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<td>1991-92</td>
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**PROJECT TITLE**

Computer Modules for Basic Writing Instruction

<table>
<thead>
<tr>
<th>FUNDING CATEGORY &amp; AWARD</th>
<th>ELIGIBLE PROGRAM</th>
<th>PROJECT CATEGORY</th>
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<tbody>
<tr>
<td>Grant = $11,520</td>
<td>A2 --- Individualized Instruction</td>
<td>Curriculum Design</td>
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<tr>
<th>PROJECT PRODUCT</th>
<th>PROJECT TOPIC #1</th>
<th>PROJECT TOPIC #2</th>
<th>ACADEMIC SUBJECT</th>
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<tr>
<td>Computer Programs</td>
<td>Curriculum Develop</td>
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<td>Writing</td>
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**PROJECT DIRECTOR**

James Stevens, Instructor of English

**PROJECT SUPERVISOR**

Jack Friedlander, Dean Academic Affairs

**PROPOSAL DESCRIPTION**

Through this project, Santa Barbara City College created, tested and implemented a series of computer modules which serve as a supplement to regular classroom instruction in basic writing skills. The seven interactive computerized tutorials addressed Basic Sentence Types, Verb Forms and Prediction, Connectives: Prepositions and Conjunctions, Modifiers: Adjectives and Adverbs, Punctuation, Pronouns and Paragraph Development.
Computer Modules for Basic Writing Instruction

A growing number of college students find themselves unprepared to meet the standards expected of them in their writing classes. Some students lack one or more of the fundamental writing skills such as writing complete sentences, using modifiers appropriately, using correct verb tenses, using the right pronouns, effectively connecting phrases and clauses, paragraphing, and using proper punctuation. Unfortunately, this lack of preparation places an inordinate burden not only on the individual student but also on the writing teacher, who must try to provide remedial instruction in basic writing skills instead of teaching the usual college writing areas, which include topic development, rhetorical approaches, clarity of expression, and stylistic improvement. Most teachers are unable to meet this challenge adequately, especially when numbers of class members demonstrate differing levels of preparation and critical needs in various writing areas. As a result, teachers are unable to complete all their instructional objectives, and too many students fail to achieve competence in writing or they drop out of school in frustration.

This project proposes to create, field test, and implement a series of computer modules which will serve as a supplement to regular classroom instruction in basic writing skills, and which may be used by students as tutorials that are easily accessible in the college’s computers. Recent research confirms the efficacy of computerized tutorials for supplementing classroom instruction, and the outcomes of this proposed project will add to these findings. Based on recommendations in the literature of composition and on the results of local needs surveys, the following seven interactive modules will be produced:

- Basic Sentence Types
- Verb Forms and Predication
- Connectives: Prepositions and Conjunctions
- Modifiers: Adjectives and Adverbs
- Punctuation
- Pronouns
- Paragraph Development

Four Santa Barbara City College faculty members will produce the modules using the very latest programming language, and the development phase the actual writing of the program code into interactive tutorials—will take place in the state-of-the-art Center for Learning Media at Intellimation, Inc., of Santa Barbara, which will contribute its facilities, equipment, and expertise to the project. This project addresses these FII funding priorities: nontraditional forms of
instruction, improvement of teaching abilities, improvement of the traditional instructional program, and cooperative programs involving local non-college institutions. A total of $11,520 is being requested from the Fund for Instructional Improvement to complete this eleven-month project. Matching District and other contributed funds total $13,295.
1. Specific Educational Program Being Addressed

Lack of preparation in the basic skills areas (writing, reading, critical thinking) among college students has been widely documented in educational literature and in the popular press. Teachers of writing must give enormous time to basics, including grammar, as remedial preparation for the more advanced writing skills such as topic development, rhetorical modes, clarity of expression, and stylistic improvement. The basic writing skills of an alarming number of entering college students are so deplorable that many teachers are unable to help their students advance to the level of writing competence expected of them in most higher level college courses and in the productive working world (Dean Memering, "Forward to the Basics," College English, 39, 1978). These students either remain frustrated in accomplishing their educational objectives or they drop out.

In 1988 a study by the National Project on Computers and College Writing examined the writing programs at 100 postsecondary institutions and concluded that "students at the lowest end of the [academic] scale benefited most from classes that incorporated computers in writing, . . . [particularly] in remediation, in adult and continuing education, and at community colleges" (Judith A. Turner, "Use of Computers Can Improve Students' Writing Ability, Study Shows," AA/mej, November, 1990).

