

## Reversing the Report-Production Process When Teaching Pharmaceutical Writing

by Robert J Bonk

Medical writing provides a critical service today, with the creation and dissemination of health care information a key element in improving the well-being of society's members. Timely provision of accurate, understandable information on health care and medical topics plays a pivotal role in bringing the benefit of improved health to society. And as society's demand for health care information continues to increase, the craft of medical writing becomes more visible within the field of professional communication. Hence, teaching techniques for professional communication, as applied to health care topics, indirectly benefit society by ensuring effective provision of health care information—now and in the future.

As colleges and universities begin to recognize our profession's potential for growth, they are starting to develop courses, or entire programs, on medical writing. Instructors tailor such courses to many individuals, including medical students<sup>1</sup>, osteopathic residents<sup>2</sup>, and scientific researchers<sup>3</sup>. These students, however, differ fundamentally from those studying for a career in technical writing itself. Hence, I developed a course on writing pharmaceutical research reports for the University of Delaware's program in business and technical writing. This program, an option within the English curriculum, includes a concentration for undergraduate majors seeking a degree, as well as a certificate for continuing-education students already having an undergraduate degree.

An issue often faced in teaching any branch of professional communication is the bridge between technical knowledge and rhetorical skills. Medical writers in the pharmaceutical industry, for example, often move from earlier careers as scientists to writers who apply that scientific knowledge. But courses and programs that seek to educate students to begin a career in medical writing must grapple with the disparity expected with students majoring in a communication area who would typically lack a strong medical or life-science background. To allow the students in my course to focus on writing rather than science, I approached teaching how to write a pharmaceutical report by reversing the process that usually occurs in practice. This paper describes the design of this course and its expected benefits. Educators constructing syllabi for other courses in medical or technical writing may also benefit by applying this reverse strategy that I developed for teaching pharmaceutical writing.

This paper was presented in part at the 56<sup>th</sup> Annual Conference of AMWA in Chicago, Ill. (November, 1996). The original presentation, "Reverse Strategy for Teaching Pharmaceutical Writing to College Students in Technical Writing Programs," formed part of the plenary session on "Communicating in Medicine".

### **COURSE DESIGN**

My course introduces students to the field of medical writing, with a focus on research reports for the pharmaceutical industry. Students receive an introduction to the drug development process that provides the necessary context for the practical writing assignments that

complement the lectures and discussion. This introduction allows all students, especially those lacking experience with the medical or pharmaceutical fields, to understand the purpose and audience for the writing assignments.

This introduction to drug development proved valuable in creating an even playing field for the different types of students expected in a technical-writing course. As assessed through an initial questionnaire, students in my first class did form two such groups:

- Advanced undergraduate writing majors with limited science education
- Post-undergraduate science majors with limited writing experience.

Overall, the course centers on preparation of a clinical research report for a study of a drug in humans; these clinical reports represent a large proportion of the documents handled by medical writers in the pharmaceutical industry. As for many technical documents, however, clinical reports require familiarity with data interpretation. For example, a medical writer usually works with a team in interpreting data from a clinical study, preparing a detailed research report, and then condensing that report into a journal article for publication.

To shift the focus back onto writing, my course applies a reverse strategy: students select a published article on a clinical trial; most students in my first class chose articles on clinical trials of drugs to treat illnesses with which they or family members had direct experience. From the published article, students prepare three principal writing assignments (see table) that together form a clinical report. This approach reverses the typical process of preparing a publication from a clinical report that, in turn, is based on interpretation of the study's data.

| <b>Assignment</b> | <b>Topic</b>            | <b>Additional challenges</b>             |
|-------------------|-------------------------|--|
| <b>1</b>          | Objectives and Methods  | Familiarity with aspects of trial design |
| <b>2</b>          | Results and Conclusions | Data presentation and organization       |
| <b>3</b>          | Full Revised Report     | Crafting of professional portfolio piece |

The journal article provides source material from which the student crafts the research report, using a template<sup>4</sup> provided in class. This template represents a scaled-down report, formatted with section headings and subheadings, with parenthetical directions for information to include or not to include. Recommendations for providing tables and figures to complement text are given. Examples suggest formats for the cover page, report summary, table of contents, index of appendices, and appendices themselves. Because reports must be tailored to the type of research study (for example, short-term pharmacokinetic study or long-term oncology study), the template does not prescribe every nuance, but instead highlights issues for consideration.

