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The second year of this two-year small grant/loan project will complete development of an innovative and interdisciplinary program in business communications, using a faculty team with members from Computer Information Systems and Business, English, and Art. A private industry advisory committee will continue to provide support and guidance. This project development strategy—teaming an interdisciplinary faculty with private industry partners for purposes of program design and curriculum development-addresses a systemwide need to create streamlined, effective, state-of-the-art vocational programs with infused academic skill development and adaptability to changing private industry needs.

By disseminating statewide a final report on the development of the business-education consortium and the curriculum material/design specifications, this project will help meet the statewide need for relevant vocational education in arenas of rapid technological change.

**Consortium Approach.** Creation of an efficient business-education partnership is an essential ingredient in the success of this project. A working Advisory Committee will continue to provide vital feedback in curriculum design, in ensuring that assessments of hardware and software specifications are in accord with projected industry needs. The industry advisors also help us refine the curriculum and program offerings to obtain maximum benefit for students and future employers. Private industry consortium partners are providing guest lectures during our first year, and are expected to provide internships, and employment opportunities for graduates, as well as industry contact for faculty.
The project addresses two eligible areas defined by the Fund for Instructional Improvement as priorities: program development, and economic development and vocational education. The project also addresses several areas defined by the Fund as being of interest to the state: the development of strong degree and certificate programs in transfer and vocational education; the provision of relevant vocational education to train people for future, more complex jobs; cooperative efforts between business and education to keep vocational education relevant; recruitment of faculty from the ranks of industry; and providing flexible programs to improve the access of students with families and jobs.

The two-year program, when completed, will essentially replace the traditional training students receive in vocational business programs which have emphasized business English, word processing, and office routines. Students completing this two year program will obtain a strong foundation in English, grammar and clear writing techniques; they will know how to use a variety of computer software applications used in business such as word processing, computer graphics, and desktop publishing as well as computer hardware such as scanners and CD-ROM; and they will gain foundational literacy in art, graphic design and other aspects of visual communication. In short, they will be well-prepared to assume job responsibilities in today's business offices where breadth of knowledge and versatility are highly valued.
Vocational business programs need to provide more relevant training for entry level workers as well as retraining for those currently employed. Furthermore, business training programs need to provide workers with the best prospects for long term employment by providing both academic and technical preparation for employment. As the tech-prep movement in education suggests, well-educated employees who have sound language and math skills, as well as applied technical skills, will be more likely to adapt to the changing employment opportunities available over the course of the average lifetime.

Enrollment in traditional secretarial courses and even word processing classes is no longer sufficient to prepare people for long term employment in business. As the micro-computer revolution has progressed, the complexity of the tasks required of information workers—those who were formerly called secretaries, typists, word processors or computer operators—has increased substantially. More often, small and large businesses are seeking entry-level employees who have received strong preparation in written communication, who have visual literacy and assimilative capability, and who have a working knowledge and familiarity with the computer applications now on the market. These skills and abilities combine to enable the well-trained individual to produce clear and effective business communications using the available technology.

While much is written about colleges’ need to update their vocational curriculum and make courses more relevant to the labor market, little has been done to upgrade computer technology programs by integrating technical and academic skills. Many colleges now offer curricula in each of the disciplines of computer information systems, art and design, and writing, but no program exists which specifically integrates these three communication arts. The Vista program will therefore serve as a model for other programs in communications statewide, and the course outlines and program configuration will be shared with other community colleges.

Surveys of Bay Area businesses and industries conducted during the Fall of 1993 confirm that these organizations need employees with the versatile skills to be provided through the proposed
program. Recent data also indicate that Alameda County's fastest growing job sector is service industries. Many of the new service sector jobs include "that portion of the business service group encompassing computer services of all types. The development of the computer has led to a multitude of constantly evolving business applications and has created a need for various computer specialists." (State/Local Cooperative Labor Market Information Program Projections, 1989-91, p.10) The proposed program will contribute to the economic development of the college's service area by providing education to upgrade the skills of people already employed as well as persons new to the labor market.

The deepening microcomputer revolution has changed the modern workplace in significant ways: increasingly, computers are used as important tools in all aspects of business and work. In information/service industries, the fastest growing sector of the economy, as well as all other industries and the public employment sector, use of the computer for communication has increased the technical skills required of employees. Communication and information have become more important both as an organizational product of the service industry and as a means of carrying on organizational activities such as organizing and training, marketing to clients, and engaging in trade.

Employees formerly charged with using the computer as a typewriter are now expected to be familiar with a variety of software packages. Desktop publishing has brought in-house the task of producing publications, and employees in many workplaces need to have skills in desktop publishing, writing and editing, and document design. Workers of the future will need integrated skills in visual and written communications, as well as computer technology to succeed in the workplace.