This project proposes to develop, implement, and field test a series of computer modules for student self-instruction as a supplement to classroom instruction in basic writing skills. Seven interactive modules will be developed to address the following seven critical instructional areas in the teaching of writing, as shown in this diagram:

[DIAGRAM DELETED]

This project will be coordinated by one faculty member, who will also write the computer programs for the seven modules, and three faculty members, who will provide design consultation and software testing and refinement. The development of the modules will be conducted in the Center for Learning Media at Intellimation Inc., located in Santa Barbara, California, which will contribute its computer resources and expertise to this effort in
recognition of the significance of the objectives of this project toward improving computer-assisted higher education. The primary purposes of producing the modules are to respond to widely perceived basic writing skills deficiencies that because of inordinate time-on-task requirements cannot be effectively addressed with traditional classroom instruction (David A. Foster, A Primer for Writing Teachers: Theories, Issues, Problems, Boynton/Cook, 1983) and to test the effectiveness of these computer-based modules in improving student learning over the instructional approaches currently employed by faculty in teaching composition.

A total of $11,520 is being requested from the 1991-92 Fund for Instructional Improvement to complete this project. Approximately 5,700 students enroll in writing courses at Santa Barbara City College each semester. It is estimated that about one-third of that number, or 2,000 students, could participate in and benefit from the use of the modules. Formative and summative assessment of the effectiveness of the project in contributing to student learning will be conducted by the project team and the project evaluator.

The modules will be developed by using the latest version of an authoring program called HyperCard 2.0, which was created by Apple Computer for the Macintosh computer line. HyperCard is widely used by faculty members in higher education across the country (R. Boone, Teaching Process Writing with Computers, International Council for Computers in Education, Eugene, OR, 1989). Santa Barbara City College currently makes over fifty Macintosh computers available to students for self-instruction and completion of educational assignments in all academic fields. Because of the simplicity of HyperCard, modules created in the HyperCard environment may be used by students in all the computers with very little advance preparation (Research on Writing with Computers in Secondary Schools and Freshman Postsecondary Courses, Office of Educational Research and Evaluation, Apple Computer, Inc., Cupertino, CA, 1989).

Modules will typically consist of introductory information, examples, animated graphic illustrations, application rules and exceptions, usage guidelines, and practice quizzes. Student interactivity will be by means of on-screen buttons and data fields for input of prompted responses (words and sentences). The approximate hardcopy page equivalent of each module will be 30-50 pages. See Appendix 1 for a sample module that was created for this proposal.

This project addresses the following 1991-92 FII Funding Priorities:
(a) Non-traditional forms of instruction, including instructional programs involving independent study (§ 84381 of the California Education Code, Article 7)
(b) Improvement of teaching abilities of faculty members (ibid.)
(c) Improvement of the traditional instructional programs (ibid.)
(d) Interdisciplinary programs involving local non-college institution in the arts and sciences
(e) Academic Affairs: Educational Quality (1989-90 BOG Basic Agenda, Appen. C)
(e) Academic Affairs: ESL and Basic Skills (1989-90 BOG Basic Agenda, Appen. C)
Educational Program or Service Addressed

Self-instructional computer modules for college students have been in use since the early-seventies when Control Data Corporation introduced its PLATO system. PLATO consisted of entire curricula for instruction in medical fields and in several professional fields and academic specialties. In some cases, college credits were awarded for successful completion of courses presented entirely on the computer. This system, which was main-frame based, remained in use for a number of years until the advent of personal computers, at which time the development of instructional software passed from the hands of professional programmers to the hands of individual developers, many of whom were educators. In the mid-eighties, software distributors such as the Academic Courseware Exchange (ACE) served as clearinghouses for faculty-developed tutorials and instructional programs. Recently the services provided by ACE were taken over by Intellimation, Inc., located in Santa Barbara, California. Intellimation's catalog of faculty-developed "courseware" lists hundreds of programs in many academic areas. Some of these programs are directed to the need for writing self-instruction, but there is presently no comprehensive writing series outside the commercial market. Intellimation is seeking to establish partnerships with California colleges and universities for the purpose of promoting instructor-based software development.

