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AN OVERVIEW AND EVALUATION: COMPUTER SOFTWARE TO AID STUDENTS IN PREWRITING, WRITING, AND REVISION

Mary Lou Shomaker

Executive Summary

The research on computer software to aid inexperienced writers was done from May, 1990 through August, 1990, and involved examining software that would help students improve their writing. The softwares also were evaluated according to their value for use in computer assisted writing classes. The project had three objectives: 1) to evaluate software designed to aid the writer in the pre-writing, writing, and revising stages; 2) to identify the components of this type of software; 3) to recommend software for the beginning academic writer.

The following recommendations are made to

UMR English Department:

1. Since there is evidence that writers' habits are changing, the "nature of text itself is changing," and "the character of writing instruction is changing," (Schwartz, *et al* 141-204) the UMR English Department should consider integrating computer assisted writing instruction in freshman English classes.

2. A pilot course should be developed and implemented as soon as possible.

3. Methods should be developed to evaluate writing classes that use computers to teach writing so their effectiveness can be judged in regard to quality of writing and retention of students.

4. A committee consisting primarily of English faculty, but not limited to the English faculty, should be established to make plans and set goals beyond the pilot program. This committee also should seek financial support within and outside the University to develop the computer writing program. The committee should also consider seeking funds for:

   a. faculty training and development to integrate the use of computers in their writing classes (for example, funds to attend training workshops and release time or pay for faculty developing computer assisted writing classes).

   b. a computer laboratory coordinator who will research and develop an effective writing laboratory on the UMR campus and who will help train faculty, staff, and students in its use once the laboratory is established.

5. The English Department should consider developing a mandatory introduction class to accompany computer assisted writing courses. The class could carry one hour of credit and would introduce students to the software used in writing classes and the English writing laboratory.

6. Research should be continued to to update information on the software already researched and to identify other software for writers, particularly a search for and purchase of a grammar handbook software package to be installed in the writing laboratory so students can easily look up points of grammar, punctuation, format, etc., while writing on the computer.

7. Research should be conducted by persons in the English Department along with academic computing staff and administrators to establish local area networks or other networks in the writing laboratory as deemed desirable and necessary.

8. A combination of software packages should be available for student use outside the classroom, such as Writer's Helper, WordBench, and Grammatik IV, to maximize the possibilities of teaching writing with computers.

9. The English Department should purchase the WordBench and Grammatik IV software packages for use in their computer laboratory.

10. The English Department should encourage the use of the software across the curriculum.

University of Missouri-Rolla

1. The University should work to achieve equity of access to computers for both faculty and students. For example, computer laboratories should be established on all dormitory floors and elsewhere as needed.

2. A committee should be established to research the possibility of expanding and upgrading the computer library to include indexing of all books, articles, and reviews dealing with computer software for education and business.

3. A committee should be formed to study the possibility of establishing a computer software library on campus where software can be reviewed or used on location similar to the concept of the reference book section of the current library.

An Overview and Evaluation: Computer Software to Aid Students in Prewriting, Writing, and Revision

The purpose of this research was to analyze and evaluate software designed for the writer and make recommendations concerning their use in or out of the classroom. I examined and evaluated five software packages, and briefly looked at three other packages for comparison purposes. The five packages analyzed were Norton Textra Writer, WordBench, Writer's Helper, PCSTYLE, and Grammatik IV. All five are menu driven and most are easy to learn. However, to use WordBench, Norton Textra Writer, Writer's Helper, and Grammatik IV effectively, a considerable amount of time should be spent becoming familiar with their various features.

I used each feature of the five software packages and judged each package according to how helpful it is to the writer, particularly the inexperienced student writer, in the prewriting, writing, and revision stages.

For the prewriting stage, I looked for components that would aid in the conception of ideas; problem solving and decision making about a topic. For the writing stage, I looked for aids in outlining; taking notes; sentence and paragraph development; and documentation. For the revising stage, I looked for components that provide help with grammar, punctuation, style, and inserting, rearranging, and deleting text.

