Computer Programs in the Writing Center: A Bibliographical Essay

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Writing center directors have always been called upon to play many different roles. Now, many of us find ourselves at the keyboard—having become "computer hackers" as we adapt the new technology to teaching writing. In some circles, computers have been subjected to sufficient demystification to pass from enigma to cliche. But for those of us involved in teaching composition in our writing centers and classrooms, there yet exists a bit of mystery.

Computer technology assists not only the composing process but also the process of teaching composing. The new technology is changing the way we teach, tutor, and write. Walter Ong's observation—the *what* and *how* we write are shaped by what we write with—is relevant as we begin to understand *how* the computer affects the composing process and *what* the computer helps us write. This article concentrates on the use of computers to assist the composing process and the teaching of composing in the writing center.

What the Research Says

To adapt the computer intelligently to the writing center's approach, we should consider more of what recent wisdom tells us. In our enthusiasm to adopt the new technology, we should develop a performance objective based on what we think our purpose is. For many composition scholars and teachers, the "heart of the matter" is to teach composing and not computing—"to teach writing, not word-processing" (Sommers and Collins 27). Also, we should remember why we became excited about

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computer capabilities in the first place—the assumption that facilitating the composing process improves writing ability. We should consider this assumption conservatively. Facilitating composing—in the classroom or in the writing center—does not translate electronically into better writing. In fact, Jeanette Harris in a *College Composition and Communication* issue devoted largely to computers and composing reminds us to maintain a wise skepticism, explaining that "rather extravagant, largely unsubstantiated claims have been made about the potential of word processing to improve student writing" (323). And Elizabeth Sommers and James L. Collins report that "not a single bit of research tells us that writing quality is improved when word processing is used for instruction purposes" (34).

The most recent research, however, tells us that important advances are being made in realizing the computer's potential for the writer. The current literature tells us that "students who use computers for composing write more, revise more and improve the quality of their compositions" (Daiute, 1983, 1985; Dudley Marley, 1985; Papert, 1980; Moore 4). Though computer composing seems to have a positive effect on writing improvement (for example, see reports by Jane Lightcap Brown and John P. Pufahl), most writers and researchers continue to emphasize the merits of word processing to facilitate revision of written texts. That the word processor is a star revising tool is common knowledge. However, to bring about real and lasting growth in students' writing abilities, we must teach the advantages of electronic composing in *all* parts of the composing process. One researcher puts the challenge this way: "If students learn to use computer tools under the guidance of teachers who understand the writing process, computer tools can help students view writing as the discovery process it is" (Moore 5).

As Muriel Harris observes, we in the writing center are in an excellent position to do this. We teach from "an ideal situation" ("Growing Pains" 6). We see a wide variety of students; we respond creatively to diverse composition needs; we adapt quickly and flexibly to change. We have been innovators and exemplars. In fact, the kinds of things that researchers tell us most affect improvement in writing quality are the things we do with a special finesse. For example, the collaborative learning brought about by the computer-lab environment can be one of the writing center's strengths. And, we institute as a matter of course that which researchers tell us determines improvement in writing quality—not simply instruction in acquiring writing behaviors (the kinds of habits word processing can help students acquire), but the kind of dialogue advanced by tutorial interaction that is central to thinking critically and creatively.

In "Electrifying the Composing Process: Electronic Workspaces and the Teaching of Writing," Olga Howard Fischer and Chester A. Fischer

discuss the role of the microcomputer according to the five writing pro-
cesses we frequently delineate to our students: prewriting, organizing,
drafting, revising, and proofreading/copy-editing. The Fischer report con-
siders the computer to be a particularly suitable medium for teaching the
process approach, especially in the writing center.

Prewriting

The computer's usefulness in assisting students in drafting, revising, and
proofreading has been frequently emphasized, but its merits in assisting
students in prewriting and organizing have received less attention. The
computer can be used to teach prewriting strategies in the writing center in
many ways. Sophisticated public domain programs are inexpensive and
easily obtainable. Second generation programs promise imaginative, effec-
tive invention techniques.

According to Donald Murray, a computer "facilitates and enriches
prewriting" by encouraging "electronic rehearsals for writing" (Fischer and
Fischer 114). Put another way, the computer invites students to produce a
written record of their exploratory writing activities. The availability of
hard-copy print-outs in the initial composing stage—the stage during which
intervention, indeed collaboration, has been found to be most likely to
affect the subsequent composing process—allows students to feel as if they
have accomplished something substantial at a point in the process during
which they usually feel tentative about getting something down. Hugh Burns
explains the computer's appropriateness as an invention aid in computer-
assisted prewriting: "The processes of rhetorical invention are basically
actions and reactions . . . the computer acts to create the tensions, and the
writer reacts to create the intentions" (27).

The best prewriting software seeks to draw students into this kind of
activity with heuristic questions, inviting interactive response. Some pro-
grams help specifically with brainstorming activities, offering open-ended
sets of questions for the student to answer on screen. Responses generated
in brainstorming and other prewriting activities can be stored and then
retrieved during the drafting process. Some prewriting programs, "Brain-
storm" for example, allow the tutor or instructor to add specifically
directed questions, thereby customizing the program to a specific writing
activity. "Prewrite," a program that is ideal for writing centers, can also be
customized according to a center's needs.

