and type of topics taught was small, and the results may not generalize widely.

Team teaching is an alternative to the traditional single-instructor method. Although team teaching appeared to have some effect on students' evaluations of instructors, that approach had little impact on students' performance. This finding may suggest that there were neither advantages nor disadvantages to team teaching in terms of student outcomes. Alternatively, the advantages and disadvantages of each approach may offset one another. Despite the lack of impact of team teaching on student performance, students' level of satisfaction suggests that team teaching is a worthwhile endeavor. Bernays and Kaplan (1997) indicated that students appreciated being exposed to different perspectives. Students also indicated that they were able to have more personal contact with their instructors, consistent with Hatcher et al.'s (1996) findings, and that they had learned some skills in handling differences of opinion, which LaFauci and Richter (1970) identified.

One measure of successful teaching is that students perform well, but another measure is that students are genuinely interested in the topic and become enthusiastic about the learning process (Arkin, 1996). Team teaching might encourage student interest and enthusiasm and may be worth the extra effort, even though the evidence does not indicate that team teaching will enhance student performance. Our study indicates that not all instructors flourish in the team-teaching environment; therefore, the challenge in developing a successful team-taught course is in understanding how to use the contributions of each instructor so that the end result is more than the sum of the individuals' contribution.

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Notes

A Seminar on Scientific Writing for Students, Postdoctoral Trainees, and Junior Faculty

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Scientific writing is a communication skill that is not often developed in behavioral sciences training curricula. This article describes a problem-based learning seminar on scientific writing for psychology graduate students, postdoctoral trainees, and junior faculty. Seminar participants revised their in-progress manuscripts according to peer feedback, which was guided by scientific writing principles derived from a textbook and supplementary readings. Participants reported that they improved not only their writing skills, but also their peer-reviewing skills and writing productivity. Educators should consider this scientific writing seminar as a modifiable component of training curricula in the behavioral sciences.

Scientific writing is an important communication skill for students and faculty in the behavioral sciences. For undergraduate students, developing scientific writing skills may facilitate a deeper understanding of course material (Gelfand & Walker, 1990; McGovern & Hogshead, 1990; Nadelman, 1990; Nodine, 2002; Snodgrass, 1985). For graduate students and postdoctoral trainees, developing scientific writing skills may help to successfully complete theses and dissertations, publish research in peer-reviewed

journals, and submit competitive fellowship applications (Eissenberg, 2003; Sternberg, 2000a). For faculty, developing scientific writing skills can underpin publication and research funding records that increase the likelihood of being promoted, obtaining tenure, and having an impact on one's field of study (Boice, 2000; Sternberg, 2000a). A seminar that develops scientific writing skills may thus facilitate the professional advancement of students and faculty in the behavioral sciences.

In the seminar described here, psychology graduate students, postdoctoral trainees, and junior faculty (a) read and discussed principles of scientific writing from a primary text and supplementary readings, (b) used these writing principles to revise sections of manuscripts written by other seminar participants, and (c) revised their manuscripts according to peer feedback. The goals of using these problem-based and collaborative learning activities were for participants to increase their skills at choosing words and key terms to maximize clarity, structuring sentences to emphasize main topics, constructing and ordering paragraphs to present coherent scientific storylines, and providing constructive feedback to help improve their peers' scientific writing. A broader goal was for participants to understand that taking the reader's perspective into account is an important part of skilled scientific writing.

Method

Participants

Three graduate students and 5 postdoctoral trainees participated in this noncredit seminar in 2004 (Seminar 1), and 4 postdoctoral trainees and 6 assistant professors participated in 2005 (Seminar 2). The participants' areas of specialty in Seminars 1 and 2 were clinical psychology ($n = 12$), cognitive psychology ($n = 2$), neuroscience ($n = 2$), developmental psychology ($n = 1$), and research methods and statistics ($n = 1$). The prerequisite was that each participant had to be actively writing (or revising for resubmission) a scientific manuscript, which could be a thesis, dissertation, journal article, literature review, research proposal, or grant or fellowship application.

Format

Participants met for a weekly 1-hr session for 9 weeks. Prior to the first session, I e-mailed participants a copy of the syllabus and asked them to read an article on scientific writing (Gopen & Swan, 1990). At the first session, I described the seminar's objectives and format and led a discussion about the importance of clear scientific writing. As detailed by Gopen and Swan, I emphasized in this discussion two compelling reasons to focus on clarity in scientific writing. First, a focus on writing clarity improves the clarity of the writer's own thinking. Second, a focus on writing clarity increases the impact of one's expressed ideas on readers who vary widely in

their expertise. During this discussion, we also reviewed the evidence-based writing techniques detailed by Gopen and Swan that maximize clarity. These techniques focus on structuring units of discourse (i.e., clauses, sentences, and paragraphs) according to the reader's expectations of their structure (Gopen, 2004). More important, the textbook on scientific writing (Zeiger, 2000) that we used in subsequent sessions emphasized the same structural writing techniques.