Prewriting and Writing Tools

All of us have experienced the terror of a blank sheet of paper at one time or another and wondered how we would fill that space with meaningful dialogue. We hope that a classical

muse will appear like a genie in our brain and solve the problem. But a muse does not appear, at least not in the sense imagined.

Although "little is understood" about creativity and it is "almost impossible to teach," Valarie M. Arms, a humanities teacher at Drexel University, suggests that "creativity can be encouraged" by using computers (33-46). To date there is little conclusive research available regarding teaching writing with computers, but those who are using the computer in the college classroom feel optimistic that the computer can be used to teach writing to students in "new and better ways" (Wresch, "Questions, Answers, and Automated Writing" 1-12). Many agree that even though most "software packages for teaching writing are limited," these packages can help students learn to write better with instructor intervention (Barrett, Paradis "Teaching Writing ..." 154-171). Computer software will only point out problems and give assistance through a matching system decided on by programers (Stratton 119-134); therefore, instructor intervention is necessary to maximize the effectiveness of computer software in the classroom.

Three of the software packages I analyzed, Norton Textra Writer, WordBench, and Writer's Helper, have features that help students get past the blank page with freewriting and thought provoking activities. Norton Textra Writer and WordBench have prewriting activities and word processing capabilities that allow students to produce their texts (essays, research papers, reports, etc.) and use any prewriting activity without leaving the program. Writer's Helper does not have this capability. Writer's Helper is designed primarily to help students with prewriting, developing topics, and analyzing the finished writing project; it does not have complete word processing capabilities.

Prewriting

I. **Norton Textra Writer.** Textra Writer has a handbook built into the program that provides on-screen suggestions for prewriting strategies. Accessed from the menu under Essays, the Textra Writer Handbook briefly describes brainstorming and tells the student writer how to order the ideas gained from a brainstorming exercise. Students also are encouraged to try free writing, invisible writing, and comparison tactics to get them started writing. For instance, the Handbook suggests that the display function of the computer be modified until the letters can no longer be seen on screen, then the students are to type uninterrupted for a chosen amount of time about anything that comes to mind. At the end of this session, the display lights are turned back up, and they read what they have written. These exercises are available in Textra Writer if the students or the instructors wish to use them, but they are not extensive nor a major part of the program.

II. **WordBench.** Similar to Textra Writer, WordBench has prewriting activities that are a small part of the total program; however, the WordBench activities are more structured. The four prewriting activities under WordBench's Brainstorming menu are: A. Freewriting, B. Invisible writing, C. Nutshelling, and D. Goal Setting. These brainstorming tools allow students to focus on ideas rather than the mechanics involved in working on the computer.

   A. Freewriting allows students to select a time limit and write without being able to make corrections to the text. The screen will keep scrolling during this activity and students can not go back to edit what has been typed. The inability to edit is supposed to free students from worrying about the text and allow them to concentrate on the ideas they wish to express. However, curbing the tendency to edit is difficult to do. In testing this exercise, I reacted immediately to correct the error once I realized I had made it. Yet Freewriting could be useful for students who become accustomed to using it or for those who are not as programmed as I am to correct errors immediately.

B. **Invisible writing** lets students set down ideas without the distraction of seeing the words they type. The lack of visibility should help students concentrate on ideas and not the mechanics of typing. As with **Freewriting**, students cannot edit the typed line in this mode.

C. **Nutshelling** provides a window limited to eight lines where students can type ideas or a thesis. This activity compels students to condense their ideas and focus on the main points.

D. The **Goal Setting** feature has a window that asks students to name the subject of their writing, the point of view, the audience, and the purpose of the writing. Reminding students to consider these elements may help them produce better texts.

III. **Writer's Helper**. William Wresch, an English teacher from the University of Wisconsin Center, designed <u>Writer's Helper</u> to encourage students to prewrite. Mr. Wresch feels that most students do not use "prewriting activities outside of class, and even English teachers tend to go comatose when the subject comes up" (143-153). Doing a lot of prewriting, Mr. Wresch believes, prevents students from producing "correctly spelled drivel" (1984). The prewriting activities that <u>Writer's Helper</u> offers are found under **Find and Organize a Subject** on the menu. Students can choose **Find a Subject, Explore a Subject, and Organize Information** from the menu. Each menu choice has two or more activities to help students find a topic and explore its possibilities.