At the same time, many colleges and universities, including SBCC, are increasing their inventories of Macintosh computer labs but are faced with a dearth of software programs that complement and enhance instructional programs. Software for the sciences and mathematics is proliferating, but instructional software for writing, reading, essential skills, and ESL is far behind in terms of quantity and quality (C. Daiute, Writing and Computers, Addison-Wesley, 1985). This fact is plainly evident in the comparative representation of science and non-science programs available in the Intellimation courseware catalog, where science software constitutes 60% and English language software only 5% of the total inventory.

The reason for the lack of instructor-developed software in some academic fields may be the result of the perpetuation of a long-time myth, which postulates that only scientists or mathematicians can write computer software. In the days of PLATO this was probably true. But today, with the advent of "intuitive" syntactical languages such as HyperCard, the programmer does not need complex algorithms and sophisticated subroutines to create educational programs with interactive capability. In fact, familiarity with syntactical structures-including the composition process-is adequate preparation for software development by teachers with little or no training in programming. HyperCard 2.0, in fact has been developed especially for non-programmers, although it is recognized as a powerful programming tool capable of producing sophisticated software, and a large market in educator-developed software such as that distributed by Intellimation.
2. Specific Problems Being Addressed

Specific Problem(s)
The following sentence was excerpted from a formal paper written in November, 1990, by a second semester college student:

"Us brothers dont have no time for to help my mother sence our father went away."

What is a teacher to do when confronted with evidence like this of severe-one could say incapacitating-writing problems among college students? The example sentence is, unfortunately, typical of the quality of writing done by a significant portion of students, many of whom are being educated so that they can transfer into the state's universities, or so they can enter the professional workforce. Some of them want to be teachers and nurses. The portion is significant because of the disproportionate amount of instructional time these students require. The effort required by teachers to effectively address and correct basic writing errors presents a considerable challenge. Time that must be given to remedial action at such a basic level is taken away from such vital postsecondary educational objectives as critical thinking, rhetoric, logic, and creative writing.

Increasingly, research shows that classroom teachers are turning to tutorial learning laboratories in order to help correct student writing deficiencies outside the classroom, for which the students assume responsibility to raise the level of their basic competencies (Peter Elbow, Writing Without Teachers, Oxford Press, 1973). Even in the best computerized learning laboratories, however, the few on-line tutorials that are available have been designed for the mass market rather than the institutions that purchase them (See Appendix 2), they are expensive, they are difficult to learn, and, most important, since they are "off the shelf" the faculty who refer students to them often have little or no idea of how they work or what pedagogical theories they are based on. Many "computer writing programs" are nothing more than text editors, offering no instruction whatsoever (Wesley Wresch, "Six Directions for Computer Analysis of Student Writing," The Computing Teacher, 15, 1988). Ideally, tutorials should be developed by the faculty themselves, based on their methodology and objectives, and for the students whom they must serve. The modules proposed in this document will remedy these shortcomings.

A related problem is the need for evaluation data on the effectiveness of the computer-based tutorials in enhancing student learning of writing skills over existing instructional approaches. For example, does the use of these tutorial modules increase the amount of time the students spend in learning the subject matter? What is the relationship between student use of this instructional technology and gains in student learning? These, and related evaluation questions will be addressed in this project.
3. Population To Be Served

Population Served
Ultimately, the students who would be served by the implementation of this project include any college students who utilize the instructional modules to correct their writing deficiencies. Initially, students who will benefit directly are those who are enrolled in Santa Barbara City College's developmental English writing courses. Once the effectiveness of the modules has been demonstrated, the modules will be made available to students in all writing, essential skills, and ESL courses (English 10, Preparatory College Composition; English 1, Composition and Reading and English 2, Literature and Composition; ESSK 44, Effective Writing Techniques and ESSK 83, Grammar Skills; English as a Second Language 14, Interim Grammar; ESL 15, Interim Writing; ESL 18 and ESL 22, Sentence Structure; ESL 80I, Writing Tutor). These three programs currently enroll approximately 5,700 students each semester, broken down as follows:

<table>
<thead>
<tr>
<th></th>
<th>Composition</th>
<th>Essential Skills</th>
<th>ESL</th>
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<tbody>
<tr>
<td>Fall 1990</td>
<td>2,867</td>
<td>1,420</td>
<td>1,449</td>
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<tr>
<td>Spring 1991</td>
<td>2,870</td>
<td>1,178</td>
<td>1,790</td>
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Instructors queried in all three programs estimate that up to one third of students enrolled in their classes could benefit from the prescribed remedial tutorials that will be developed in this project.
4. Objectives

[SEE “WORKPLAN” SECTION OF THIS DOCUMENT.]
5. Workplan Narrative

Objectives /Activities

PHASE 1.
Preliminary design of modules for the following areas: basic sentence types; verb forms and predication; connectives: prepositions and conjunctions; pronouns; modifiers: adjectives and adverbs; punctuation; paragraph development. Preliminary design includes:

• description of the format and the layout of the component units of each module
• rendering of interactivity pathways
• completion of pre- and post-use instruments

Project Objective 1. Complete preliminary design of seven prototype modules as described in this proposal.