At the end of the first session, each participant reviewed the session topics listed in the syllabus and chose a session for which she or he would provide an appropriate writing sample to the rest of the participants. The remaining topics were (a) word choice and sentence structure; (b) paragraph structure; (c) introduction; (d) method; (e) results; (f) discussion; (g) abstracts and titles; and (h) revising, resubmitting, and responding to reviewers. We accommodated up to 2 participants' writing samples per session, and each participant could volunteer a writing sample for up to two sessions.

The format of the remaining sessions was as follows. Before each session, participants completed an assigned reading. Except for the final session on revising, resubmitting, and responding to reviewers, assigned readings were chapters in Zeiger's (2000) text. In addition to covering techniques that promote clarity in scientific writing, each chapter contains exercises that allow the reader to apply these techniques by revising examples of scientific prose. Rather than use the examples of each chapter, participants applied the chapter's techniques by revising the prose of one or two of the seminar's participants.

At the beginning of each session, we reviewed (for approximately 15 to 20 min) the writing principles and techniques of each assigned reading, and then we discussed our revisions and their rationale. At the end of each session, participants provided the author(s) of the prose with hard copies of their revisions, which included descriptions of specific scientific writing principles (and supporting reference page numbers) from the readings that they used to guide their revisions. Using this format, participants thus received feedback (both oral and written) that was guided by principles of clear scientific writing.

The last session covered the topic of revising, resubmitting, and responding to reviewers. For this session, up to 2 participants distributed a draft of a cover letter that responded to the reviews of a manuscript that they were about to resubmit, along with copies of the original reviews. We discussed whether the cover letters addressed the reviewers' comments according to the suggestions in supplementary readings (Fisher & Powers, 2004; Huth, 1999; Sternberg, 2000b; Wagner, 2000; Warren, 2000).

Results

Seminar Evaluations

In an anonymous end-of-term evaluation, participants in both seminars rated on a scale that ranged from 0 (*hardly at*

all) to 4 (*to a very high degree*) that the seminar improved their writing skills ($M = 3.70$, $SD = .61$). In response to a question that asked participants to list the particular writing skills that improved the most, participants listed structuring paragraphs ($n = 14$), structuring sentences ($n = 12$), structuring manuscript sections ($n = 2$), and choosing words and key terms for clarity ($n = 2$). In response to a question that asked participants to list the seminar components that contributed to improving these skills, participants listed revising their prose after receiving peer feedback ($n = 12$), revising the prose of other participants ($n = 9$), and discussing the rationale behind their revisions at each session ($n = 5$).

Because postdoctoral trainees and junior faculty have significant time constraints and because this seminar was not a requirement, I obtained additional ratings and information from Seminar 2 participants to further evaluate the seminar's merit and time commitment. Overall, Seminar 2 participants indicated in these additional evaluations that the seminar was worthwhile and was not a significant time burden. Namely, they rated on a scale from 0 (*hardly at all*) to 4 (*to a very high degree*) that the seminar was worth their time ($M = 3.43$, $SD = .95$) and that they would recommend it to a colleague ($M = 3.71$, $SD = .49$). They also reported spending a median of 1.57 hr per week (range = 1 to 2 hr) preparing for each session. Moreover, an unanticipated outcome of Seminar 2 was that 5 of the 6 assistant professors reported an improvement in their writing productivity. In a question that asked Seminar 2 participants to list the strengths of the seminar, these 5 individuals reported that an obligation to submit a writing sample to the group motivated them to complete drafts more quickly than they would otherwise; they also reported that the peer feedback motivated them to continue writing after a session. That obligations and peer feedback compelled these 5 junior faculty to be more productive are in line with similar evidence-based methods to improve writing productivity (Boice, 1989, 1990, 2000).

