

Writing Across the Curriculum Can Work

By David E. Harris and Robert Schaible

The now familiar slogan, “writing across the curriculum,” coined by British educator James Britton in the early 1970s, originally meant that teachers in all disciplines should adopt writing as part of their pedagogy, both to improve student writing and optimize learning in each discipline.¹

Put simply, students were expected to simultaneously “learn to write” and “write to learn.”²

In the 1980s, Writing Across the Curriculum, or “WAC,” gained popularity across the United States, partially in reaction to a widespread perception that the literacy competence of high school and college graduates was declining. The new approach spread quickly through high schools and colleges, including some of the country’s most prestigious, as educators sought a “total immersion” response to what was described as the “literacy crisis.”³

A recent *Thought & Action* article criticizing writing across the

curriculum as ineffective for students and overly burdensome on faculty⁴ has prompted us to review the evidence for and against WAC. We also propose to take a look at the collateral effects of a writing-intensive curriculum, as well as ways in which collective bargaining might contribute to a more rational approach to the subject.

Anecdotal evidence suggests that both students and faculty believe that students improve their writing and subject-area knowledge in writing across the curriculum-based courses.⁵

But there have been some problems when investigators attempt to design controlled studies to test WAC’s impact on subject-specific learning and general writing ability. Investigators, for instance, are often unable to randomly assign students to control and study groups. They are not able to completely eliminate nonwriting variability in instruction.⁶ Nor can they assure that all instructors are

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equally skilled at the evaluation of writing assignments.⁷

Despite this, a substantial body of evidence demonstrates improved subject-specific learning when writing across the curriculum is used in a rigorous manner.

Working with students at a four-year public college with graduate programs, Weiss compared the learning of graduate and undergraduate students from a variety of disciplines in courses with and without writing across the curriculum. He found that, of five study groups, one of the writing across the curriculum groups (graduate students in statistics) showed significantly greater improvement in subject knowledge when compared to the control group.

In the other four groups, there was no difference between the performance of students who used writing across the curriculum and the control group.

What distinguished the graduate statistics course was that these students pursued WAC in the most rigorous way, writing about the majority of major course concepts and evaluating each other's work.⁸

Other studies of students in four-year colleges have reached similar conclusions. In each of two particularly well-controlled studies, a single professor taught multiple sections of a course within their discipline, varying only the writing

component of the course. The results demonstrated that economics⁹ and biology students¹⁰ achieved higher scores on tests of discipline-specific knowledge when taught using writing across the curriculum.

But this improvement only occurred when writing was guided and written work was carefully and rigorously critiqued.¹¹

Writing across the curriculum is also effective outside of the four-year liberal arts college setting. Messina and White found that WAC enhanced learning when they compared community college students who took an integrated history/English "paired course" to students who took the two courses in their usual separate format.

The researchers determined that the students in the "paired course" were twice as likely to earn "A" grades as those in the control courses and concluded that writing across the curriculum enhances the success of good students.¹²

In a very different setting, a school of business at a four-year public college, faculty reported superior course learning for students who participated in WAC-based courses over a three year period compared to those students who took standard courses including Business Communications.¹³

Do students improve more in subject knowledge and writing ability with or without writing across the curriculum?

Since writing is a complex cognitive task,¹⁴ we might predict that the increased experience that students in a writing-based course gain with written expression will make them better writers. Studies of WAC, however, do not support the theory that the act of writing alone produces improved writing.

Weiss¹⁵ failed to find improved writing among students who were exposed to WAC. Similarly, Messina and White found that students in a "paired course" wrote better on some but not all assignments than students in separate courses.¹⁶

In a particularly interesting study, Day used pre- and post-tests to examine how the number of writing assignments and the attention to grading of those assignments affected writing performance of sociology, English, and general studies students at a large public university. She found that increasing the number of writing assignments alone did not produce improved writing performance, but that student writing did indeed improve when all assignments were graded for content, spelling, grammar and logic.¹⁷

Similarly, Smithson used experienced judges to compare the quality of essays written by students in WAC-based introductory courses in a variety of disciplines to those of students taking standard courses. He found improved student writing

in WAC-based courses.¹⁸ Since the professors who taught the WAC-based courses received extensive training in methods of incorporating writing into a subject-specific curriculum, as well as teaching writing itself and paper evaluation, it is safe to assume that they pursued WAC with both enthusiasm and skill.