Although most organizations and businesses have made investments in computer hardware and powerful software programs, both large and small firms report a dearth of entry-level employees prepared to understand and 'use this technology to its full potential. Service bureaus which work closely with businesses' in-house artists, designers, writers and clerical workers often find their work hampered by inadequate use of software and hardware. And as companies downsize and the competitive business environment drives them toward greater efficiency, versatile and flexible employees who can produce a variety of information
documents are more valuable than the specialized workers of the past.

Other vocational training needs were identified by industry research during the first year of the project:

Cross-platform computer training In keeping with the overall increase in flexibility required of them, workers need to be fluent on both the Macintosh and Windows platforms. It is no longer sufficient to know just one platform or the other. Workers also need an in-depth knowledge of how to smoothly transfer information between the two types of system.

An emphasis on teamwork

Teamwork skills were cited in nearly all of the industry surveys we conducted in the Fall of 1993. An inability to blend in smoothly as part of an ad hoc work team can negate the technical competency of any worker.

Communication skills Workers in the downsized organizations of the present and future need enhanced communication skills. They need to communicate comfortably at all levels in the organization. They must efficiently articulate their ideas, and be good at listening to the needs and ideas of others.

Task-oriented computer training

Industry advisors highlighted the need for computer users to understand how to perform common tasks with a variety of programs. Rather than learning how to get some task done with one program, our advisors advocated teaching the same task on several programs. This will help students focus on the important concepts they must use with software, rather than on the mechanics in traditional application-oriented computer training.

PROJECT SOLUTIONS TO THE PROBLEM

This project has three major ways of approaching the problem of providing relevant vocational education that prepares students for long term as well as short term employment.

1. Integration of Academic and Technical Training.

The current disjuncture between school training and industry needs is quite apparent. Typically, college faculty teach in disciplines that are
relatively static and theoretically isolated, while in industry, integrated and applied skills are necessary. Hence, this program seeks to integrate the technical skills of microcomputer use with the "academic" skills of sound writing and art and design. In print and visual media, all three skills are necessary.

To deepen the academic content of the program, a core curriculum of courses in clear writing, art/visual communication and computer skills, combining graphics and desktop publishing, will be designed and taught by interdisciplinary faculty from the English, Art, and Computer Information Systems departments at Vista Community College. It is important to note that in all classes designed for this program, use of computer technology is the unifying principal, and course design and implementation is by its very nature interdisciplinary.

An example of the interdisciplinary approach is an English course in Clear Writing we are pilot testing in the Spring 1994 semester. All student coursework is executed on the computer. Students learn basic techniques to plan and structure their writing for enhanced clarity. Visual design principles taught include the use of type to indicate structure and the use of space on a page. Computer skills covered in the class teach outlining and grammar checking features of word processors that can facilitate the writing process.

All core courses in this program will be taught on the computer or using the computer to demonstrate key concepts. While students will be able to specialize by taking electives related to technical communication in any of: the three discipline areas, all students will take core classes first. In addition, the curriculum will have a seminar or overview class that introduces students to both the hardware and software common to the modern business. This course will be updated each semester as technology changes and will use guest lecturers from industry; it will thus serve, and be available, to program completers who wish to come back and brush up on the newest technology applications.

The curriculum development team decided upon the following courses to serve as the core curriculum:

- **Language skills:** Clear Writing
- **Visual Communication:** Visual Literacy
- **Business/Computer information Systems:** The Computer in Communication (a seminar); Computer Resource Management
These courses are being offered during the Spring 1994 semester. Based upon student feedback and industry advisor review, they will revised during the Summer, and offered again during the Fall semester (the second year of the grant).

Additional courses, designed to provide specialization in technical writing, computer art/graphics, and computer software and hardware applications, will be developed in the second year of the grant. Some will be short term or Saturday classes, designed to serve students whose work and home lives make attending college complicated. Possible courses include the following:

Language skills:
  Technical Writing; Publishing & Production Techniques; Copy Editing

Visual Communication:
  Computer Image Editing, Color & Design on the Computer

Computer Information Systems:
  Desktop Publishing, Using Hypertext, Creating Business Presentations,

Introduction to Telecommunications.


In this program, a partnership between industry and the community college is essential for success. Both the rapidly changing technology and the need for an integrated approach to electronically-based communications makes a consortium with industry the best means of addressing the problem.

A key course in the curriculum is the seminar, *The Computer in Communication*, which will use guest lecturers from industry presenting such topics as the latest software applications, the use of hardware such as scanners and photo cd’s and the application of same to communication documents such as corporate reports, publications, manuals, letters, etc. Vista is well placed to recruit such instructors; software firms abound in Berkeley and multi-media gulch in nearby San Francisco also will provide access to industry experts. Vista currently hires a large proportion of part time instructors in vocational programs. By employing these guest lecturer s from the business consortium, Vista will ensure the program’s continued relevance and dynamism.
Clearly, the rapid technological changes occurring in the computer industry will require that faculty be linked closely to industry so that they stay abreast of the technical changes and industry ties are critical to the continued success of the program.

