Machines for the garden

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I was amused at the apocalyptic vision painted by the headline: "Computer Jargon Imperils English."' While that particular bit of media was clearly ironic, most of us would admit that the techological boom is having some impact on our teaching, especially within writing programs. Although not yet a substitute for the word "writing," the concept of "word processing" has made rapid inroads into the practice of getting words down on paper. Today there are many who, face-to-face with word processing stations, long for the days of such mechanical breakthroughs as typewriters.

Whatever your response to the jargon spawned by these devices, it seems clear that their influence will continue to grow. In a recently published, sixty-page bibliography, Paula Reed Nancarrow, Donald Ross, and Lillian Bridwell list over 300 studies of computer technology as applied to the writing process.[1] The titles listed range from "A writer's tool: computing as a mode of inventing,"[2] to "Computer-Assisted Poetry: The Writing Machine is for Everybody"[3] and their sheer numbers indicate how important it is to come to grips with the available technology. For a writing program administrator, this means more than becoming familiar with what is available and how it can be used. Directors of writing programs will have to actively encourage their departments and schools to acquire the necessary equipment if they are to ensure that the best possible systems are created.

Obviously, gaining support is made difficult by the initial costs that will have to be borne. Yet the largest battle to be fought will not be financial; it will be the battle to dispel the air of mystique-or the stench of the cabal la-that many faculty members find encircling computer technology. Addressing the whole question of computers in teaching, Gayle Byerly lists five conditions for successfully uniting computer technology and academics.[5] Four of the five conditions are concerned with engaging faculty and administrative support; only one deals specifically with the question of software. My purpose here, then, is not to provide a great deal of information about computers and the myriad tasks they can perform. Rather, I want to provide a brief plan for convincing a perhaps reluctant department that computer technology can be very valuable to teaching in the humanistic disciplines, specifically within departments of English and writing programs. By approaching the question in these broad terms, you can gain the support of many of your colleagues.

I.

An unfortunate stereotype still surrounding computer-based study is founded on what was originally, and unfortunately, named CAI, computer-assisted instruction. Many programs, modeled on the step-by-step progression used in teaching courses such as mathematics, still carry the taint of programmatic, unimaginative teaching. They look

like "electrified" workbooks. Today, a growing number of programs are being designed to teach grammar and other materials more dynamically.[6] But while CAI is undergoing rapid developments, the design and functioning of many programs only supports the prejudice that teaching writing and teaching literature are two unequal activities. This judgment is devastating enough to most writing programs. Recklessly requesting computer equipment merely for your program's use will simply exacerbate the problem, allowing many to see both the writing program and the computer as elements in a basic "skills" program ratherthan an integral part of theirdepart ment.' In order to gain support for word processing, and to do so without alienating the rest of the department, the best tactic is to plan ways to apply word processing both to writing and to literature.

The first step in this process is to discover what facilities are available at your institution. While the possibilities are legion, for our purposes we can assume three basic situations. You may be at an institution that provides a great deal of support for word processing and related areas. Or, you may be at a school where there are good computing facilities, but they are used primarily by people in the sciences or by those who do statistical work. Or, you may find that your school has almost no facilities available fir faculty use. I am going to assume the second situation in this essay, since the first has few problems that can't be solved internally, and the third presents difficulties that are too complex to be dealt with here. In this last case, let me suggest that the problems are not unsolvable', rather, they involve a commitment of time and effort that most program administrators cannot undertakc.e

Before continuing, I should mention that I do not believe that "personal ¯ microcomputers are the way to go. Although there are many useful applications of such equipment, they present too many problems at the early stage we arc discussing here. My reasoning is based on a number of factors. First, I believe that the major brunt of financing, both initial and continuing, should be met by a school's computer center and not departments. Given that assumption, your school may choose to adapt their existing equipment to your needs rather than purchase mini-or micro-processors. Second, I prefer to have the flexibility and storage capacity of a large, mainframe computer at my disposal. The possibilities for future expansion into other areas are much greater with such a machine. Third, I believe that making use of a smaller processor will lead to a much larger commitment of time than is healthy. It is important to be able to delegate ail those annoying little system problems to a computer center that is paid to deal with them, And no one needs the strain of becoming a full-time consultant, as happens when a department arranges to purchase its own equipment.

I am assuming that most program administrators will find themselves in the middle category. Discovering that fact will have acquainted you with a prime source of information: the staff at your computer center. The staff members are just as important as the equipment. Without theircooperation, it is impossible to obtain the best materials or to fully utilize what is available. As you talk with the staff, your inquiries will probably elicit two types of response. One response will be a strong desire to help. That desire will be qualified, unfortunately, by a rather vague sense of what humanities types do or want to do. That means you have the responsibility for deciding just what you need the computer to do for you-a large task.