These studies hold WAC to a very high standard. Students certainly improve in subject-specific knowledge to some degree during a course regardless of the pedagogical methodology we employ. Furthermore, since most students already take some form of writing course, we might predict that they will improve in writing, at least during the period they are enrolled in that course.

The question we ask here is: Do students improve more in subject-based knowledge and writing ability with WAC than without it? Clearly some students do benefit from WAC, as compared to more traditional teaching techniques. But the studies suggest that WAC, as currently practiced, benefits the top students the most.¹⁹ This suggests that we should explore variations in WAC that could allow all students to improve their performance.

Most importantly, these studies demonstrate that only the most rig-

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orous applications of WAC are significantly more effective than traditional teaching methods. This is the case both for improved comprehension of subject-specific information²⁰ and for improved writing.²¹

Interestingly, a variety of studies suggest that writing-intensive courses may offer students benefits besides improved subject-specific learning and writing skills. Kirkland introduced creative writing assignments into the curriculum of the introductory biology course he teaches for non-majors at a four-year liberal arts college. He reported that both faculty and students felt that these assignments help reduce students' anxiety toward learning science.²²

Conversely, Weiss,²³ in a study that failed to find improved student writing in a writing-intensive course (see above), also failed to find decreased student anxiety toward writing. One explanation for these results is that student anxieties reflect, at least to some degree, the difficulties they actually have learning in a subject area. The students who reported reduced anxiety about learning science may have done so because the writing-intensive curriculum helped them succeed in learning science. If students' writing is not improving, for whatever reason, we would hardly expect that their writ-

ing anxiety will decrease.

Writing-intensive teaching methods may also improve student analytic skills. Butler suggests that, at the secondary school level, a rigorous program that includes writing, peer and instructor editing, and rewriting may improve student critical thinking skills in the sciences.²⁴

At the college level, professors see improved critical thinking skills in students taking writing intensive biology²⁵ and economics²⁶ courses. These courses asked students to recognize, understand, and critically analyze in writing an argument presented to them.

As students write within a subject matter and learn to analyze an argument, they discover how the argument is constructed and become familiar with how the "experts" in various disciplines think and communicate. Students gain access to intra-discipline conflicts²⁷ and consider fundamental issues around the nature, uses, and abuses of authority.²⁸

This process is considerably more complex than simply learning and repeating a set of facts. Indeed, this process exposes students to the sorts of higher-order thinking skills that prepare them to critique their world and to formulate solutions to complex problems.

Recently, one of us, a biologist with training in genetics, collabo-

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rated with an Americanist with training in African-American literature and history to teach a transdisciplinary course entitled "What Is Race?"²⁹

We sought to encourage students to explore how our social understandings of race are inextricably joined with institutions, practices, and cultural norms. We were also to study the contributions made by modern biology, including genetics and evolutionary biology, to current theories of race.

This process required that students explore both how the unquestioned acceptance of cultural norms can limit the scope and control the conclusions of scientific inquiry, and how the questioning of social norms can provide an atmosphere in which meaningful scientific inquiry becomes possible.

We used a writing-intensive pedagogy because writing seemed essential if the students were to understand the complex, and sometimes fallacious, arguments they encountered in reading about race. We also thought that writing allowed the students to define and develop their own positions on this highly contentious subject.

The writings served as the basis for student-led discussions that provided an active-learning forum for students to express and defend their positions and for those posi-

tions to change and mature. It is difficult for us to imagine how students could have accomplished these complex tasks without intensive writing and a student-centered classroom atmosphere.

