
Writer's Workbench: An English Language Writing Program that Works

After seeing a demonstration of the AT&T program, Writer's Workbench, (WWB), writing faculty at Temple University saw the potential of having computer-assisted instruction (CAI) function as writing tool, that is, as a means by which students could obtain a wide range analysis of their writing. Following the example of Colorado State—which had implemented WWB in its writing curriculum—Temple University developed its own adaptation and implementation of WWB. This article discusses WWB at Temple in terms of planning, development, use, and results.

Many college students have difficulty in mastering basic writing skills. As a result, many post-secondary institutions find themselves overwhelmed by the need to establish both remedial and specialized undergraduate writing courses. Students need help not only with the usual technical problems in mastering grammar and sentence structure, but also with the more complex tasks of composing, revising, and refining their ideas into clearly written prose.

At a time when many institutions are unable to replace and expand fulltime faculties, many of these same institutions find themselves in the unfortunate position of having to provide faculty for remedial and basic level writing courses. Despite the growing need for remedial and specialized writing courses, faculty find it difficult to give students the individual help they need to learn how to make good decisions about improving writing skills.

With the advent of simple word processors—whose use has been popularized by the advent of the cheaper microcomputer—the writer now has the ability to insert, edit, and review his or her ideas. There are even spelling and punctuation checkers available to give feedback on minor errors. Few popular, off-the-shelf word processing programs, however, can provide writers with analysis of the more complex aspects of writing style and content.

Writing Courses at Temple University

Writing courses at Temple University are taught under the auspices of various programs associated with the English Department. The ELECT Program, for example, provides basic level "remedial" English for incoming students; the College Composition Program teaches required composition courses at the sophomore level. In addition, an increasing number of business and technical writing courses are being offered within the English Department as a service to the business and engineering schools.

Besides regular, fulltime English faculty, courses are taught by faculty from other departments and disciplines, part-time faculty, and graduate teaching assistants. Regular workshops provide the required training that is prerequisite for teaching in these programs. The overall pedagogical philosophy is to give students the opportunity to write, re-write, and write again as often as possible. These programs subscribe to the theory that good writers must write in

order to learn by doing, that is, learn by writing rather than by spending considerable time on memorizing rules and standards.

Resources available for support of the writing programs include a modern media center with audio, video, and computer resources—all of which back up classroom teaching and provide students with self-study resources. In addition to regular instructors, tutors are also available to assist students with their individual writing problems.

CAI Resources

Two computer drill-and-practice programs have been used with the writing curriculum for several years. GRAMMAR—developed at the University of Michigan—is designed specifically to teach engineering students rules of grammar and punctuation. Students first see correct usage demonstrated, and then correct sample sentences follow. DIALOG—developed at the University of Texas at Austin—gives students practice in the intricacies of sentence structure. Both GRAMMAR and DIALOG are largely didactic and do not offer help in creating original texts.

Introduction to Writer's Workbench

After seeing a demonstration of AT&T's WWB, writing faculty at Temple University saw the potential of having students obtain a wide-ranging analysis of their own writing. As the demonstration showed, the writer creates a body of text and then calls in the WWB programs to provide detailed and specific feedback on that text.

AT&T developed WWB for their own managers who had experienced problems in writing reports. WWB is a series of 25 different programs—some bundled, some separate—which allow the writer to get information on everything from spelling and punctuation to a choice of diction, word use, use of the passive voice, sentence variety and structure, and overall organization of the writing sample.

A few years ago, Colorado State University implemented WWB in their curriculum. Temple University decided to follow the same route but had to develop its own implementation since Colorado State's use was tied to their existing hardware and software.

WWB requires the use of a mini time-sharing computer and a UNIX operation system. For Temple, this meant that the old DEC 11/70 mini already at the Media Center required up-grading and conversion to the UNIX system. AT&T contributed substantially to this conversion project by providing software much below market cost.

WWB Developmental/Implemental Tasks

Because faculty wanted to use both the existing drill programs as well as the WWB programs, the developmental task was to take these three, very different programs and tie them into a system that was easily accessed and understood by a wide variety of students who would be using the system at existing terminals at Temple's Media Learning Center. Bringing such a system into being involved hardware changes, operating system changes, program changes to the existing software, and the development of new software and documentation.

A major task facing the integration of WWB into a workable system was to create a simpler and more integrated word processing and text formatting system for student use. The UNIX text editor "VI" is far too complex for students to use; it does not automatically format when printing as does the simplest micro word processor. Before any specific development could be undertaken, technical restructuring of the computer system had to occur in order to bring up both UNIX and WWB.