A. **Find a Subject. Brainstorming, Lists, and The Questioner** are designed to help students choose a topic for their writing project.

1. **Brainstorming.** This activity allows students to type three to ten lines of uninterrupted copy that they cannot edit. **Brainstorming** takes about two to ten minutes to do; and at the end of this activity students are asked to review what they have typed and consider what idea surprised them the most and what idea interested them the most. <u>Writer's Helper</u> further suggests that the ideas gained from brainstorming may be possible topics for a writing project.

2. **Lists.** In this activity students may enter ten to fifty items to a list. The program makes no suggestions as to the form or content of the list; these decisions are left to the writers. For instance, a list might consist of sentences, items, or groups of words.

3. **The Questioner.** The final activity in this series poses twenty questions for students to answer and is designed to prompt the students to think further about a topic and possibly narrow down the field. Examples of questions asked are: 1) "Who is the strangest person you know?," 2) "How much money does it take to live a good life?," and 3) "Why must we develop space travel? (WH)." Both questions and answers may be printed out so that students can explore the possibilities for a topic at a later time.

B. **Explore a Subject.** Once a topic has been chosen, students can begin to explore their topics' possibilities. **Explore a Subject** provides three ways to explore a topic: a. **Crazy Contrasts,** b. **Teacher's Questions,** c. **Three Ways of Seeing.**

1. **Crazy Contrasts.** This activity helps students think about a familiar topic in a different way and may encourage students to "redefine, limit or select

another topic" (WH). For example, students may be asked to compare their own topics with a potted plant and type three ways it is like the plant and three ways it is not like it.

2. **Teacher's Questions.** This segment of the program gives instructors the opportunity to prepare their own questions for students to consider about a subject, writing project, or reading assignment. A total of twenty questions may be prepared for the students to answer.

3. **Three Ways of Seeing.** In this activity students are asked to view their topics in "isolation, as a process of change, and as one item within a network of related items" (WH). Students then have one line to answer each question concerning their topics. The questions deal with how a topic can be described, how it has changed, its value in a larger network, and its relationship to that network.

C. **Organize Information.** Two activities under this menu, **Debating an Issue** and **Comparing and Contrasting,** help students explore their topics in more depth.

1. **Debating an Issue.** This activity assists students to see more than one side of a topic by asking them to list several items in support of and opposition to their own opinions concerning their topics. Considering a topic from different points of view can help students prepare better support for their ideas.

2. **Comparing and Contrasting.** Similar to **Debating an Issue,** this activity asks that students compare their topic with another topic that is similar and may be more familiar to their audience. Up to fifteen similarities and differences can be listed. Then students are asked to choose the three most important similarities or differences between the topics. Instructor intervention in this activity would be valuable since an instructor could ask students to compare characters, themes, relationships, and social issues in a reading assignment or for a writing project.

Writing

I. **Norton Textra Writer.** Along with word processing capabilities, Textra Writer has a handbook and a Split screen function that are helpful to student writers.

A. **Split screen.** This function allows students to open windows to view different parts of their texts at the same time or create and retrieve documents. With this function students can add notes to their documents or view quotations for accuracy during the composing or editing process. Up to eight windows may be placed on the computer screen at one time.

B. **Handbook.** Basically a grammar handbook, Textra Writer's Handbook provides help on sentences, grammar, usage, punctuation, and documentation. The Handbook is available anywhere and anytime students may need it while writing. Should students have a question about punctuation, usage, or grammar, they can refer to this built-in handbook for answers without leaving the file.

1. **Sentences.** Seventeen topic areas are available where students can find suggestions on revision, concreteness, and level of usage. For instance, under **Excessive coordination and Excessive subordination,** the Handbook gives examples of each and suggests how these sentences may be revised.

