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Project Jefferson:
A Hypertext Application for Teaching Students Research Skills

Irene Lurkis Clark

In his useful survey of text-oriented database management software (RWPN, February ’88), Bryan Pfaffengerber focuses on how the personal computer can implement the concept of MEMEX first suggested in 1945 by Vannevar Bush for data storage, organization, and retrieval. Pfaffengerber notes that “although MEMEX doesn’t yet exist in the way Bush foresaw” (2), the personal computer can function as a MEMEX-like machine, providing access to “individual databases of research notes, bibliographic citations and annotations, and other collections of information” (2). Pfaffengerber does not, however, discuss the concept of Hypertext, sometimes defined as non-linear text (Conklin) which is created by allowing users to access one textual chunk from another.

The idea of Hypertext has recently received considerable publicity with the release of HYPERCARD, a hypertext system for the Macintosh, which allows even novice users to organize and retrieve data with relative ease. Using HYPERCARD, the Freshman Writing Program at the University of Southern California has created a project concerned not only with managing data but also with teaching the students the more fundamental skill of how to access and utilize information for academic writing. This endeavor, termed “Project Jefferson” because its content is currently concerned with material from the United States Constitution, uses online databases to teach students research and critical-thinking skills essential for the writing of research papers in their composition classes.

Problems Associated with the Research Paper in the Composition Course

Although research papers have long been considered an essential component of the composition class, the poor quality of the resulting papers and the difficulties students have often had in accessing information from the library have raised important questions about the value of this type of assignment. As many weary composition instructors will acknowledge, student research papers are often uninspired, occasionally plagiarized, futile exercises for both students and instructors. In fact, in their examination of the role of the research paper in
the composition course, Ford and Perry conclude that there is a tendency “during the past twenty years ... to ignore research paper instruction entirely” (826).

Despite these difficulties, however, it would be a great disadvantage to students if the teaching of research skills were no longer considered fundamental to undergraduate education. Research skills are now recognized as essential for students to continue to learn — that is, to broaden their knowledge and awareness on their own — and the acquisition of such skills can have tremendous impact on student academic and professional achievement. As James Doubleday points out, “the skills a student learns in creating a ‘research paper’ should be extremely useful in the future academic career of that student” (513). Jeff Jeske similarly maintains that the research paper may be considered “a microcosm of education itself, inasmuch as it requires first finding information ... and then evaluating ... what is relevant and when it is valid” (63). What seems to be suggested, then, is that instead of eliminating the research paper from the composition class, a new model ought to be created.

**A New Model for the Research Paper — The “Researched Paper” and Staged Acquisition**

Recognizing the importance of developing a new model for the research paper, the Freshman Writing Program at the University of Southern California has created what has been designated the “researched” paper, to distinguish it from the traditional “research” paper with all of its attendant difficulties. The researched paper, which also may be termed a “documented” paper, is a relatively short work which utilizes secondary sources in support of an argument but which is not intended to be the more extensive pasting together of sources associated with the old model.

Moreover, in writing their papers, students develop skills through a process of “staged acquisition,” meaning that before they are expected to grapple with and locate sources for their papers, they first complete preliminary activities and assignments which are sequenced according to cognitive difficulty and are aimed at helping students create a model for developing a research topic.

The content area selected for this project, as mentioned earlier, focuses on issues related to the United States Constitution, a choice dictated not only because the publicity concerned with the Bi-Centennial made it a popular issue (providing easy access to resources) but also because topics involving human rights and ethical disputes are especially relevant to student concerns. Cases involving affirmative action, search and seizure, freedom of speech and the press — even rights of students as students — continue to be of contemporary significance, providing rich forums for discussion and almost infinite topics for assignments involving secondary-source research.

**Hypertext Applications in Information Retrieval**

These joined concepts, the researched paper and staged acquisition, have been implemented through the creation of a topic-specific, online information-retrieval system which serves as an important first step in preparing students to incorporate sources into their papers in Freshman Writing and, ultimately, to use the full range of library resources. The system has been developed in conjunction with the university library and the School of Engineering.