Unfortunately, the other response is neither helpful nor pleasant. Some staff members may he annoyed at an invasion of their grounds. They might begin to talk about the greater demands put on the system by word processing, to anticipate annoying

questions from illogical, "math-poor" users, and to express other well-established half-truths. In all of these cases, the simplest procedure is to talk to people higher up on the staff. Most of them jettisoned their prejudices as they advanced.

II.

What, then, are the uses you envision? What materials will you need in order to convince your department of its needs? In English departments, the most readily available and useful capacity of the computer is for word processing or text editing. Many schools will have a program of some sort available or can buy one easily enough. Although drill programs for the workshop are equally common, a word processing system is the most adaptable feature available, and hence the foundation for the support you wish to gain.

The most urgent need is for on-lint storage-both permanent and temporary-of the materials on which you are working. As with all computer questions, the simple question immediately becomes muddied by related problems. The question of "what is storage?" is immediately qualified by the question of "how it can be affected?" For instance, some text-editors require that you use your own storage space to maintain a hyphenation file. Other programs must use your storage space to take a working file and turn it into a print file. The nature and extent of the problems involved in such questions only become truly apparent as documents are produced. If you know about such things, ask specific questions now. If you don't, ask now many pages can be stored on an account-and try to get an answer in terms of typed pages. Knowing how many "Kbits" of storage are available won't help much. If you can't store more than twenty-five pages of material on any one account, you're going to have trouble. Ask closely about this fact. Often, some other departments-such as math or engineering-may have the best accounts. If that is true, a larger problem may have been uncovered. Such territorial imperatives are often resolved only by deans, but it is best to try to solve them within the center itself.

The question about storage leads to the next question: what type of accounts are available and to whom? In general, expect to find three separate types-faculty, graduate, and undergraduate-and expect that the major difference among them will be the amount of permanent storage allotted to each. The problems that these differences can cause will be discussed later. For now, it should be noted that there is a general as well as a specific purpose behind many of these questions: to discover just how annoying the system will be to use. Ask about the availability of terminals and see if there are any figures available on response- and down-time. If response time is poor during certain periods, as it usually is, then you will want to schedule demonstrations and teaching to avoid those times. If the computer is down fairly often-it usually isn't-then there may be large problems with reliability.

The next questions begin to move into areas of more specific importance to a department of English. Ask about the quality of the printer. If the need for Letter-quality printing has been small, then the center is not likely to have filled the need. Better printers will have to be purchased. To justify its purchase, you will have to demonstrate a growing interest in such equipment. Until then, it is important not to underestimate the positive qualities of a good word processing program, even when it's hooked up to a poor printer.

In regard to the program itself, there are some preliminary questions worth asking, although no system displays its full benefits and quirks without thorough use. What

documentation about the program is available? There may belittle, although a good center will provide manuals of its own to supplement those of the company selling the program. Poor documentation and poor servicing remain the great flaws of the computer industry. How large a document can the system reasonably handle? What about footnoting capacities, page formats-what the printed page can be made to look like-hyphenation capabilities, and other specific needs'? In addition to the ready revision that is possible with a word processor, a footnoting capacity can be one of the biggest initial selling points for members of the department. It may seem silly to others, but any academic knows how much time can be saved by using a system that automatically counts, numbers, and types footnotes.

Returning to thequestion of accounts and storage, it is important to find out if graduate and undergraduate accounts have permanent storage. The reason is simple. The easiest place to begin building a core of users may not be among the faculty. While more and more faculty members are recognizing the benefits of writing with the aid ofa word processor, you should expect to find a fair amount of intransigence. If that is the case, it helps to cultivate the graduate students. Their interests and needs usually overcome any initial qualms. In fact, most graduate students, facing the cost and annoyance of hiring a typist for their dissertations, are well aware of the advantages of using a word processor. It is very important, however, to be certain that funding of accounts, permanent storage, and adequate printing are available. You do not want to encourage your graduate students to make use of an inferior system. Convinced of its adequacy, you can go ahead and begin building what will be a solid core of dcdicated users.

The best way to convince anyone of the benefits of the system is simply to begin using it yourself. As interest builds, along with your knowledge, a group of users will form. Somewhere within this time period (its length is highly relative), two goals should be accomplished. First, classes in using the processor should be offered specifically For your department (quite probably by you). Second, your faculty should purchase their own terminal and have it installed in a room set aside for that purpose. A terminal is not a mimeograph machine. While no one wants to apotheosize computer technology, it is important to cultivate a sense that word processors arc notjust machines but teaching devices. Setting the equipment up in its own room is a small but important step. The next move is to demonstrate some of the larger possibilities.

III.