2. **Grammar.** The opening menu of **Grammar** includes subject areas such as pronoun agreement, case, and reference; subject/verb agreement; verb tenses; fragments; and adjectives and adverbs. General rules are available along with more specific information about correct grammar usage.

3. **Usage.** The usage glossary contains words that are commonly confused and misused, such as "accept/except." There are 125 entries listed in alphabetical order. Students will receive an explanation on screen of the correct usage of any word group selected.

4. **Punctuation.** Textra Writer's **Handbook** provides brief rules and/or examples for using ellipses, commas, the apostrophe, and quotation marks.

5. **Documentation.** The information on documentation is excellent. There are general rules about documentation and information about preparing citations in the MLA and APA styles. Each style has submenus that help students find examples for a citation within their text and the format to use in the bibliography.

II. **WordBench.** Like Textra Writer, WordBench is capable of doing most basic word processing functions; such as entering, moving, deleting, inserting, and copying text, as well as word searches and replacements. The WordBench program also provides bibliographical assistance to students. However, unlike Textra Writer, which has examples of the MLA and APA styles of documentation, WordBench's Reference Assistant is based only on the MLA Style Guide.

But the main feature of WordBench is the way it encourages and helps students organize their writing projects. The filing system is one of its best features. Under Folder Manager on the menu, students may create several files pertaining to their writing project that will be placed in the same "folder." It is like having a filing cabinet on disk. Each time notes, references, outlines, or texts are added to the folder, Wordbench stores them under the appropriate sub file. All the material needed for the writing project, including the main text, can be accessed within the folder which allows students to check data without having to exit the main document file and call up another file.

The tools available to aid students in organizing and writing include: A) Notetaker, B) Outliner, C) Viewer, and D) Merge.

A. **Notetaker.** Students can compose and store notes in **Notetaker** and use them later in their writing projects. It is also possible to mark notes for editing, browse through all the notes entered, sort the notes according to subject title, and assign notes to levels of the outline. While working on the main text, notes can be called up in a window and viewed for reference.

B. **Outliner.** The **Outliner** helps students develop and revise outlines up to four levels deep. The outline can be collapsed to check for logical development in the writing project. Collapsing the outline hides subheadings from view so only the most important points are seen and considered. Although creating an outline is easy since WordBench does not allow incorrect development, editing the outline is difficult and this is due to the same mechanisms that prevent incorrect development. In order to make major changes in the outline, entire lines and headings must be deleted before new headings may be inserted.

C.   **Viewer.** One of the most useful tools in the program is the **Viewer.** The **Viewer** is a window that can be placed at the bottom of the screen; information can be loaded into it so that students can reference both the main text and, for example, a note at the same time. While working on the main text students can load the viewer with anything contained in the folder or the **Library Folder.** The **Library Folder** contains lists of gender-related words and commonly misused words, and gives suggestions for the correct usage or suggests alternatives.

D.   **Merge. Merge** makes it possible to combine other documents — the outline, notes, or both the outline and notes -- with the main document. If notes are assigned to specific levels of the outline they can be merged to produce the first draft of a paper. This is very exciting since it allows students to collect data and ideas, tie these to the outline, then merge the two and print out what may be a very rough draft of the writing project. This allows students the chance to consider their divisions in the project and the strengths or weaknesses of presenting the material as outlined.

III.   **Writer's Helper.** Writer's Helper has almost no word processing capabilities. The update, Writer's Helper Stage II. has a **Notepad** feature that allows students to enter about one large paragraph, but other than this the only word processing available involves the activities.

However, three activities offer help in organization and development of a writing project. **Trees, Develop a Single Paragraph,** and **Five-Paragraph Theme** lead students through a series of steps that should increase their understanding of organizing and developing their topics.

A.   **Trees.** In this activity students must type eight to fifteen items related to their topic, then they are to categorize these items according to their relationship to the writing topic. When this is accomplished, the program creates a "tree" or what one might consider a rough outline of the relationship between the items and the topic.

B.   **Develop a Single Paragraph.** Writer's Helper gives examples of two types of paragraphs--the descriptive and the argumentative--along with explanations and examples of each. For example, students are asked to make an assertion of their own and then write four sentences to support their assertion. After doing this, the program tells students to order their sentences. The activity ends by displaying the sentences in the requested order and reminds students that transitional words can link the sentences together into a readable paragraph.