Project Jefferson runs on 12 Macintosh computers provided by a grant from Apple Computer and uses the concept of hypertext to enable students to access background information and secondary sources for their papers. It also enables students to acquire background information about key terms associated with the Constitution before they attempt to locate secondary-source materials. In addition, hypertext layering allows students to establish links between key terms, thus simulating the associative cross-referencing characteristic of the research process.

The system, located in a room across the hall from the Writing Center, also contains a database of articles specifically concerned with the topic of equal opportunity, which the user searches to find references for use in composition class assignments. Thus, project Jefferson enables students to work through a viable model of conducting research through staged acquisition, a model which they will then be able to replicate when they conduct research in the library.
The Electronic Notebook

Project Jefferson consists of the following components: a word processor (Microsoft Word) to facilitate the generation, writing, and editing of texts; access to the library on-line catalog and specialized on-line databases (magazine and newspaper indexes, etc.); access to the Writing Program's own pedagogical database (on the Constitution); and The Electronic Notebook (Fig. 1).

The Electronic Notebook resides on the student's own disk and students may take notes there or "download" and store information there, much as students did in their notebooks in the past. The Electronic Notebook consists of the following sections: Focus Questions, Assignment, My Ideas, Background Material, and Citations (Fig. 2).

These sections correspond to the types of information which the student creates or transfers to his Notebook during his search.

To summarize the sequence which students complete: the "Focus Questions" section (Fig. 3) asks students questions to help them access their own feelings and background on the subject of the assignment, the question of equal opportunity; student responses to these questions are written to a Microsoft Word file on the student's disk. Thus, students can use freewriting and discussion in order to become preliminarily involved with the topic.

After working through the "Focus Questions" section, the student reads through the "assignment" section (Fig. 4A, B, C, D), attempting to identify key terms for himself or herself about which additional information might be needed — background material or definition of unfamiliar words or concepts.

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Fig. 4C

The student will then reread the assignment, this time with key terms highlighted (written in bold letters). The process of identifying key terms in an assignment is an important step in undertaking a research assignment, and instructors can spend class time on this facet of the assignment depending on student need.

Once students are aware of the key terms in the assignment, which on a second reading appear highlighted, they can then select these terms (clicking the mouse) which will then access necessary additional information about the topic (definitions of terms, background information, etc.—see Fig. 5).

Moreover, the initial information screens they encounter are linked relationally to other information screens through the “Related Terms” field that appears. Students may click on any term in that field to get at the available information on that term. This system of information screens and related terms defines a rich hypertext environment that the student can browse, following the relational pathway that he or she chooses. As students browse screens they can “photograph” any of them with the camera icon on the left side of the screen. The information is stored in the “Background Information” area of their “Notebook,” where it may be viewed. At the end of the browsing, students need only click on the “Back” arrow (the arrow in the lower right corner of Fig. 5) to return to the exact point at which they originally entered the hypertexted information environment (e.g., pg. 3 of the “Assignment”).

Once students have gathered background information, they are then ready to search for secondary sources which are indexed in hierarchical form (Figs. 6A, B, C, D).

Each term in the index is then further subcategorized, modeling for students a method of organizing

Fig. 4D

Fig. 5

Fig. 6A

Fig. 6B

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information into a hierarchy. Students conduct searches by clicking in the “Mark Box” adjacent to a relevant search term.

The “Locator” part of the software then finds all articles in the database indexed for the term or terms chosen, and the students can view these as a set of citation cards that they can flip through (Fig. 6E).

If they wish, they can “photograph” them with the camera icon (in which case they are stored in the “Citations” section of the Notebook).

As students browse and try to evaluate citations they may also click on the Bibliolink field in the upper right hand corner of a citation to read an abstract of the cited term (Fig. 6F). If they decide that they would like to read the entire article, they can read it in hard copy in the MAC room or in the college library. Throughout the process, students can make notes and jot down ideas which occur to them by selecting the section marked “My Own Ideas” (Fig. 7).

