CALIFORNIA COMMUNITY COLLEGES
AND
LOS ANGELES
COMMUNITY COLLEGE DISTRICT

#89-0010
California Community Colleges
Curriculum and Instructional Resources Division

<table>
<thead>
<tr>
<th>FISCAL YEAR</th>
<th>ID NUMBER</th>
<th>COLLEGE</th>
<th>DISTRICT</th>
</tr>
</thead>
<tbody>
<tr>
<td>1989-90</td>
<td>89-0010</td>
<td>Los Angeles Pierce</td>
<td>Los Angeles</td>
</tr>
</tbody>
</table>

**PROJECT TITLE**

Computer Assisted Writing Improvement for the Hearing Impaired

<table>
<thead>
<tr>
<th>FUNDING CATEGORY &amp; AWARD</th>
<th>ELIGIBLE PROGRAM</th>
<th>PROJECT CATEGORY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grant = $6,700</td>
<td>D --- Ed Services For New Clientele</td>
<td>Implementation Model</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PROJECT PRODUCT</th>
<th>PROJECT TOPIC #1</th>
<th>PROJECT TOPIC #2</th>
<th>ACADEMIC SUBJECT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Computer Programs</td>
<td>CAI</td>
<td>Hearing Impaired Stud</td>
<td>Writing</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PROJECT DIRECTOR</th>
<th>PROJECT SUPERVISOR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Norman Crozer, Director Special Services</td>
<td>Don Love, Dean of College Development</td>
</tr>
</tbody>
</table>

**PROPOSAL DESCRIPTION**

The purpose of this project is to develop a set of computer lessons to help improve writing skills of hearing-impaired community college students by developing their skills in finding and correcting common writing errors. The grant uses computer programs which were written as part of a previous FII grant in 1987-88. The work of this project expands the previous work into other areas of improvement for writing and the hearing impaired.
The hearing-impaired community college student is educationally disadvantaged because of a basic lack of adequate language development. One element of this problem is the inability of most hearing-impaired students to recognize even simple writing errors. In addressing the problem of how to improve the ability of hearing-impaired students to recognize and correct common writing errors, college programs serving disabled students are faced with several logistical problems. Inadequate funding, lack of specially trained personnel and the inability of traditional non-instruction resources such as textbooks to address this type of language deficiency requires the use of a more specialized instrument. This instrument is the computer, but there is a total absence of software written for hearing-impaired college students.

The purpose of this proposal is to develop a set of computer lessons to help improve writing skills of hearing-impaired community college students by developing their skills in finding and correcting common writing errors. This grant will utilize computer programs which were written as part of a previous F.I.I. grant ("Computer-Assisted Writing Improvement for the Hearing Impaired" 1987-88). The 87-88 grant produced a limited number of computer lessons addressing only two types of writing errors. These limitations were due to the excessive amount of time needed to develop the computer programs involved. Without the need for developing the computer programs, the total work effort in this project will be on creating new lessons to supplement those written in the 87-88 project. The number of lessons, as well as the range of writing errors to be presented, will be increased from the 87-88 project.

Use of the new computer lessons will improve academic performance in all classes which require writing. These improvements in writing skills will also lead to lower attrition rates among hearing and language-impaired community college students. These materials will also aid college support programs by reducing the need for instructor or tutor time.

The objectives of this project will be to: 1) compose the paragraphs to be used as data for the computer programs written in the previous grant; 2) field-test the lessons in pre-selected community college hearing-impaired programs in California; 3) revise the lessons based upon recommendations from the participating programs; 4) field-test the revised lessons; 5) if necessary, make further revisions based on this second round of field-testing.

The activities to accomplish these objectives will involve: 1) writing the paragraphs for the lessons; 2) writing support materials describing how to use the lessons; 3) contacting certain
California community college disabled students programs to establish which will participate in the pilot program; 4) gathering and implementing the recommendations for changes from the participating programs; 5) resubmitting revised lessons to the pilot programs; 6) gathering and implementing final recommendations for changes from the programs.

The budget for this project will be allocated for the project director, data entry typist and blank computer disks. The total amount requested is $9,555. The in-kind match from the LACCD will cover facilities and administrative costs.

A flyer describing the computer lessons created as a result of this grant and acknowledging the Fund for its support will be sent to all California community colleges. It is expected that this flyer will generate numerous orders for the set of computer disks and will serve as the ideal medium for disseminating the final product to California community colleges.
Introduction
The Los Angeles Community College District (LACCD) has assigned to certain of its colleges the responsibility for providing services and classroom instruction for students with various types of disabilities. Los Angeles Pierce College is one of two schools in the district assigned to provide a program for hearing-impaired students.