C.   **Five-Paragraph Theme.** The **Five-Paragraph Theme** leads students through several steps that lead to the completion of a short theme that has an introduction, middle, and conclusion. The program does this by asking a group of questions about a topic. This activity makes students aware that writing about something requires purpose, audience, and information (WP).

Revising Tools

Roy Blount, Jr., author of nine books and a contributing editor to The Atlantic Monthly. said when he was 12, he "would wake up in a cold sweat. Because of the rumors." He relates that "'In high school,' it was whispered, 'you have to do everything in pen and ink. And you can't cross out.' Which meant I was dead. If I couldn't erase or cross out, I would have to turn in papers whose every other word was wrong. And if by some chance I mastered high school conditions well enough to get into college, what would be demanded of me there? Typing,

probably. Thousands of words a minute ... right off letter-perfect" (107). Blount's fears were exaggerated, but he did have to type on a typewriter and erase errors until there were holes in the paper. Computers eliminate these horrors of the past, including the fear that the instructor will ask for revisions or multiple drafts.

Students often resist turning in multiple drafts of their work; and instructors, particularly in the past, have been reluctant to require several drafts of a text due to the work involved in retyping (Gordon and Mansfield 9-13). Ellen W. Nold of Stanford University believes that writing instructors should "move from judging finished drafts" to promoting "the writing and revising of various drafts of the same paper — particularly with students who have not mastered" the many tasks involved in writing (13-23). Word processing programs make the production of several drafts less painful since students can easily delete, move, or insert text. Most word processing programs allow the user to insert, copy, delete, and move text, and both Textra Writer and WordBench have these capabilities.

However, revision involves more than just moving text or deleting it. Students also need to check punctuation, grammar, and style. WordBench has several features that analyze a text for word usage. Writer's Helper will check texts not only for word usage but also for paragraph and sentence length, and readability. There are also software packages available that only analyze style and are limited in scope, such as PCSTYLE, or are extensive in scope, such as Grammatik IV. Software packages that analyze grammar and style are not cure-alls and should be used with "appropriate guidance and caution" (Day 63-78). Students need to know how the software analyzes text and what the limitations of the software are. (See Charles R. Stratton's article "Anatomy of a Style Analyzer" for information about the mechanisms these software packages use to "read" a text.) Using these analyzers "will not guarantee the quality of a paper," but they will help "reinforce notions of good writing" (Day). In one study of a style analyzer, students reported that the program helped them remember a "variety of points about grammar and style" (Day).

Revision

I. **WordBench**. In WordBench under Library Folder, there are several lists of words or expressions that can be checked against student texts. These lists include checks for cliches, gender, misused words, and wordy expressions. Lists also can be created by the instructors or students to check problem usage, and this flexibility is the best feature of the **Library Folder**. But the lists included in the package are disappointing as far as length and usability. For example, the **Misused Words** list contains only thirty words. Furthermore, WordBench will not flag a word as misused if it does not match the form of the word in the list. For instance, the word "elude" appears in the Misused Words list and if students use "eluded" incorrectly, the program will not flag it as incorrect.

    Wordbench does not offer any suggestions for correction or alternatives when it checks for cliches and wordy expressions. There are explanations and suggestions for misused words and gender-related words, but they are not automatically shown on screen. Students would have to go through a series of commands to load the responses in the **Viewer** in order to obtain any advice.

II. **Writer's Helper**. Writer's Helper is capable of analyzing a document up to about 3,000 words in length by outlining the document; computing the length of sentences and paragraphs; listing the document by sentences, computing its readability and giving a word frequency count; checking for homonyms, gender-related language, "to be" verbs, and usage errors. Of these, **List Document by Sentences** and **Compute Readability** are not especially helpful to inexperienced writers without instructor intervention. The checks for homonyms, usage errors, gender-related language, and "to be" verbs are based on

limited lists of words with suggestions and/or explanations for alternatives. There is some flexibility since instructors can modify any of the check lists and can create their own word lists.