Evaluation. The success of this phase of the project will be based on extensive review of the seven module prototypes by the design consultants to insure that they meet the objectives of the project and that the modules are pedagogically sound.


Cost to Project. Cost for this phase will be $960 for the project director’s time (40 hours at $24 per hour) and $1,440 for the three design consultants’ time (20 hours X 3 design consultants at $24 per hour). Estimates of required time are based on prior experience with similar activities for the personnel involved.

Costs for Phase 1: $2,400.

PHASE 2.
Creation of the prototype modules. Seven functional prototype programs will be created. This is the most labor-intensive phase of the project, and it will be performed in the computer laboratories of the Center for Learning Media at Intellimation, which will make available its facility and its computing equipment (computers, scanners, digitizers, printers). In exchange, the Project Director will share with Intellimation’s professional programming staff the methodology used in the creation of the educational modules.
Project Objective 2. Complete and field test the seven component modules so that they are interactively operational and free of design or processing faults.

Evaluation. The success of this phase of the project will be based on completion of the seven prototype modules and subsequent testing by the design consultants.


Costs for Phase 2. Cost for this phase will be $5,760 for the project director's time (240 hours at $24 per hour) and $3,240 for the three design consultants' time (45 hours X 3 at $24 per hour). In addition, approximately $5,640 in contributed services will be provided by Intellimation.

<table>
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<tr>
<th>Instructional Area</th>
<th>Hours: Creation of Module</th>
<th>Hours: Testing of Module</th>
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<td>Module 1</td>
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</tr>
<tr>
<td>Module 3</td>
<td>30</td>
<td>5</td>
<td>35</td>
</tr>
<tr>
<td>Module 4</td>
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<td>35</td>
</tr>
<tr>
<td></td>
<td>240</td>
<td>45</td>
<td>285</td>
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</table>

Costs for Phase 2: $9,000 plus $5,640 in contributed services.

PHASE 3.
Installation of self-instruction modules in computers in the college's Computer Writing Lab. The full series of writing modules will be placed on the file server or hard disks of the lab's Macintosh SE computers.

Project Objective 3. Complete installation and field testing of the seven component modules so that they are interactively operational.

Evaluation. The success of this phase of the project will be based on completion of installation and field (shakedown) testing.


Cost to Project. Cost for this phase will be $120 for the project director's time (5 hours at $24 per hour).
PHASE 4.
Implementation of self-instructional modules. During this phase students will use the modules prescribed for them by their instructors.

Project Objective 4. Make available for student use the series of writing self-instruction modules, and provide operational assistance as necessary. Periodically test the operational performance of the modules.

Evaluation. The efficacy of the writing modules will be confirmed by pre- and post-tests of students' basic writing skills in classes using the computer modules (experimental group) and in a matched set of classes not using the modules (control group). The success of the modules will be based, in part, on the gains students make in correcting deficiencies diagnosed in the pre-test. Information will be collected on student use of the modules and students' perceptions of the effectiveness of the modules in helping them improve specific writing skills.


Cost to Project. $3,100 for data input and Project Evaluator's time.

TOTAL PROJECT COSTS:

A. Funds requested from 1991-92 Fund for Instructional Improvement Program $11,520

B. Funds from District resources $7,655
Contributions from Intellimation $5,640
$24,815

Project Personnel
This project involves college writing instructors with vast classroom experience and considerable computer programming experience. Faculty involved in this project will be

Project Director: Dr. James E. Stevens English Instructor, SBCC. Dr. Stevens has been active in computer-aided instruction since 1986 and has authored commercially-available software for self-instruction in writing and literature. He currently chairs the college's Instructional Computer Planning Committee

Design Consultants: Mark Ferrer, English Instructor, SBCC; Director, Program of Intensive English, University of California, Santa Barbara
currently on leave of absence). Mr. Ferrer is a software developer and has been active in computer-aided instruction, particularly multimedia instruction, for many years.