The writing center can also utilize the computer to teach creative
problem-solving exercises. The newest research tells us that creative
problem-solving techniques will be increasingly required by the composing
demands of the new media (Halpern and Liggett 2). Such strategies can

supplement other heuristic approaches and help students conceptualize their topics in new and original ways. One program, "Creative Problem-Solving," features analogy-making activities. Such activities encourage imaginative action and help students uncover the point of "conflict" from which we are told a writer begins to form "intention" about his or her topic (Gage 2).

Other prewriting applications are task specific and become especially useful as writing centers assist more students with diverse writing projects from across the curriculum. For example, "Burke," a program based on Burke's dramatistic pentad, aids students in expository or journalistic writing projects. Programs specifically designed to help students with special writing assignments like research papers are also being developed.

Though many prewriting programs help students with specific writing tasks, the best ones are integrative, teaching strategies that are transferable and that involve other composing processes. One program that may prove particularly effective is "Composition Strategy," a sophisticated program that does what effective tutors do: prompt students past the gaps that occur as a result of translating thought into prose. By supplying key word cues that lead writers on to their next sentence, the program helps them get ideas down. For example, at the end of a student's sentence, the program places a key word—a word that directs the writer onward. These "prompts" are conjunctions and other lexical direction signals that are automatically removed as the text is printed. The program has the potential for leading students past "silences" which, when writing unassisted, can sometimes become "blocks."

Prewriting programs like "Composition Strategy" can teach word-cue tactics that help students move their thought along, helping at the same time to implant an organizational pattern. These programs and others like it teach prewriting by borrowing a strategy from neurolinguists who suggest the efficacy of helping writers with cognitive mapping of their own texts.

Organizing

Students often come to the writing center for help with organizing for rhetorical effectiveness. The fluidity of text generated on the computer seems to encourage students to experiment with various organizational strategies. In fact, students can easily print out several different copies of a paper, each organized differently, and choose the most effective one. Some software programs provide a structured form and ask students to generate substance; others address organization organically as part of the specific task environment.

The computer can be used to help students with organizing in several ways; some programs provide open-ended prompts that help students focus on and conceptualize rhetorical components such as topic, main idea, audience, and purpose. Another program, "Organize," gives students a choice of starting places: Beginnings for locating an approach, or "Audience Analysis" for developing an audience profile. Also useful in the writing center are outlining programs; in fact, one or two terminals in the writing center may be set aside as outlining stations with an organizing program kept in place.

Writing centers serving writers across the curriculum, as well as those seeking grants to purchase more computers, might like to know about "The Proposal Writer," a program that guides in the smooth and systematic composing of grants and proposals by teaching the organizational conventions of such types of discourse. Again, writers are led through the program by a series of prompts that ask them to supply information that can be saved, reorganized, and compiled into the complete proposal. This kind of "prompting through the process," featured by many interactive programs, seems particularly useful in the writing center because it ensures that each student receives an appropriate structuring heuristic.

Drafting

Draft writing with software programs like "The HBJ Writer" can make the composing process less physically and psychologically demanding—if the student is put at ease with the new drafting tool. The goal of the drafting stage is simply to get words on the paper with "minimal frustration" (Fischer and Fischer 116). The high-tech aura of the keyboard and the responsive "video-text" on-screen can be an invitation to students uncomfortable with pen-in-hand composing to enter the "electronic workspace" (Fischer and Fischer 113) in which they have played video games.

Stressing fast computer drafting in the writing center can help the student who is slowed down, inhibited or frustrated by composing pen-in-hand. Computer drafting allows fast transcription of thought. This can be an advantage for writers like those Muriel Harris describes, "who keep losing the sentence they have composed . . . in their heads because they cannot transcribe it [on paper] . . . with sufficient speed" (*Tutoring Writing* 65). Encouraging students to use the computer for drafting can help ease some of the frustration these students encounter which, according to Harris, occasionally "causes them to settle for less on the page than they are capable of composing" (*Tutoring Writing* 65).

In addition to reducing some of the physical strain of drafting, the computer can reduce some of the psychological strain (Pufahl 27). It can act

as an "electronic scratch pad" without demanding neatness or legibility (Fischer and Fischer 115). Clean hard copy printouts are more conducive to review than hand-drafted ones. In fact, students can be encouraged to do their computer drafting quickly, moving to printouts for the revision process. A clean typescript copy often gives the student the psychological boost he or she needs in order to spend more time improving it.

Drafting with the computer, in addition to helping students produce the fast first drafts that process theory stresses, seems to encourage students to write more. Students drafting by hand are often reluctant to add the developing thoughts that occur spontaneously as they compose. In fact, the computer makes it easier for students to add information, expand meanings, and supply the very details we ask of them. Pufahl found that "a brief session on entering, correcting, and adding text not only taught students basic word processing but encouraged them to *add* information" as well as to make correction (26).

