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(1997)

## **How WAC Changed My Life:**

**a Foreword to “Using Writing to Improve Student Learning of Statistics” (1989)**

*Robert Hayden*

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WAC works in strange ways. I got involved in Writing Across the Curriculum to help my students understand statistics. I still think that is essential, but I certainly have not had any recent breakthroughs in how to do it. What does strike me in looking back at the past decade is the change in the role writing has in my professional life. To my surprise, I have become a writer, a member of an Editorial Board, an Associate Editor and Coeditor. One thing special about the Writing Across the Curriculum program at Plymouth has been its encouragement of the faculty’s own professional writing. Let me tell you about some of my “adventures in writing” during the past ten years.

I came to Plymouth in 1985, four years after receiving my Ph.D. I had already published the obligatory paper based on my dissertation research. I had even had two rather peculiar commercial successes with my writing. First, someone had ordered a copy of my dissertation from University Microfilms, who then sent me a royalty check. Thus, I joined the select few who have ever made any money from their doctoral dissertation! Then a publication whose name I can never remember asked me to do a guest editorial based on my dissertation. In my own mind, I always call this

publication “The Chronicle of Lower Education,” since it performs a function similar to our own *Chronicle*, but for lower educational levels. They actually offered to pay me for my writing! This is all the more surprising in that my editorial never appeared. A new editor took over while I was writing the piece. He was not interested in publishing it, but felt obliged to pay for it, so then I joined the select few who have ever been paid for an unpublished work.

Despite these freakish commercial “successes,” I came to Plymouth wondering how much writing would be required for promotion and tenure, and what I could possibly write about. My piece in the 1989 PSC WAC Journal, “Using Writing to Improve Student Learning of Statistics,” was my first publication as a faculty member here. Eventually, it was rewritten for a total of five different audiences. One of our Composition instructors asked for copies to illustrate the idea of “writing for your audience.” One of these versions appeared in a collection of papers on using writing in teaching mathematics that was published by the Mathematical Association of America in 1990. That was my first “off-campus” publication as a PSC faculty member.

At about that same time, I taught an off-campus statistics course for high school mathematics teachers with Farid Kianifard, a tremendously energetic young statistician who was with us at the time. Even though the course itself was not a great success, he insisted we should write up our experiences, both good and bad, and submit them for publication. It seemed unlikely to me that anyone would be interested, but Farid’s enthusiasm was infectious, and we did get a paper written. For a while we were deadlocked over where to submit it. I wanted it to reach teacher trainers, though I was not sure what journal would be appropriate for that purpose. He wanted to submit it to *The American Statistician*,

which he felt would be the most prestigious place for it to appear. Eventually I let him have his way, figuring that I would get to submit it to my choice of journals after it was rejected by his. Unfortunately, *The American Statistician* accepted it with very minor changes, and it appeared in November of 1992.

In August of that year, the American Statistical Association had its national meeting in Boston, and I contributed a survey paper on using writing in teaching statistics. For the literature search, I used national databases which I accessed with the help of the staff of Lamson Library. This gave me access to many resources I would not have had locally, and I was so enthusiastic that I wrote a brief note on the process and distributed it electronically to a group known as the “Isolated Statisticians” — mostly statisticians teaching in small colleges without a statistics department. One of the staff of the database I used saw it, and asked to publish it in the newsletter they send to subscribers to their service. This was the first of a number of pieces I have put on the Internet that eventually found their way into print.

In addition to getting paid for an article not published, I have also had published an article not submitted. In March of 1993, my colleague Bill Roberts and I gave a presentation to school mathematics teachers at Keene State College. By then I was regularly thinking of translating my professional activities into writing, so Bill and I prepared a written version of our talk to hand out to those in attendance. As it turned out, we were scheduled opposite Dick Evans — a *very* popular speaker with that audience. As a result, we had many copies of our paper left over after the talk. I offered the remains to people on an Internet mailing list devoted to statistics education. To our surprise, the demand far exceeded our supply. Not feeling brave enough to tax the Mathematics Department’s copying budget still further, I prepared an electronic

version. Months later, Dick Evans congratulated Bill and me on our publication. When we asked, “What publication?” he showed us a copy of a newsletter Texas Instruments sends to teachers using their calculators. In it we found the electronic version of our paper! To this day we do not know how or why it was published.