In other studies, both students and faculty report that writing in a course increases student engagement with course material. Writing techniques that encourage active student learning have been developed for large lecture-format chemistry classes,³⁰ introductory biology classes,³¹ and history classes.³²

Results of the Harvard Assessment Seminars, a study that used extensive student interviews to determine the level of student engagement with each of their courses, support the idea that students benefited from writing.

Whether engagement was defined by the amount of time students spent on a course, the level of challenge they felt the course presented to them, or the level of interest they reported in the course subject, student engagement showed a strong positive correlation with the amount of writing in the course.³³

Writing-intensive pedagogy is often closely linked to student-centered classroom experiences. In writing-intensive courses, students actively participate in and take increased responsibility for their own learning. In this setting, the professor is a facilitator of learning

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rather than an expert.

Instead of simply conveying information to students who are expected to accept and memorize it, professors in this environment make information available through a combination of pedagogical approaches, including direct delivery and a variety of active-learning tasks.

Students read, think, talk, and write their way toward an understanding of factual material *and* the principles, concepts, and assumptions underlying the material.

Writing works best as a teaching/learning tool when used in a mature learning environment. But faculty skepticism often undermines efforts to create this kind of environment.

Why are faculty skeptical of WAC? First, and for many faculty members foremost, WAC takes time—student time, classroom time, and faculty time. Classroom time is a particular issue in the sciences, where each course must cover an often already overly long array of topics. But the time consumed by in-class writing instruction and student-led discussion can be partially replaced by the elimination of some in-class exams. These can be replaced by take-home exams and papers.³

Moreover, as a recent United States Department of Education study of science education makes

clear, American teachers of science would do well to emulate their more successful colleagues abroad, particularly in Japan, and teach more for depth of understanding than for number of topics covered.³⁵

Still, reading papers, commenting on them, and engaging students in individual discussions of their written work is time-consuming. But this work, too, can be partially offset by the elimination of the need to construct multiple choice tests. Nonetheless, one practitioner of WAC estimated that his workload increased about 25 percent.³⁶

Students also spend more time on a course if it is writing-intensive, but anecdotal evidence in the literature³⁷ and our own experience suggest that most perceive the experience as valuable.

Faculty in non-English/humanities disciplines may also worry that they are not competent to critique student writing. For instance, science faculty, who have extensive experience writing technical works for a specialized audience, may have little expertise writing for a general audience.³⁸

Quite reasonably, these faculty worry that since they lack competence as writing critics, they will not be effective in helping students improve their writing. These legitimate faculty concerns can only

The demands of teaching writing translate into more faculty work and require extensive faculty development.

be addressed through extensive faculty development.³⁹

We are left with a challenge. The overwhelming weight of current evidence suggests that WAC can improve both student comprehension of subject-specific knowledge⁴⁰ and their writing,⁴¹ but only when it is consistently and rigorously applied.

Furthermore, writing must be integrated into the curriculum vertically as well as horizontally. Exposing students to WAC as freshman and then reverting to traditional teaching techniques in subsequent college years is not likely to be any more effective than stressing writing only during a freshman English course—an approach that does not produce graduates with improved writing skills.⁴²

Finally, the demands of WAC do translate into more faculty work per student⁴³ and require extensive faculty development.⁴⁴

Given this reality, implementing and maintaining effective writing across the curriculum programs presents substantial challenges. Faculty in two-year colleges already have schedules that demand huge teaching loads in large classes while those in four-year institutions face increasing pressure to publish and obtain extramural funding, in addition to teaching.

Everyone is being asked to do more with fewer resources. This

overwork certainly decreases the energy faculty have to address broader issues of improved teaching and social justice.⁴⁵ Given all this, that some faculty view WAC as an administration attempt to extract even more work from faculty—and please legislatures in the process—is not surprising.⁴⁶

Colleges and universities could respond to the challenge of WAC by limiting class size⁴⁷ or budgeting for additional professors to help critique student writing assignments. But they are unlikely to take this step until they realize these expensive solutions are needed.

