be published. The authors made the appropriate revisions, and the revised manuscript was resubmitted for a grade. About 75% of the grade on this assignment was on the quality of the final manuscript, including how well the student had incorporated suggestions. The other 25% of the grade was based on how well the student had served as a reviewer.

The second written assignment was a three- to five-page grant proposal including a detailed budget. I modeled the grant proposal request according to the research grant programs request at Clemson Univ. I was the sole reviewer for this assignment, and no revision was required.

I planned originally for the third assignment to be a manuscript appropriate for a scientific journal. Many of the students were early in their thesis or dissertation research and were not ready to write their information in journal format. Also, since this assignment was the last one and late in the semester, there was not enough time for all the students to do the work

necessary for a well-written scientific manuscript. Instead, I had the students develop an abstract for a previously published article from a scientific journal. I selected the article and removed the abstract and journal citation before distributing to the students. The students were required to read the article and develop an appropriate abstract. No revision was required from this assignment. Additionally, some students had advanced drafts of journal articles on which they had been working. I allowed these students to submit their journal article for me to review in place of the abstract assignment.

READING ASSIGNMENTS AND IN-CLASS DISCUSSIONS. Each week there were out-of-class reading assignments. Copies of these reading assignments were given to the students. Topics included writing avoidance, writing for publication, criteria for publication, handling rejection, and assigning publication credit. Additional readings discussed the psychology of successful scientific writers such as early career determinants of research productivity and patterns of productivity of Nobel laureates.

In-class discussions covered the mechanics of writing, common mistakes in writing, principles of reviewing, handling reviews, grant proposal writing and budget development, types of professional correspondence, and other types of writing.

The final discussion covered speed-reading techniques.

Grading

Each written assignment was worth 20% of the final grade. Since I considered group interaction to be important, class participation (as indicated by attendance and quality of contributions to discussions each week) was worth 40% of the final grade.

Conclusions and future considerations

All students completed the course. While there is no way to assess accurately whether my students are better writers than they would have been without the course, I am confident that they are more conscious of how and why they write. Some of my students have recently published in scientific journals and the popular press.

It is anticipated that this course

will become a regular class offering in an alternate year scheduling. In conclusion, my experiment, I feel, was a success.

Availability of class materials

Copies of the course syllabus, class handouts, and questionnaire will be supplied to those interested upon request or can be accessed through the World Wide Web at WWW.Clemson.edu/Hort/DRD/Homepage.html.

Literature cited

Carlisle, E.F. 1978. Teaching scientific writing humanistically: From theory to action. *English J.* 67:35-39.

Day, R.A. 1988. How to write and publish a scientific paper. Oryx Press, Phoenix, Ariz.

Figgins, M.A. and H.J. Burbank. 1989. Preparing our students to publish: lessons learned. *Innovations in Higher Educ.* 14:15-23.

Dunwoody, S. and E. Wartella. 1979. A survey of the structure of science and environmental writing courses. *J. Environ. Educ.* 10:29-36.

Friedman, S.M. 1979. Using real world experience to teach science and environmental writing. *J. Environ. Educ.* 10:37-42.

Goodell, R. 1979. Should scientists be involved in teaching science writing? *J. Environ. Educ.* 10:21-24.

Greaser, C.U. 1979. Improving the effectiveness of research writing. *Scholarly Publ.* 11:61-71.

Matkin, R.E. and T.F. Riggan. 1991. Persist and publish: Helpful hints for academic writing and publishing. Univ. Press of Colorado, Niwot.

Reitt, B.B. 1980. The editor turns teacher. *Scholarly Publishing* 11:256-266.

Implications of an Analysis of Job Newsletter Content, Readership, and Perceived Value for Student Advisement and Curriculum Development

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ADDITIONAL INDEX WORDS. employment search, recruiting, job programs, internships, guidance, placement services

SUMMARY. Recipients of a monthly horticultural job opportunities newsletter and firms or organizations listing positions in the newsletter were surveyed to determine the perceived value of the newsletter as a job search and recruitment tool, respectively. Survey information was used to develop a profile of the individuals and organizations using the newsletter. Original position descriptions on which the briefer newsletter listings were based were used to develop a profile of the industry segment, degree and/or experience requirements, geographic location, and starting salaries and benefits of positions listed from January 1993 to

December 1994. While the newsletter generated contact between prospective employees and employers, only 20% of the prospective employees received job offers by responding to newsletter listings. The newsletter was valued more by individual recipients as a job search tool than by institutional recipients or private industry as a recruitment tool. Starting salaries of listed positions were comparable to those previously reported in industry and academic surveys. Foreign language skills and previous work experience were requested more frequently than above-minimum (typically 2.00) grade point averages or completion of government or industry certification programs. Landscape-related disciplines constituted most BS or BA positions listed, whereas advanced degree positions were distributed more evenly over horticulture-related disciplines. Data supported the inclusion of internship programs and foreign language requirements in horticulture curricula.

A critical need in effective advising and curriculum development is current information on job opportunities for students and the required skills to acquire those positions (Dayberry and Dillingham, 1992). Current information on entry-level positions allows: advisors to direct students effectively to courses pertinent to their goals, faculty to develop industry responsive curricula, and teachers to structure courses to address relevant topics. In technical departments, such as departments of horticultural sciences, it is imperative that curricula and courses are developed and maintained according to industry trends. This is particularly important as universities seek to establish educational partnerships with industry (Jenkinson, 1994). Analysis of employment opportunities available in job newsletters is one method to obtain this information.

To distribute job opportunities efficiently to students and provide an industry liaison for employment and internships, the position of Horticultural Sciences Departmental Jobs/Internship Coordinator was developed. Beginning with the February 1993 issue of the *Texas A&M Horticulture Job Opportunities Newsletter*, a brief summary for all job opportunities received by the Texas A&M Univ. Dept. of Horticultural Sciences was pub-

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