A. **List Document by Sentences.** This function is supposed to help students identify problems in individual sentences by isolating the sentence from the rest of the text (WP). However, without instructor direction, those who really need help in sentence structure will not find a listing of sentences very helpful since there are no concrete aids such as subject-verb agreement, etc.

B. **Compute Readability.** This analysis is based on the Fog Index readability formula and its value is minimal. However, it could make students aware that their audience may have different reading levels.

C. **Outline.** The Outline lists the first sentence of every paragraph which allows students to check transitions from one paragraph to another to see if their ideas are developing logically.

D. **Count of Words in Paragraphs.** All the paragraphs of a text are graphed with an asterisk and each asterisk represents five words. The graph visually points out any large discrepancies in paragraph length which may indicate underdevelopment of an idea or paragraphs that should be divided into two or more paragraphs. Sentences are graphed similarly with each asterisk representing one word.

E. **Word Frequency Count.** Computing the total number of times a word is used in a text, the **Word Frequency** Count function prints out each word used in the text in alphabetical order. The number of times the word was used and the total number of different words used also appears on the print-out. Knowing how many times a word is used in a text could be very helpful to students who have a tendency to overuse certain words. For example, if "however" appears an inordinate number of times, a student may want to go back and substitute another transitional word or the student may need to check for paragraph and sentence continuity.

F. **Teacher's Words.** With **Teacher's** Words instructors may create their own word check lists and messages concerning correct word usage. Instructors may want to use this to address common usage errors or spelling problems in particular classes or grade levels.

III. **PCSTYLE.** PCSTYLE is a software package that is designed to analyze text only. It analyzes sentence length, total number of sentences, total number of words, and syllables per word. The program also gives a readability level for the document and a percentage count of the long words, personal words, and action verbs used. It does not check punctuation, grammar, or unique words, nor does it offer suggestions or alternatives for improving a text. PCSTYLE emphasizes three major areas: readability, personal tone, and action words. Although PCSTYLE is limited in scope, it does have merit. The emphasis on sentence length and word length, and average syllables per word could be used by freshman English students to help them reduce wordiness and overuse of long words.

A. **Readability.** The program checks the average number of syllables per word, the average sentence length, and the percentage of long words in a text. The manual does not credit a reading index as the basis for the readability analysis. However, it does suggest you consult Rudolf Flesch's books (The Art of Readable Writing and How to Write Plain English) to learn more about readability. The best readability

scores go to texts with a low percentage of long words and with a small number of syllables per word.

B. **Personal Tone.** PCSTYLE emphasizes using personal pronouns in writing whether the text is a report, book, speech, technical text, or a manuscript. If students use few personal pronouns in their texts, they will receive a low **Personal Tone** score.

C. **Action Verbs.** There are forty action verbs in PCSTYLE'S dictionary and 260 words can be added to this list. Each time a word from the dictionary is found in a text the **Action** score of the text improves.

IV. **Grammatik IV**. A grammar analyst and style checker, Grammatik IV generates statistics, summarizes the data, flags errors in texts, and allows users to select how they wish to check a document. In addition, it permits users to create their own rule dictionaries and has a **Help System** that provides definitions of rule classes, defines the rules, and explains correct usage.

Grammatik IV checks grammar and usage, analyzes sentences and readability, checks spelling, and allows users to edit each problem before going on to the next one. As an aid to writing Grammatik IV can be useful as long as students keep in mind that it is not infallible. Like most text analyzers it "will miss some problems and will occasionally flag acceptable usages" (Paul, 1989). For example, it may not recognize nouns that also can be used as verbs. In addition, the program flags gender-related pronouns and suggests that writers change to non-gender alternatives whether it is appropriate or not.

The following is a brief description of the types of grammar and usage problems that Grammatik IV looks for in a text, the kinds of statistics it generates, and the different ways students can check their texts.