The three writing assignments do not require the student to interpret original data from the research study, as they would on the job in the pharmaceutical industry.

Instead, each assignment challenges the student to selectively organize the information found in the published article into the sections of a clinical report. Incomplete sections must be identified; the student may suggest wording in such cases. For example, empty safety tables might be constructed if the source publication lacked data on rates of adverse events. A prefatory memo documents attribution of source material from the chosen publication, identifying those sections independently crafted. My evaluation includes comparing the submitted report with the source publication. Grading depends upon a checklist of format, language, accuracy, and consistency similar to that used for other writing courses.<sup>5</sup>

### **COURSE BENEFITS**

This reverse-strategy course in pharmaceutical writing benefits the students in several ways. First, each student can explore a drug topic of personal interest or relevance. Second, discussions of ongoing drafts simulate group interactions integral in today's workplace.<sup>6</sup> Third, by obviating the need to interpret scientific data, this course created a common ground for diverse student groups, circumventing a conundrum usual even in graduate courses in technical writing.<sup>7</sup> Fourth, as a portfolio piece, the student's report substantiates his or her understanding of the field of pharmaceutical writing.

Secondary benefits of this course indirectly relate to the academic and pharmaceutical communities. Specifically, medical writers in the pharmaceutical industry can identify practical information to complement rhetorical theory in classroom settings; enhanced courses will better prepare students for potential employment as medical writers in a drug company. For example, practicing medical writers could recommend published articles for source information and additional document templates, such as overview regulatory documents,<sup>8</sup> and publication manuscripts,<sup>9</sup> that could then be used in other reverse-strategy courses. Shared opportunities for designing these courses, moreover, strengthen ties between practitioners and students of medical writing.

In my first offering of this course, participating students at the University of Delaware found that the reverse strategy allowed them to focus on writing while still becoming familiar with the process of drug development. Because of its initial success, I adapted this reverse strategy to an undergraduate course for physical therapy students at the Philadelphia College of Pharmacy and Science. A key objective of this second course was to familiarize second-year students with the case-report format integral to their field of study. These students, who had not yet taken their fundamental courses in physical therapy, were challenged to prepare a case report. For source information, I supplied abbreviated descriptions from a published textbook<sup>10</sup> on clinical cases, followed by interpretations of those cases. As in my course on pharmaceutical writing, students focused not on interpreting the underlying science but on evaluating the source information, identifying needed material, and structuring a document according to a supplied template.

Opportunities for this reverse strategy apply to other documents and courses in medical writing. Published articles could supply source material, for instance, to be repackaged as abstracts, slides, or posters that familiarize students with professional conferences that they most likely have not yet attended. Basic textbooks for medical school could supply source information for preparing continuing-education materials. In these or other representative documents, an underlying template would guide the students as they focused on writing in such reverse-strategy courses.

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Robert J Bonk, Ph D  
Adjunct Assistant Professor  
University of Delaware, Newark, Del.  
Philadelphia College of Pharmacy and  
Science, Philadelphia, Pa. USA

**CALLING ALL EDUCATORS!**

Are you interested in educational and training issues at the heart of the medical writing profession? If so, please heed this call to join colleagues who share your goal of furthering our profession through continuing the education of established professionals while mentoring the development of new medical writers. Initially using e-mail communication among interested AMWA members, we hope to foster dialogue on the future directions of our Educators Section. Joining our effort is simple enough: send an electronic message with your Internet address to either [rjbonk@udel.edu](mailto:rjbonk@udel.edu) or [bart@launchpad.ca-we'll](mailto:bart@launchpad.ca-we'll) do the rest. And don't be shy about including your thoughts on education issues!

ROBERT J. BONK, Ph D.  
AND BART HARVEY, MD, Ph D.

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