Most faculty involved in the development and implementation of WWB were relative computer novices; they had to be taught the use of a time-sharing computer as well as the more complex programs of the UNIX text editor (VI) and WWB. This phase had to be accomplished prior to the system's re-design.

Besides the initial classes to train all "members of the team," instructions and manuals had to be developed to teach team members and, ultimately, the students. Within the software system itself, new system programs with simple menus linking existing computer drill programs and the new WWB programs had to be designed, programmed, and tested.

Development Team

A sizeable WWB Development Team was organized to work on the project. An Associate College Dean undertook the task of Project Director. A self-taught computer user, the Dean had long worked to increase the use of the College's computer system. The Assistant ELECT Director served as the primary content expert; together with the Dean, he selected the initial faculty to work on the first semester experimental pilot run.

The initial, fulltime faculty selected were: two regular English faculty and two outside of the Department who were typical of other College faculty "borrowed" to teach writing courses; in addition, both "borrowed" faculty members were familiar with and used computers in their own disciplines. The Academic Administrator of the Dean's Office—a Master's graduate in English—offered to help with the technical writing and in teaching aspects of the AT&T software.

The Computer Systems Manager of the Media Learning Center staff was instrumental in programming all changes and implementing the AT&T software. The Director of the Media Learning Center served as instructional development liaison. All in all, the WWB Development Team was composed of nine individuals from a wide range of academic backgrounds.

Development Process

Development began in the summer of 1984 with the acquisition of the AT&T software. UNIX and WWB were placed on the DEC system in preparation for implementation. During fall, the ELECT representative, Dean's Office,

and the Media Learning Center (MLC) staff began examining the software, and some members participated in training seminars provided by AT&T. Additionally, the developmental team had decided that the system's pilot test would include four different types of writing classes.

The four courses (and faculty) selected included the following: an ELECT (remedial) course, an English Composition course, a Business English course, and a technical writing course. Seminars were developed and conducted to give the faculty teaching these courses instruction on use of the system, so that they could begin to use it in their personal writing before using it for student assignments.

Overall, faculty had considerable input about the modifications made to the WWB programs. The power of the computer permitted them to insist on different utilizations for the different writing course applications. For example, the technical writing standards against which student writing examples would be compared were different for the technical writing classes than for the ELECT and composition classes.

AT&T provided two different technical writing standards with WWB. In addition, the system allowed users to input their own essays and create standards more appropriate for the program being taught. The technical courses at Temple accepted the AT&T standards; the basic courses, however, used standards created specifically for the parameters of their courses.

By the summer of 1985, both the new Student Editing System (SEDSY) and sample runs of WWB (using sample student essays) had been tested successfully; a student manual had been written as well for both the operation of SEDSY and WWB. The system was ready and standing by for implementation into the four writing courses in the fall.

Implementation Problems

Definition of Goals. A continuing problem was the inadequate time set aside for the initial goal setting. There appeared to be little patience on the part of team members to articulate clearly

defined goals and objectives at the outset. Most team members failed to appreciate and understand the importance of this step in the overall process. This lack of understanding and concern for goal setting was due in part to the perception that goals for the program already existed, since AT&T had articulated and defined them when they developed the original WWB programs. Faculty had a difficult time accepting that this project required a re-statement of goals so that it would meet their own program needs.

For example, team members were uncertain about specific affective goals they might wish to achieve. When the decision needed to be made about the language to be used in the Student Manual and the screen menus, faculty were faced with a definite choice: Should the language be natural English or standard computer terminology? Originally, the faculty chose simple English. They realized later, however, that giving students the opportunity to learn a little about computer technology would not only be motivating for them but also help prepare them to be both computer and language "literate."

Working with four different faculty members who needed four different course applications was difficult; it was extremely difficult to determine any kind of uniform, specific goals and objectives for the program. Again, it forced the programmers and planners to adapt the software to be more flexible in order to permit its use in different ways. While flexibility is an excellent characteristic of any instructional program, it is difficult to develop flexibility unless the parameters are strictly defined.

Discovery Approach. The operational philosophy that seemed to work best in this project was a "discovery" approach: faculty would learn uses and develop applications relevant to their own courses and assignments. This approach was necessary in order to maintain a measure of academic independence as well as to alleviate faculty fear of losing authority to technical staff personnel.