R. Douglas Fossek, English Instructor, SBCC. Mr. Fossek is a senior faculty member at SBCC and is currently developing a computer laboratory at SBCC.

Michele M. Peterson, Essential Skills Instructor, SBCC. Ms. Peterson teaches students how to structure and use out-of-class time to complement in-class learning, and she also conducts research in improving student success.

Project Evaluator: Dr. Jack Friedlander, Dean, Academic Affairs, SBCC. Dr. Friedlander has extensive experience in evaluation. He has written a number of articles on evaluation and has served as a project evaluator for several successful F.I.I. grants as well as projects funded by the National Endowment for the Humanities, the National Science Foundation, the Ford Foundation, and the Andrew Mellon Foundation. All evaluative methods, procedures and results will be reviewed by the college’s Institutional Research Committee.

In addition to the individuals identified above, members of Intellimation's professional staff of computer programmers and educational product designers will contribute their assistance during the module development phase of the project.
6. Expected Outcomes

Expected Impact and Potential for Exportability
The computer modules that will be developed as an outcome of this project will be made available for use by students in the English, Essential Skills and ESL programs at Santa Barbara City College. By exercising their initiative, students will correct their diagnosed writing deficiencies while they increase their computer competency. These outcomes will be reflected in higher in-class and exit test scores.

Given the universality of the problem to be addressed by this project, the modules may be used at any of the institutions in the California Community College System with the appropriate computer equipment. Furthermore, the intention of the project development team is that exported modules will be custom designed to address local needs and instructional emphases.
7. Evaluation Plan

Project Evaluation Plan
During the fall semester, 1991, ten selected classes will participate in the formal evaluation process. These ten classes (sections) will comprise the two test groups, participating and non-participating. The scores from the tests taken by these groups will be analyzed statistically by the Project Evaluator.

The evaluation component of this project will be ongoing and accomplished by a team consisting of the Project Director, the three Design Consultants, and the Project Evaluator. Participating instructors will be sent questionnaires that assess their expectations and eventual results of module use by their students. The director of the Computer Writing Lab will provide evaluative information regarding module utilization in the lab. Students using the modules will be asked to complete a survey form containing items on their use of the modules and their perceptions of the effectiveness of the modules in helping them improve their writing skills.

Specifically, each student referred to any of the writing instruction modules will be asked to complete pre-use and post-use tests that will measure their understanding of the module’s content and their ability to demonstrate competence. An analysis of the results of these tests by the Project Director will be incorporated into the project final report.

Additionally, to compare overall class performance between two sample groups, classes with students who used the modules and classes where no students used the modules, will be given pre-term and post-term examinations that rate knowledge of the basic writing skills areas represented in the modules. Statistical analysis (Pearson r correlation coefficient) will be performed on the data to determine significance.

Finally, a study (chi square) will be conducted from the results of the timed exit examination that is given at the completion of the term to all English 10 students. English 10 is a mostly non-transferable developmental composition and reading class. The exit exam is scored on a seven-point scale by random teams of instructors. The findings will indicate whether student use of the modules can be related to obtaining a "passing" score on the exit exam.

Project assessment will be in accordance with recommendations and standards set forth in Assessment Validation Project: Local Research Options, California Community Colleges Chancellor's Office, February 1991.
Dissemination Plan

Dissemination of Project Information

1. Internal.
Faculty will learn how the modules work in one or more workshops for faculty at department meetings and at in-service workshops. Such a workshop has been planned for the Spring 1992 Faculty In-Service at Santa Barbara City College. In addition, demonstrations of the programming techniques that will be used to produce the modules will be presented at meetings of the college’s Computer-Aided Instruction Committee and the Instructional Computer Planning Committee.

2. External.
A paper describing the project will be presented at the annual meeting of the California Community Colleges Teachers of English annual conference or the State Conference on Tutorial education.

An article on the project will be prepared for submission to T.H.E.: Technological Horizons in Education or other appropriate publications.

A package consisting of the seven instructional modules, evaluation information, and a project final report will be presented to the Chancellor’s Office, California Community Colleges, and to any educational institution that requests it, at the end of the project period. Requesting educational institutions will be charged the cost of materials duplication only.
9. Budget Narrative

[NO “BUDGET NARRATIVE” ACCOMPANIES THIS DOCUMENT.]