There are already numerous applications of computer technology to classroom teaching. Some are very mundane. Some are very sophisticated projects that are capable of dynamically uniting the computer, the classroom, and the teaching of writing and literature. How quickly these more sophisticated projects can be undertaken depends upon how solid a foundation is built in the first place.

The initial classroom applications will be simple, perhaps simplistic, but they break ground. To begin, there are two groups in any faculty that will probably have more than a passing interest in using a terminal . The first group consists merely of the faculty member who teaches the bibliography course. The second group encompasses the entire creative writing program. This group can find uses very readily, and their applications will lend weight to arguments about the importance of computing for the writing program. Because these latter projects finally reach our real goal-Linking writing and word processing-I want to discuss them later at length. First, it's worth noting how a good bibliography course can make use of a text-editor.

Given the importance of computers as tools for basic library research, familiarization with them is integral to anyone learning to engage in scholarship. Such necessities make it easy to enlist the teacher of the bibliography course and it is not to envision a design for the class. The production of an annotated bibliography matches the objectives of most courses of this nature. If a specific topic or subject is chosen at the outset, either by individuals or by the class as a whole, then the system can quickly be put to serious use. The ability of word processors to add material anywhere, to delete, and to rearrange, is a clear advantage in bibliographic work. Later, the semester will end with the completion of a publishable bibliography-an incentive in any class.

Unfortunately, the presence of this course does not provide a very strong argument for using the computer in a writing program, or even in other courses in the department. A course in stylistics would be a much stronger argument. It would allow for thecombination of linguistic, stylistic, and composition theory by making use of the computer for pattern scans, statistical counts, readability evaluations, motif searches, or any of the myriad possibilities already being demonstrated by scholars. Still, these projects are time-consuming and limited to a small population. They may also still appear too mechanical for many tastes. A wider base of support among the faculty can be gained in less time by working with the creative writers in the department.

There are three very good reasons why these colleagues will provide strong support. First, enough of them will have seen such articles as those in *Time*[9] or the *Writer's Digest*[11] to have become interested and willing to make the effort to team. This will ingness usually outstrips that of the rest of the faculty. At the same time, use by writers provides a second, bonus argument. If the people who produce literature are willing to make use of the technology, then it is difficult to see why it should not be used by those who study that literature. Under such circumstances, the argument that technology has no place in the humanistic disciplines begins to disintegrate rapidly.

The third reason for meeting with the writers is the most important for the writing program. Having creative writers make use of the system finally provides the needed argument in its full form: word processors are useful to writers, to writing, and thus, to the writing program. For example, there are few better ways to demonstrate the idea of writing as an activity than by observing and talking to an individual who works on a processor. A writer working before a lighted screen rather than a sheet of paper has already escaped from the realm in which the written word is fixed on the page. It will never be possible to eliminate that slight separation between trying to form ideas and trying to write them down. But the fixed quality of print is absent when you work on a word processor, and with it go to its attendant inhibitions and restrictions-shaving that separation down to almost nothing.

Enlisting the aid of the creative writers will go a long way toward introducing word processing into a department's program and into its writing program as well. There is, however, anotherhurdle to clear. The argument may arise that the system is clearly useful for writers of all kinds, but its applications to the teaching of literature are limited. In the face of such an argument, the presence of the bibliography course wilt provide only a meagre example of the widerapplications of the system. Nor is there time to produce other courses, as was noted in discussing the stylistics course. The elusive blend of literary study and computing is still absent. However, there are a num-

her of course projects discussed elsewhere in which literature is the primary focus. Two separate programs are worth mentioning: the Brown University experiment with a communal poetry text and the similar SEMINAR program used at Wellesley College.

The Wellesley course is described briefly in an article. "Developing Computer Literacy at A Liberal Arts College," that also discusses some of the topics dealt with here." Since I am more familiar with the Brown project, I will write about it. Described at length in "Poetry and Computers: Experimenting with the Communal Text," the project attempted to center an introductory poetry course around a computer-based corpus of poetry and critical materials.'[2] While those materials formed the core of the readings, students were expected to expand the text by adding their own comments, responses, and ideas. In this way, the text could he both read and written at the same time. With such a combination of reading and writing, we hoped to teach the students both the rudiments of literary analysis. while at the same time providing them with a program for writing about literature. Since the text expanded as they commented on all portions of it, the students were given a unique working experience in compiling research and putting it to their own use. There was no other way to have collected and combined these materials as easily and as interestingly as on the system.

This course, and the one taught at Wellesley, are indications of what can be attempted. Their most successful innovation is the avoidance of passive learning; both courses require that students interact with each other, with the materials, and with the system. The oral interaction of the classroom is still present, yet there is also a high incidence of written response-a clear benefit to the students' writing habits. The use of the Computer-based text thus supplements classroom activity by allowing students to create a written dialogue between themselves, the material, and their fellow students.