As a result of this initial search process, students will have accumulated a number of materials in different parts of their “Notebooks.” Their initial thoughts and most general points of view will be found in the “Focus Questions” section. Subsequent writing (notes, jotted ideas, rough outlines) will be found in the “My Ideas” section of the Notebook. All “photographed” content information will be found in “Background Information,” and all citations in “Citations.” Cumulatively, these represent a substantial resource file that can be converted to a Microsoft Word file and, ultimately, incorporated into the paper as students approach the task of synthesizing information and writing.

The concept of hypertext has enormous potential for the management of text-oriented databases, a potential which is only now being seriously explored.
In its initial phase, the University of Southern California’s Project Jefferson is being used only by instructors in the Freshman Writing Program, but it is likely to have profound implications to the way research skills are approached throughout the university.

**Works Cited**


Irene Lurkis Clark is the Director of the Writing Center in the Freshman Writing Program at the University of Southern California in Los Angeles. She can be reached at (213) 743-2619.

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**Manuscript Submissions Welcome**

The *Newsletter* welcomes article submissions that pertain to word-processing, text-analysis, and research applications in professional writing situations, either corporate or academic. Also, hardware and software reviews are encouraged, but please contact Dr. Jim Schwartz, Hardware/Software Review Editor, *before submitting them* (call Jim at 605-394-1246). Manuscripts should be submitted on MS-DOS 5¼ floppy disks using *Aldus PageMaker*, *XEROX Ventura Publisher*, *WordPerfect*, *Microsoft Word*, or standard ASCII format. The Editors reserve the right to edit manuscripts if necessary. If you want your disk returned, please send enough postage to cover the return cost along with a self-addressed mailer. Address all correspondence to the Editors, *Research in Word Processing Newsletter*, South Dakota School of Mines and Technology, 501 E. St. Joseph, Rapid City, SD, USA 57701-3995. Jim may also be reached on CompuServe (70177,1154).
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March Educational Computing Conference in Arizona

The 9th Annual Microcomputers in Education Conference will be held March 6-9, 1989, in Tempe at Arizona State University. The theme is “Unlocking Education’s Connection to the Future,” with special attention to interactive technology. Contact Gary Bitter, Maureen Miller-Gerson or Janie Wilson, Microcomputers in Education Conference, AMF-Community Services Center, Arizona State University, Tempe, AZ 85287-0908, or call (602) 965-7363.

Academic Publishing Journal to Begin in February

The first issue of the quarterly Academic Publishing Journal will appear in February, 1989, followed by regular publication in April, September, and November. The first issue will include a listing of 842 publishing houses focusing on the academic market, as well as a listing of over 493 product suppliers for preparing camera-ready manuscripts.

The APJ plans to give practical advice to teaching and research professionals about publishing books in both technical and academic areas, publishing in refereed journals, self-publishing with desktop publishing, and developing new journals for your department or academic subject area. APJ’s “PUBSEARCH” will attempt to instantly distribute your book or journal article idea to over 842 interested publishing companies. Subscription has been set at $47 by the non-profit enterprise. Contact Theraplan, Inc., 3015 Woodsdale Boulevard, Lincoln, NE 68502-5053.


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Volume 6, #8 [November ’88], 16 pp.
Hard Disk Utilities: File Recovery Programs; Bibliography Update; News & Notes

Volume 6, #7 [October ’88], 16 pp.
How the Other Half Wordprocesses; Bibliography Update; Hard Disk Utilities, DOS Shells, and Disk Optimizers

Volume 6, #6 [September ’88], 16 pp.
Improving Your Writing With Style Analysis Programs; Bibliography Update; News & Notes

Volume 6, #5 [May ’88], 32 pp.

Volume 6, #4 [April ’88], 16 pp.
Norton Texta: Word Processing for Composition Classes; Bibliography Update; Beyond Word Processing—Text Management Programs

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The Professional Writer’s Workstation: Software for Managing Information; Bibliography Update; News & Notes

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Ten Computerized College Writing Programs: Toward a Benchmark; The Professional Writer’s Workstation: Content Analysis Comes to the Micros; The Future of Desktop Publishing in Technical Communications

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