This work with high school teachers led to my first books. The Connecticut Business and Industry Association received a grant from the National Science Foundation to produce a series of innovative high school mathematics textbooks. Most NSF grants I have worked with were submitted by the team who would actually do the work, and they were usually a group of like-minded people who had already collaborated. In contrast, the CBIA got the grant and then hired writers to produce the books. One fellow that they hired seemed to have a very bad case of writer’s block. He had produced nothing during the school year, and as the time for the intensive month-long summer writing session approached, the CBIA reluctantly concluded that he never would produce anything. A last minute replacement was sought. By a complicated chain of connections whose every link I still do not know, a friend of a friend sounded me out on this position. I interviewed for the job on a Friday. The following Monday, the summer writing session began with me as part of the team. It was a “trial by ordeal” of 60-80 hour work weeks, but a chapter did emerge at the end of the month. I eventually wrote about a third of the ninth and tenth grade texts, dropped out for a year, and am now revising my chapters in the hope of commercial publication. In the meantime, the materials are in pilot use by about 7000 students, mostly in Connecticut.

I have mentioned collaborations with faculty colleagues. Last spring, I was fortunate to collaborate with a very talented student, Michelle Lamarre. For years I have had students working on a study of the statistical training of future teachers. Because of my

involvement with textbook writing, the data they gathered was itself gathering dust. Michelle expressed an interest in working with it and did a superb job of analyzing it. She presented her results to the New England Statistics Symposium in April and to the Northeastern Section of the Mathematical Association of America in June. We worked together on a written report which we submitted to the *Journal for Statistics Education*. Reviews from the three referees pointed in three different directions, but the editor was encouraging. Michelle has graduated and gone on to bigger and better things, and I have been very busy with other projects, but I hope we can finish that paper and see it “in print.”

The *Journal for Statistics Education* is a relatively new electronic journal, and its papers never do appear “in print” unless you print them out yourself. Once the journal was up and running, the founders established an Editorial Board with a revolving membership to carry on the journal’s work. I have been a member for a year or so, and now I get to complain about other peoples’ writing. Alas, the review process is double blind so my position on the Editorial Board will not help to get my paper with Michelle published. Starting in 1997, I will be coeditor of a section of the journal called “Datasets and Stories.” Here we present examples of data, and the story behind the data, that may be useful in teaching statistics.

In addition to the papers mentioned above, I have also been writing reviews for *The Statistics Teacher Network* and *The American Statistician*. The latter journal has long had a section entitled “Accent on Teaching Materials” which has been very dear to me because it provides a place for reviews of all the many nonbook things that might be of use to teachers. As one example, I reviewed the Internet’s statistics education e-mail list, EdStat-L, for this journal. I have already mentioned the Internet a number of times. If this article could be described as “How WAC Changed

my Life,” it could just as well be rewritten as “How the Internet Changed my Life.” The Internet provides a way for faculty at the smaller, poorer, or more isolated institutions to participate in their professions. I hope Plymouth will continue to enjoy the access and support (a.k.a. Frank Olcott) I have enjoyed in recent years. These resources are a new thing in education, and few journals have a section for reviewing e-mail lists. I am very glad that *The American Statistician* provides a home for such oddball reviews. Starting this month (January 1997), I will be the Associate Editor of that journal responsible for these reviews of “miscellaneous stuff.”

Ten years ago I wondered if I would be writing at all at PSC. Today, writing is a major part of my professional life, and Writing Across the Curriculum has had an important role in that development. It is obvious that good luck has played a major role as well — you usually *do* have to submit a paper in order to get it published! Still, I feel I have learned some things that might encourage the writing of others. First, I found it was much easier to get published than I ever imagined. If you are doing anything interesting, I encourage you to write about it. Chances are your colleagues will find it interesting, too. Often the real problem is figuring out where to submit the result. Graduate school taught us about the research journals in our fields, but PSC cannot afford to buy each of us a cyclotron to pursue research on fundamental particles. Publications aimed at high school teachers in our own field may be much more accessible. Don't overlook publication outside the academic world. Several of the writing activities I described above were sponsored or published by commercial entities. While none of them led to a place on the *New York Times* bestseller list, I think they were all effective in reaching their appropriate audience. The role of writing in fundamental research is to inform our colleagues of what we are doing in the laboratory. For those of us who are primarily teachers rather than researchers, it is just as important to write to share what we are doing in the classroom.