Programs such as these, while not available to every institution, can help convince faculties that computers have a place in the English department. As I noted at the outset of this essay, many WPAs already know that they want some form of computer-based instruction. The question was how to demonstrate the importance of such instruction to the department as a whole. Assuming that a degree of success has been reached. it might be enjoyable to recall some of the reasons why computers are a useful tool for growing writing programs.

There are, of course. many packages available in traditional CAI education: grammar drills, spelling exercises, evaluation of errors and readability levels, and other focused projects. While much of this work may appear mechanical to many of us, our students may not have the same response. Nor should we overlook the large benefits in time to be gained from such programs. Their application to the workshop is readily apparent, and supplemental work of this kind is available in a variety of forms. The more exciting programs, however, are those that are designed for larger writing tasks.

In addition to the SEMINAR program and the Brown Communal Text project. a number of different applications have been designed. In "Fear and Trembling: The Humanist Approaches the Computer." Ellen Nold describes a program for writing poetry, one to aid in teaching logical problems, and a third for encouraging the exploration of invention strategies and pre-writing techniques. Stephen Marcus describes another poetry-writing project in "Compupoem: A Computer-Assisted Writing Act ivity."[14] Helen Schwartz's "Monsters and Mentors: Computer Applications for Humanistic Education" provides a thorough, and readable, discussion of a range

of applications, one of which closely resembles Marcus's project. She also describes a project in literary analysis that allows for a form of student interaction via a so-called "Electronic Bulletin Board."

It may be that one-on-one applications will prove to be the most useful, that the dynamic merging of computer and writing class will he too complex and too costly to succeed. However, the projects at Brown and Wellesley. along with Schwartz's program, would seem to indicate otherwise. Whatever the final outcome. it is clear that some use of current and future technology will be a part of many writing programs. Following some of the suggestions made here may help WPAs to influence the design of that technology.

Notes

[1]Don Nunes, "Computer Jargon Imperils English and Intimidates Would-Be Users," "Washington Business," *The Washington Post*, June 21, 1982, 11.

[2]Paula Reed Nancarrow, et. al., "Word Processors and the Writing Process: An Annotated Bibliography" (Minneapolis: Univ. of Minnesota, May, 1982).

[3]Hugh Burns, "A writer's tool: computing as a mode of inventing," ED193693, (1980), 8-9.

[4]Richard W. Bailey, "Computer-Assisted Poetry: The Writing Machine is for Everybody," *Computers in the Humanities*, J.L. Mitchell, ed. (Edinburgh: Univ. of Edinburgh Press, 1974), 283-295.

[5]Gayle A. Byerly, "CAI in College English," *Computers and the Humanities*, 12 (1978), 281-285.

[6]William Wresch provides a good overview of the shift from traditional CAI to more flexible programs. See his "Computers in the English Class: Finally Beyond Grammar and Spelling Drills," *CE*, 44, 5 (Sept., 1982), 483-490.

[7]The same problem exists with using technical writing courses as an argument for general applicability. There would be little difficulty in finding uses in such a course, or finding support in other departments. But the majority of the faculty in a Department of English would not provide support on this basis alone. The exception would be in the case of a nearly autonomous writing program. In such a situation, however, the program would be independent enough not to encounter the above problems in the first place.

[8]If you decide to make such a commitment, you might begin by becoming a member of the Association for Computers and the Humanities. They publish a regular journal and newsletter, and sponsor panels at most of the the major conventions. It is also worth remembering that there are government agencies that sponsor programs in which equipment purchasing is subsidized. For example, the NEH has a program, "Curriculum Materials Grants," that might support such a request.

[9]J.D. Reed, "Plugged-In Prose," *Time*, (Aug. 10, 1981), 68-70.

[10]Robin Perry, "A Writer's Guide to Word Processors," *Writer's Digest* (April, 1981), 21-30.

[11]Nancy H. Kolodny and Gene Ott, "Developing Computer Literacy at a Liberal Arts College," *NCEE* (1981), 96-99.

[12]James V. Catano, "Poetry and Computers: Experimenting with the Communal Text," *Computers and the Humanities*, 13 (1979), 269-275.

[13]Ellen Nold, "Fear and Trembling: The Humanist Approaches the Computer," *CCCC*, *26* (October, 1975), 269-273.

[14]Stephen Marcus, "Compupoem: A Computer-Assisted Writing Activity," *English Journal* (February, 1982), 96-99.

[15]Helen J. Schwartz, "Monsters and Mentors: Applications for Humanistic Education," *College English*, 2, 44 (February, 1982), 141-152.