Instruction at Pierce is conducted by one full-time instructor trained in the area of the deaf and hard-of-hearing. The program for deaf students includes courses in English, reading improvement and vocabulary development. This program also has a self-contained computer laboratory containing seven Apple microcomputers. Three of the eight Fund for Instructional Improvement grants received by the project director have supported development of software used in this lab. Indeed the only software used in the lab was created by the project director.

Educational Program Addressed
This project will be based on a previous Fund for Instructional Improvement grant completed in 1988 by the project director entitled Computer-Assisted Writing Improvement for the Hearing Impaired" (project number 244-87-01, 1987-88). This grant addressed two areas of student writing problems: 1) placement and use of the articles A, AN and THE, and 2) incorrect subject-verb agreement. This grant produced a limited number of computer lessons in the form of short essays, each containing various numbers of pre-selected writing errors, The number of lessons and types of writing errors addressed in this grant were limited because of the excessive amount of time required to write the corresponding computer programs. Student reaction to the lessons produced by this grant has been very positive and has included numerous requests for expansion of both the quantity and scope of these lessons.

The goal of this project is to develop a set of computer lessons to continue the work begun in the 87-88 project. This project will expand and strengthen the ability of hearing-impaired students to recognize specific types of writing errors commonly made by these students. The fact that no time will be required to create the computer programs to make this project operational, will mean that the total effort of this project will consist of expanding by five the
areas of writing errors presented to the students, and developing enough lessons in these areas to produce measurable student improvement.

The project in this proposal will be conducted singly; the only other involvement will be that of clerical services.
2. Specific Problems Being Addressed

Specific Problems

The hearing-impaired community college student shares a multitude of educational problems with other language-impaired students. These problems stem primarily from a basic lack of adequate language development which is a direct result of their hearing loss. The inability to hear, if beginning at an early age, is reflected in diminished reading and writing skills which are generally six to ten grade levels behind their hearing peers. (Moores, Donald, *Educating the Deaf*, Boston, Houghton Mifflin Co, 1987) Hearing-impaired students can and do learn the rules of English grammar and structure, but they have a difficult time putting these concepts into practice. These concepts are not internalized because of a lack of sufficient reinforcement through practice. One of the affects of this situation is the inability of many hearing-impaired students to recognize even simple writing errors. Many of these writing errors can be corrected by the students themselves when these errors are located for them, which is quite frustrating for both students and instructors. Hearing-impaired students need to be trained to recognize their common writing mistakes by proofreading. This skill needs to be developed to the extent that the students will begin to recognize these errors as they are writing. When this happens, the students can then concentrate on more advanced grammar concepts to improve their writing skills even further.

Given that hearing-impaired students need to acquire the skill of recognizing simple writing mistakes, the question is what is the most practical and efficient method for achieving this goal. Textbooks and other traditional educational resources are unable to develop proof-reading skills. The training involved must be interactive and allow for student input and response to that input. The obvious solution to this problem would be to provide a tutor or instructor on a one-to-one basic. It is equally obvious that such a solution is not practical particularly in the present situation of inadequate or dwindling funding available to programs serving disabled students, and a scarcity of specially trained instructors and tutors. The only tool remaining to adequately provide improvements in recognizing writing errors is the computer. The computer is available at any time the office or lab is open, it is always patient, it can give the student immediate feedback for right and wrong answers, it can focus the students attention on special problem areas and it is non-threatening to students. The computer, however, is only as good as the software used in it. Another problem this presents is that no software exists that was written for hearing-impaired college students and their special needs. Furthermore, there is no commercially-available software that addresses the improvement of proof-reading skills. It is therefore essential that the software involved be specifically created for hearing-impaired students with their unique needs.
3. Population To Be Served

Population Served

Any language-impaired student will be able to benefit from the use of these computer lessons. Included in this population are the deaf, the foreign born, the developmentally disabled, the learning disabled and the socially disadvantaged. While it is difficult to estimate the total number of students in these groups, a conservative estimate range in California would be 5,000 to 10,000 individuals.
4. Objectives

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

Work Statement

The overall objective of this project is to produce a series of computer lessons to improve the writing skills of hearing-impaired community college students. Each lesson will consist of a short essay containing predetermined writing errors corresponding to its area of writing errors. The objectives are

1. Determine and contact those California community colleges which will be asked to participate in the pilot program phase of the project. To carry out this objective, the project director will call the larger programs serving disabled students and determine which programs will be interested in using the computer lessons developed in this grant. Several programs already contacted have voiced an interest in participating in this pilot program, and to use the lessons in their final form.