A. **Grammar and Usage.** Under the **Preference** menu there are standard rules and user defined rules that students can turn on or off when checking a text. There are forty-two categories of rules listed under the **Standard Rules** option, including several punctuation, pronoun, adverb, preposition, and possessive rules. Students also can check for split infinitives, verb agreement, homonyms, incomplete sentences, passive voice, cliches, and long-winded or wordy expressions. Since there are several types of writing and the strictness of rules applied to the different types of writing varies, there are four rule dictionaries that can be used when checking a text. Instructors also can create four of their own rule dictionaries.

B. **Statistics.** Among the statistics that Grammatik IV compiles are three readability levels: Flesch Reading Ease, Flesch-Kincaid Grade Level, and Gunnig's Fog Index. At the end of a checking session, the readability evaluations appear on screen along with information about passive voice usage, average sentence length, average word length, and average paragraph length. For graphed statistics, students can open the **Statistics** menu at the end of a checking session and choose **Comparison charts**. **Comparison charts** compares the text's readability with three other standard texts: the Gettysburg Address, a Hemingway short story, and a life insurance policy. Grammatik IV produces graphs that compare student text with each of the standard texts according to reading ease, grade level, average sentences per paragraph, average words per sentence, average letters per word, and the percentage of prepositions. If instructors do not want students to compare their texts to these built-in, standard texts, they can create their own comparison texts under a custom preferences file.

Word usage statistics are available at the end of a checking session also. The Word usage profile orders all the words in the text according to the number of times they were used. Students can choose to have the words listed in order so that the most frequent usage appears first or the least frequent usage appears first. Listings by alphabet and frequency are also available.

C. **Ways to Check a Text.** There are five ways to check the document: Begin full interactive check; Mark only; Mark only, add advice; Statistics only; and Read only.

1. **Begin full interactive check.** This check reads the text, gives advice, and allows students to edit each problem that is flagged immediately. However, students also can skip the flagged "problem" if they see nothing wrong with their usage; replace a word or words with Grammatik IV's suggested alternative; mark the problem and check it later on a print out; or tell the program to ignore the problem when it comes across it in the text again.

2. **Mark only.** This option puts a # sign in front of the problems it detects without giving students any advice and saves the mark in the file so errors can be checked later.

3. **Mark only, add advice.** Unfortunately, Mark only, add advice is cumbersome. For each problem detected, Grammatik IV identifies the problem word, words, or punctuation; then specifies the rule class, and gives advice. The word or words flagged are printed out long with the rule class and advice, if any, and can be compared to the text at a later time. However, to check it later, requires that students print out their marked text and compare it with the printed advice or compare the printed advice with the marked text on screen. Finding the problem in the text and comparing the advice with it requires a constant back and forth referencing that is time consuming and often confusing.

4. **Statistics only.** This option does exactly what it says — generates about a page of numbers and percentages concerning usage and style including readability scores and paragraph, sentence, and word statistics.

5. **Read only.** The Read only option places the text on the screen and flags problems in the text. Students may choose to ignore the problem, note the problem, or go on to the next problem. Editing is not possible in Read only. However, if students have asked Grammatik IV to print the errors on the printer (this must be done under Options before starting a check), all flagged problems will be printed out along with a statistical summary.

Summary

All five software packages, PCSTYLE, Grammatik IV, Norton Textra Writer, WordBench, and Writer's Helper, have features that make them valuable to student writers and could be used in the college classroom or writing laboratory. The packages are menu driven and most are easy to learn and use. Each package has strengths and weaknesses and emphasizes different aspects of the writing process. For example, Writer's Helper is more process oriented, whereas WordBench is more product oriented. Norton Textra Writer combines word processing and a grammar handbook and seems to be more useful for individual use outside the classroom. Grammatik IV and PCSTYLE check a completed writing project for style and/or grammar.

No single package seems adequate for addressing all the aspects of writing. Therefore, using a combination of three or more packages would be more beneficial to students. WordBench can be used from the beginning of the writing process to the finished product. Although WordBench's brainstorming features are weak, it does provide flexibility and organization for writing projects and could be used across the curriculum. For help in the prewriting stages and style, Writer's Helper is a good choice. However, for revision Grammatik IV is the one to use.

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