Most programs suitable for the writing center's software library include either writing instruction applications, text analysis programs, and/or word processing programs. Certainly, the ease of drafting in the writing center will depend upon the kind of word processing program the center uses. Many helpful word processing programs are included in instructional or text-analysis media, for example, the "HBJ Writer," which includes word processing, prewriting and planning aids, proofreading and revision help, and formatting and printing functions. Its design makes it a wise choice for writing centers, based as it is on modern rhetoric and composition theory. Other word processing programs—"Wordstar," "Word Perfect," and "Textra," for example—offer many attractive drafting aids.

Revising

The computer's revising capabilities are well known: quick corrections, text-shifting ease, a fast series of drafts that allows students to see immediately how changes look in print. Halpern and Liggett claim that "there is no more efficient way to polish a text than with word processing" (37).

Writing centers can use the computer to teach revision skills by encouraging students to enter their handwritten drafts into the machine and then to schedule a revision session with a tutor. Word processing facilitates revision primarily on two levels. First, as students enter their hand-written prose into the machine, they tend to make surface revisions, changing their drafts at the word and sentence levels. Second, internal revision may occur during the initial computer drafting stage, but it occurs more frequently with the review of successive hard-copy drafts. What the computer is inviting students to do is to revisit their writing more often. As Elizabeth Sommers

observes, students writing on-line "seem to be more in touch with their compositions" (5). In fact, many spontaneous revisions come about as hand-marked changes are entered from the hard copy draft into the on-screen document.

One notable revision program adapts Richard Lanham's "Paramedic Method" to the computer: "Homer: A Computerized Revision Program" provides revision checklists and analyzes texts for sentence variety, vagueness, nominalizations, and overuse of "to be" verbs. Such revision checklists address internal revision. In addition, centers may wish to utilize text-editing programs to emphasize style. A number of programs focus on teaching style by offering text analyzers that provide feedback for stylistic revisions. For example, programs like "Writer's Workbench" have been said to "raise standards for writing by giving writers more incentive for revising their work" (Halpern and Liggett 57).

What we should remember about computer drafting and revising is that the facilitation of the composing process comes about *if* we teach appropriate word processing functions as revision skills, linking the two activities in context. The effectiveness of the computer in encouraging revision, in facilitating composing in general, ultimately depends upon the effectiveness of the tutor or instructor and his or her ability to help the student make connections between computer function and revision skill.

Proofreading/Copy Editing

The newest software complements proofreading and editing by allowing students to analyze their own work electronically for spelling, repetitive patterns, cloudy phrases, and, in some programs, even libelous or biased language. These programs emphasize the merits of writing readable prose, as well as the relative ease of shaping unwieldy passages into more readable ones. In fact, Fischer and Fischer observe that one way word processing aids in proofreading and copy editing is that all along the composing process errors are so easily changed that often the review copy is "virtually error free." Once writers create their meaning, a number of programs can help them shape that prose according to the conventions of standard written English. Certainly, programs that feature a dictionary, thesaurus, grammar reference, and style book are becoming commonplace.

The computer can make proofreading and copy editing the learning experiences they should be. Text-analysis programs encourage the development of editing skills. Proofreading and editing programs free students to concentrate on the good thinking we keep telling them is required of good writing. That is not to say that student writers begin to devalue attention to correctness, convention, and style. After all, if we are teaching those skills in

an holistic way, we are showing that such writing behaviors come about as part of the process. But the new freedom the computer makes possible does mean that writers may begin to develop confidence in their own creative and communicative powers.

Composition camps have been divided on the issue of the pedagogical soundness of using such programs as spelling and grammar checkers in the writing center. Some argue that these programs give students an unfair advantage. However, most of us would not expect an engineering student to work without a slide rule; nor would we expect an accounting major to function without a calculator. Should not the writing student have access to writing tools?

Via word processing, students can see what qualities are important for writing well. And those qualities remain the sane, keyboard or pen-in-hand: the ability to think, plan, translate, review, and execute. Using the computer for proofreading and copy editing, students can see that some of the skills about which they have been made to feel deficient in a product-centered pedagogy are not the ones essential to composing effectively on the computer.

A Final Note

Though I am delineating the five processes to examine how using the computer can help teach them, I should stress that the most viable computer applications for the writing center will be those that address the processes integratively and cohesively. Neither the writing center nor the student needs a program for each process. Several programs available now or soon to be available are integrative—for example, "Seen," which teaches writing about literary characters; "Wordswork," which provides a process approach to a number of the writing assignments students are most often asked to do in college composition classes; and "Writer's Helper," which helps students locate ideas as well as grammar errors. Most programs like these are arranged in two sections: one addresses planning and invention; the other, text-analysis and polishing.

Those of us involved in the operation of writing centers that are fast becoming technologized composing centers might agree with an observation Edward Corbett makes in his foreword to Halpern and Liggett's *Computers and Composing: How the New Technologies are Changing Writing*. Corbett writes that the authors are "heralds of the new age" (xi). So, too, are writing centers and their staffs—teaching the new literacy with a process approach from an ideal situation.

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