DATE, BUDGET:  (October, 1989. No expenditure for this objective)

2. Compose two sets of 80 lessons in each of the two areas already addressed in the 87-88 grant, thus bringing to 60 the total number of lessons in these areas. To carry out this objective, the project director will utilize examples of students' writings to create essays involving these types of errors. The format will be modeled on those already created in the other grant.

DATE, BUDGET:  (September-December. Proposed budget $1,216)

3. Compose five sets of 60 lessons corresponding to the four new areas of writing mistakes to be presented in this project. To carry out this objective, the project director will again utilize examples of students' writings to create the data. The four new areas of writing errors will include: 1) incorrect forms of words (e.g., "improve" instead of "improvement"), 2) incorrect verb choice (e.g., using "have" when they should use "do"), 3) incorrect adjectives, 4) incorrect adverbs, 5) combinations of all areas of writing errors.

DATE, BUDGET:  (September - December Proposed budget $4,852)

4. Create new lesson diskettes utilizing the already written programs from the previous grant and the new data. To carry out this objective, the project director will give the completed essay data to the typist to input on the appropriate disks. The project director will then place the appropriate computer programs created in the other grant on each disk to make each operational.

DATE, BUDGET:  (January. Proposed budget $1,298)

5. Write a pre and post test to measure student improvement in recognizing their common writing mistakes. To carry out this objective, the project director will create several
essays similar to those for each lesson. Unlike the lessons which will present errors from only one area of writing errors at a time, these essays will contain mistakes from ALL six areas of writing errors.

DATE, BUDGET: (January. Proposed budget $250)

6. Submit the new computer lessons to the participating schools and request suggestions for improvements and revisions. To carry out this objective, the project director will mail sufficient copies of the computer disks with instructions on how to use the lessons to the participating programs. The programs will be instructed to keep records on all of the mistakes they find and also suggestions for any changes in the data.

DATE, BUDGET: (February. No expenditure for this objective)

7. Gather and organize the suggestions for changes received from the participating schools. To carry out this objective, the program director will regularly contact the participating programs to determine if there are any major problems and to remind the instructors to keep precise records of the changes that need to be made.

DATE, BUDGET: (February - June No expenditure for this objective)

8. Make revisions in the data created in this project based on the feedback from the participating schools. To carry out this objective, the project director will review the recommendations for changes. Those suggestions that are consistent with the objectives of the project and do not violate the integrity of the lessons themselves, will be incorporated into the data.

New vocabulary in the data may be substituted for some that have been determined to be inappropriate or whose meanings are beyond the reading levels of the students.

DATE, BUDGET: (June - July Proposed budget $1,939)
6. Expected Outcomes

Expected Outcomes

The expected outcome of this project will be the development of a set of computer lessons to increase the ability of hearing-impaired students to recognize simple writing errors they commonly and continually make. The students using these lessons will gradually internalize these skills and will soon reach the point where the recognition process will occur naturally as the students do their compositions. There will also be a set of secondary outcomes as a result of this project. As the students' writing improves, there will be an improvement in their academic success in classes that require writing, which will, in turn, decrease the amount of frustration and anxiety. Improved academic success will also lead to a reduction in the attrition rate. This will lead to a reduction in the need for hiring tutors which will benefit programs for disabled.

The computer lessons will be used in the hearing-impaired program at Pierce College far beyond the ending date of the project. The lessons will be required for use with the special classes in English for hearing-impaired students. Many other community colleges in the state are also expected to use the lessons in their programs for the hearing and language impaired.

Within the LACCD, the two colleges having large programs for hearing-impaired students, Los Angeles Pierce College and Los Angeles Trade Technical College, will receive copies of the computer lessons to use with their hearing-impaired students. Evaluation sheets will be sent to the instructors involved, and there will be periodic contacts with these instructors. Evaluation sheets will also be given to the hearing-impaired students to get their input for further revisions to the lessons. Pre and post testing of the students' ability to recognize and correct the types of writing errors they commonly make, will measure the effectiveness of the success of the lessons and will show areas of weakness. Finally, copies of the reviewed computer lessons will be used at Pierce and Trade Tech to assure that disks are ready for dissemination.
7. Evaluation Plan

[SEE “OUTCOMES” SECTION OF THIS DOCUMENT.]
8. Dissemination Plan

A copy of the computer lessons will be forwarded to Chancellor’s Office of the California Community Colleges. The project director will also create a flier describing the lessons, and acknowledging the Fund for its support will be sent to all California community colleges. Sets of the disks produced in this project will be made available to all California community colleges at cost.

[SEE ALSO “OUTCOMES” SECTION OF THIS DOCUMENT.]
9. Budget Narrative

[NO "BUDGET NARRATIVE" ACCOMPANIES THIS DOCUMENT.]