What we need is a collaborative, inclusive effort.⁴⁸

Such an effort would require that faculty first educate themselves and administrators about methods such as WAC that improve student learning, and then work with administrators to obtain the resources needed to implement these methods. One route to this goal would be for faculty and administration to collectively bargain a shared vision of improving student learning. This could be a starting place for finding the resources faculty need to improve teaching.

We live in an era when teacher unions are blamed for the problems of American education.⁴⁹ But the reality is that faculty unions play a

vital role in fostering faculty development while protecting faculty interests.⁵⁰

Given the concern of some faculty that they are not qualified to critique student writing,⁵¹ many faculty, we believe, could benefit from development programs that prepare them to use writing across the curriculum in their classes.⁵²

A single workshop, of course, will not enable faculty to effectively pursue writing across the curriculum strategies. To become proficient, most faculty will need ongoing workshops and one-to-one discussions before beginning WAC.⁵³

Here, faculty unions could play an important role by implementing these workshops and making sure that they are structured in a non-threatening, pro-faculty format.

Faculty could also use their unions as vehicles to advocate for the resources they need to implement these important changes. The task is large, but the potential gains are equally impressive. If we as faculty obtain the resources for WAC and effectively implement it, we can improve both our working conditions and the quality of the education we provide. ■

Endnotes

¹ Stock, 1986.

² Ackerman, 1993.

³ Kinneavy, 1983.

⁴ Magnuson-Martinson, 1996.

⁵ Weiss, 1979; Davidson and Gumnior, 1993; Grant and Piirto, 1994; Hilgers et. al., 1995.

⁶ Messina and White, 1992.

⁷ Weiss, 1979.

⁸ Weiss, 1979.

⁹ Smithson, 1995.

¹⁰ Moore, 1993.

¹¹ Moore, 1993.

¹² Messina and White, 1992.

¹³ Ault and Michlitsch, 1994.

¹⁴ See Weiss, 1979 for review.

¹⁵ Weiss, 1979.

¹⁶ Messina and White, 1992.

¹⁷ Day, 1989.

¹⁸ Smithson, 1995.

¹⁹ Messina and White, 1992.

²⁰ Moore, 1993; Weiss, 1979.

²¹ Day, 1989.

²² Kirkland, 1997.

²³ Weiss, 1979.

²⁴ Butler, 1991.

²⁵ Grant and Piirto, 1994.

²⁶ Cohen and Spencer, 1993.

²⁷ Farris, 1993.

²⁸ Weiser, 1992.

²⁹ Harris and Raimon, 1997

³⁰ Strauss and Fulwiler, 1987, 1989.

³¹ Ambron, 1987).

³² Steffens, 1987.

³³ Light, 1992.

³⁴ Cohen and Spencer, 1993.

³⁵ See Vergano, 1996 for brief description.

³⁶ Cohen and Spencer, 1993.

³⁷ Light, 1992; Hilgers et.al., 1995).

³⁸ Bays and Thall, 1994.

³⁹ Swilky, 1992.

⁴⁰ Weiss, 1979; Moore, 1993; Smithson, 1995.

⁴¹ Day, 1989; Messina & White, 1992; Smithson, 1995.

⁴² See Kinneavy, 1983 for review.

⁴³ Cohen & Spencer, 1993.

⁴⁴ Swilky, 1992.

⁴⁵ Gozamba and de los Reyes, 1996.

⁴⁶ Day, 1989.

⁴⁷ Grant and Piirto, 1994; Smithson, 1995.

⁴⁸ Shelton and DeZure, 1993.

⁴⁹ Moore, 1996.

⁵⁰ Bledsoe, 1994.

⁵¹ Bays and Thall,

⁵² Smithson, 1995.

⁵³ Swilky, 1992; Bays and Thall, 1994.

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