Follow-Up Evaluation of Seminar 1

In a nonanonymous 10-month follow-up evaluation (administered by e-mail), Seminar 1 participants continued to rate on the same scale that the seminar had improved their writing skills ($M = 3.63$, $SD = .74$). Furthermore, 7 out of 8 participants listed that the peer feedback helped to improve their writing skills the most. To illustrate, one participant wrote that the in-class discussions of revisions "forced me to consider the audience when writing and to be as clear as possible when trying to communicate my ideas." Another participant wrote that the seminar's format emphasized "the notion of writing with the reader/audience in mind, which has considerably changed my approach to writing manuscripts, grant proposals, presentation slides, and posters." Also, one participant wrote that the feedback "helped to clarify my thinking almost more than my writing." Also at this 10-month follow-up, 2 of the 5 Seminar 1 participants who received feedback on drafts of their journal articles reported that those articles were accepted for publication. Two others had resubmitted their articles with minor revisions after favorable reviews, and 1 participant was preparing to submit.

Discussion

Behavioral scientists with strong scientific writing skills are at a competitive advantage for gaining academic appointments, obtaining funding, and having an impact on their fields of study. In this noncredit seminar, participants learned progressively about principles of clear, scientific writing; they also actively applied these principles by revising the prose of their peers. By giving and receiving principled feedback, participants developed their skills at peer reviewing and scientific writing. To formally incorporate this seminar into undergraduate and graduate training curricula, instructors could grade participants on (a) the quality of their participation in class discussions, (b) the degree to which their written and oral feedback corresponds to the writing principles and suggestions discussed in class and in the readings, and (c) the extent of their improvement in writing during the course of the seminar. In addition, the problem-based and collaborative-learning approach illustrated here could be modified to develop the scientific writing skills of undergraduate students who are completing independent research projects or honors theses or faculty who are preparing scientific manuscripts and grant applications. As such, this seminar represents a modifiable example of a teaching opportunity that can benefit behavioral scientists at multiple educational and professional levels.

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Notes

Soapbox Sessions: A Graduate Student Teaching Forum

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We describe Soapbox Sessions, a teaching forum that has provided graduate students with teaching resources and intellectual support. We discuss the rationale for developing this teaching forum and describe Soapbox Sessions' goals and procedures to mentor graduate teaching assistants. We highlight future directions and make recommendations for persons interested in establishing a similar teaching program.

Quality training, peer support, and supervision are critical for professional development among graduate teaching assis-tants (GTAs; Lumsden, Grosslight, Loveland, & Williams, 1988). Prior research, however, has suggested limited training and mentoring are available for GTAs (Lowman & Mathie, 1993; Meyers & Prieto, 2000a; Meyers, Reid, & Quina, 1998). In an effort to expand the professional development of GTAs in the Psychology Department at the University of Georgia (UGA), we formed a graduate teaching forum called Soapbox Sessions. In this article, we present an overview of Soapbox Sessions, including its strengths and limitations, and offer suggestions for other graduate students interested in initiating a similar forum.

Many colleges and universities offer some form of training for GTAs (Meyers & Prieto, 2000a; Mueller, Perlman, McCann, & McFadden, 1997). At UGA, for instance, first-time instructors in the Psychology Department enroll in a teaching seminar for one semester. In this course, GTAs learn practical skills in developing a syllabus, designing lectures and grading rubrics, and accessing on-campus resources. In addition, the department has an online teaching resource that allows GTAs to download lecture notes and materials. Thus, GTAs receive introductory training related to their teaching duties and learn about available departmental and university-wide resources.

However, given that training depth and breadth varies across institutions (Meyers & Prieto, 2000a; Mueller et al., 1997) and GTAs often report inadequate teacher training (Branstetter & Handelsman, 2000), two graduate students established Soapbox Sessions 3 years ago to provide supplemental teacher training. In particular, Soapbox Sessions offered long-term peer support for psychology GTAs. Approximately 20 graduate students from various psychology subdisciplines participated. In general, members taught a variety of courses in the department to a diverse student population. One faculty member also attended meetings periodically and informally served as a GTA mentor. This professor offered moral support and teaching advice to GTAs, which enhanced discussions. Thus, Soapbox Sessions recognized multiple perspectives on effective teaching and provided GTAs the opportunity to share ideas, techniques, and concerns about psychology education.

Soapbox Sessions Agenda

From a logistical perspective, Soapbox Sessions favored a seminar format to promote an informal atmosphere. We met once a month for 1 hr. Participation was voluntary; we encouraged all GTAs and faculty members to attend. For convenient scheduling, we used a free, online service to organize meetings (www.meetingwizard.com). After petition to the department chair, the Psychology Department funded the purchase of refreshments. Implementing these practical strategies helped to sustain Soapbox Sessions.

From a pedagogical perspective, Soapbox Sessions aimed to improve the academic experience inside the classroom by discussing teaching issues outside the classroom. To accom-