Furthermore, given the complexity of the powerful AT&T software and the difficulty of

understanding what it could do, initial experimentation was appropriate. Without first-hand experience, faculty have found it impossible to predict how best to use the existing materials much less suggest revisions of the existing materials. How various components of the WWB programs could be used in specific courses was essential and something only faculty, not developers, could determine. Thus, while often frustrating for developers—who tended to want clear answers to implementation issues—many such answers could only be given by faculty after experimentation.

Team Roles. Another problem area for this project revolved around the roles and activities of each team participant. At times, the project team suffered from role-reversal: faculty wanted to make programming decisions, and programmers wanted to make curriculum and pedagogical decisions. For some time, it was unclear whether the Academic Administrator or the ELECT coordinator should lead the project. Time was lost until the Associate Dean assumed the supervisor role in a more tightly controlled manner. Ultimately, all team members were convinced of the usefulness of this project and wanted it to succeed.

Without clear role differentiation, a project such as this gets bogged down easily; however, without regular input from all team members and strong leadership to synthesize discussion, poll consensus, and assign new tasks to keep the development on target, a project such as this would probably never succeed.

Reward Structure. Without adequate rewards for faculty to volunteer for participation in this time-consuming activity, there would not have been a project in the first place. The rewards for participation were as follows: first, faculty were given release time for one course during the early planning and training phases. Secondly, each participating faculty member was given a computer terminal and modem so that each could use the time-sharing system from his or her home on projects other than WWB.

None of the problems that developed in the course of the WWB developmental project was insurmountable; regular team meetings resolved all of them. All planned tasks were accomplished on schedule, and refinements and new developments continued throughout the pilot-run semester. Although regular team meetings were often heated, they were both healthy and necessary in resolving the pedagogical and technical issues that were a part of this project.

Evaluation of First Semester Pilot Project

During the first semester pilot run with the new system, students were asked to respond to a survey concerning the perceived worth of various aspects of the system. In addition, both the business and the technical writing courses wrote overall critiques of the WWB project as part of their course assignments.

The Student Attitude Survey was originally designed for the standard five responses on a range from 1 for strongly disagree to 5 for strongly agree. Faculty, fearing that the middle 3 response would be over-used by students and result in no strong feelings for or against, suggested a four response option format which would force students to either agree or disagree with all statements.

The majority of the students were positive about the use of the system; major problem areas were related to access of the computer and the laboratory. There were some who were very positive about using word processing on the computer but less supportive for the use of WWB for feedback on their writing. Lack of support for WWB was due primarily to the fact that students had difficulty understanding the WWB feedback; hence, felt the feedback was not useful. Yet, most student users of the WWB system agreed that overall it was useful.

The strongest support and most favorable responses related to the ease of learning both SEDSY (86%) and WWB (81%), and the simplicity of typing in assignments (80%). Most enjoyed learning how to use the computer as

well (86%). Overall, most students using SEDSY (79%) and WWB (67%) would not only enroll in another course using these programs but would also encourage their friends to enroll.

With regard to help received learning the system, students found the computer staff the most helpful (74%); their instructors were also extremely helpful in this regard (71%). Apparently, few students knew that tutors could assist them in learning the system, or else they simply found the tutors unwilling to do so (45% were negative and 20% did not respond to this item). On the basis of the Student Attitude Survey, a substantial percentage of students (48%) found it difficult to compose at the terminal; only 30% indicated that the use of SEDSY resulted in longer essays. Neither of these objectives, however, was a goal of the system, that is, it was not designed to improve the ability to compose at the terminal nor increase the length of essays. What was a definite goal of the writing instructors, namely, more review, editing, and revision was accomplished: 71% of students surveyed indicated that the use of SEDSY resulted in more changes in their writing. What is more, 73% indicated that they thought the use of the writing programs improved the effectiveness of their writing.

In looking at attitudes about the effect of WWB, the majority of students reported that it helped improve their writing style (73%), their diction (67%), and their spelling and writing mechanics (97%). Despite this positive reaction, as many as 41% also reported that the WWB analyses were not clear and understandable.

As for changing how they thought and felt about writing per se, students were unsure of whether or not SEDSY and WWB changed the way they viewed writing; about an equal number agreed and disagreed.

One area of particular interest emerged in response to the issue of whether or not instructors made use of the WWB analyses in class or student conferences. Forty-seven per cent indicated that no use was made of the analyses in class; another 20% did not respond to the use of the analyses in conferences, indicating, perhaps,

that conference discussions were not used in some courses.

Assigned Written Critiques

As mentioned earlier, two classes were also assigned writing topics requesting their opinions of the success of the WWB project. The Writing for Business and Industry Class (English 104) was asked to complete a memo evaluating the project; the Technical Writing Class (English 102) was asked to write a detailed report to the Associate Dean about the advantages and disadvantages of the computer-assisted WWB writing system.

The writing critiques for the Writing for Business and Industry Class yielded the following data:

(1) Of the 22 in the class, 20 were positive, 1 negative, and 1 noncommittal. Advantages enumerated included the helpful WWB analyses (9), saving time (4), proofing and editing ease (4), and neat/clear report printing (3). Disadvantages cited by students included comments about typing skills—while not obligatory, certainly made work easier (13), unreasonable wait time for print outs (4), not enough access to computers (2), and the system was too costly (1).

Recommendations for the improvement of the system were as follows: include more word processing options so that pages could be seen, underlining was possible, footnoting, etc. (5); provide a manual on how to interpret WWB analysis output (1); and provide more human orientation (1).

The Technical Writing Class wrote much more extensive critiques; all found the project worthwhile. Most critiques cited the benefits of both the word processing and the analyses, and many provided positive and constructive suggestions for improvement.

Although most students in the class did not have problems with the Student Manual, many did recommend that it be made easier to read. A constant comment which ran true through most of the critiques was that terminals were not al-

ways available during “peak” hours, and that the Media Learning Center hours of operation were too few. Many complained about the long wait for print outs which could take as long as four hours.

Implications of Student Evaluation Feedback

Both survey and written critiques imply that most students were positively motivated by the WWB project; many requested that they be given access to the system in the future for use with other course projects. The majority of negative comments could be traced to the limitations of the system and the hours during which it was available for use. Some students resented being forced to use the system at hours inconvenient for them. Although students were informed that the section in which they had enrolled was an experimental one requiring extensive use of the computer, more care will be taken in subsequent semesters to make it clear to students that they may transfer out of the section if they wish. Efforts are being made to extend Media Learning Center hours to permit evening and weekend use.

An implication troublesome to developers and corroborated by student opinion is that the WWB analyses are not integrated into course design. Some students indicated that instructors spent little, if any, time on the analyses themselves or how they could be used to help improve an individual student’s writing assignments.

Faculty also felt that this lack of integration of the analyses was a weak point in the project. Some faculty members reported varying degrees of success with implementing application of WWB analyses into their courses. The one faculty member who structured various course tasks using the analyses, who insisted that all analyses be turned in together with changes made in essays, had better results getting students to use and understand the WWB analyses. Even so, students complained to the computer staff that they had difficulty interpreting the WWB output.

The evaluations of both students and faculty have been extremely useful in improving the WWB writing system. Wherever possible, improvements have been incorporated. For example, the Student Manual has been revised. Faculty has developed a Faculty Guide for the implementation of the system for future classes. Based on logical organization of aspects of the system and suggestions for use of the complex WWB analyses, faculty have the opportunity to incorporate the results of the analyses for the overall improvement of their students' writing needs.

Future Plans

The College of Arts and Sciences at Temple University continues to support and endorse a variety of writing courses for students. The computer has already demonstrated its usefulness as an excellent writing resource. As funds become available, the College will expand the level of computer support to students across the curriculum as opposed to the handful of courses now being served.

In terms of both faculty and student attitudes, the WWB Project has been an unqualified success. The word processing and writer's analyses programs are running successfully, and student documentation has been improved.

The major problem that remains is providing students with additional access to the system. To give the more than 7000 potential users of the system access to it will require additional funding and equipment.

Because the ten year old DEC time-sharing system cannot handle more users, a replacement system is being planned for the Media Learning Center. The new system will employ a PC based micro network with hard disk to serve a group of micros with the WWB programs. A micro system has the flexibility of allowing for multiple uses of the laboratory micros and would provide compatibility with other systems: students could work on text on other PC's, even at home, before running text through the WWB programs at the Media Learning Center. Currently, the College is drawing up plans to work with AT&T on a partnership agreement for the development of programs on a UNIX based micro system.

The University shares the College's concern for providing innovative computer support for the improvement of undergraduate writing skills and will, hopefully, lend its support to the concept of innovative computer-assisted instruction. Over the next five years, as many as five or six distributed micro laboratories are being considered for different locations around Temple's several Philadelphia campuses. At Temple University, the future looks promising for WWB and computer-assisted instruction across the writing curriculum.

J.E.T.T. Contributor Profile

Robin A. Lawrason is an instructional designer, teacher, and Director of The Media Learning Center at Temple University. Interested readers may write to him at the following address: Media Learning Center, Temple University, Philadelphia, PA 19122.