In the first year of the project, Vista College has developed a consortium with business/industry groups to:

- Define the content of core curriculum classes and to serve as a continuing advisory committee on program improvement;
- Serve as guest lecturers and specialized instructors, and to provide constant involvement necessary if the program is to remain current;
- Establish opportunities for curriculum developers to update their knowledge of skills needed in the workplace;

Objectives for the consortium development during the second year of the project include:

- Identify employee communication training needs and opportunities for student internships;
- Assist for Vista instructors with updating their knowledge of skills needed in the workplace and continue to keep abreast of the latest technical developments;
- Donate hardware and software to the project for classroom use; Evaluate student learning and skill development with proficiency testing; Assist in job placement for program completers.

3. Developing curriculum that enhances students’ abilities to continue to learn and adapt to rapidly changing computer technologies.

In the short term, students will be prepared for immediate jobs. In the long term, the training must teach the students how to broaden and deepen their knowledge and skills within the industry so that their skills remain relevant over their work-lives. The curriculum includes teaching students how to read manuals, to read and learn from popular publications, and to use available means (technology fairs, for example) to learn more about emergent hardware, software and applications. Field trips are planned to acquaint students with local sources of hardware and software. A key seminar in computer and
communications, taught with strong participation by industry representatives, will be repeatable so that when new technological leaps occur, continuing or completed students can join with new students in learning about those changes. The program's design consists of half unit, one unit and two unit courses, as well as evening and weekend scheduling. This ensures that courses providing updated information will be available to persons who also work.

Our industry advisor panel has recommended that additional features be added to the project. One of these is a task-oriented approach to teaching computer skills. Traditional computer curriculum is dominated by application-oriented training--instruction designed to teach students a single computer program. Based upon advice from our industry advisor panel, we are going to pursue teaching tasks on the computer, not just application programs. An example of a task would be how to import a graphic image into a document. Rather than teaching the task of importing a graphic using one program, we would teach the same task (importing) being done in several programs. Thus, the concept involved in the task would be taught and highlighted, rather than the mechanical execution of the task in a single piece of software. Such instruction should enable students to perform these tasks in any software they encounter in the workplace.

Another program feature recommended by our industry advisors, and confirmed in our industry survey, is an emphasis on teamwork. Team tasks will be worked into all of the curriculum. At least one team project will be included in each course design. Provisions will be made for instructor and peer evaluations of group work skills.
There are four distinct groups of students who will gravitate to this program: Recent high school graduates (including a 2+2 tech prep program); Reentry students desiring to obtain skills for work; People currently employed in office-skills areas such as word processing, clerical work, printing shops, etc. who want to upgrade their skills; and Persons recently unemployed who need to retrain, As indicated earlier, the rapid changes in information work that have been caused by the microcomputer revolution have increased the complexity of work for students who formerly were able to obtain steady employment after completing a typical college business program. In the short term, the curriculum outlined above gives all four categories of people immediately relevant technical skills, as well as a solid grounding in visual and language communication. In the longer term, the curriculum will teach students how to continue to learn about technological changes in their field, and provide certain courses that can be taken repeatedly to upgrade skills.
Objective 1

Task. Expand the role of the Education-Business consortium to provide internships, hardware and software donations, job shadowing, and job placement. All functions of the Education-Business consortium will remain operational throughout the life of the program.

Completion Date. Ongoing

Benchmark Standards. Ensure that functional curriculum advisory committee is in place. Additional firms and individuals should be identified for use in guest lecturing, etc. Maintain consortium operations throughout life of project.

Objective 2

Task. Continue to design and field test a comprehensive, integrated curriculum in Communication Arts and Information Technologies.

Completion Date. Spring, 1995

Benchmark Standards. Ensure that overall program and specific courses are designed and/or taught as required and that review process is completed in a timely fashion.

Objective 3

Task. Design specifications for, purchase, configure, and install needed hardware, software and networking infrastructure (including upgrade and incorporation of existing equipment).

Completion Date. August 30, 1994

Benchmark Standards. Ensure that equipment is in place for initiation of teaching in Fall 1994 term.
The annual workplan is detailed in the attached "Application Annual Workplan and Performance Indicators" forms. The workplan involves three primary activities: (1) setting up and working with an industry advisory group which will assist the project throughout its life; (2) Designing and installing hardware and software; and (3) developing, field testing, evaluating, and refining curriculum.
As noted in earlier sections, the objective of this two-year project is to develop an innovative and interdisciplinary program in business, communications, guided and supported by an education-industry consortium, which will be a streamlined, effective, state-of-the-art vocational program with infused academic skill development and adaptability to changing private industry needs. Project design and strategies for private industry participation, curriculum materials, hardware and software requirements, and significant findings will be made available to benefit community colleges throughout the State of California. Because the project design emphasizes the development of a relatively limited number of specific interdisciplinary core courses to be supplemented with widely available electives, project planners believe that the program will be highly adaptable to other colleges.

Since the project will result in an ongoing vocational: curricular certificate program, there is no question regarding its long term institutionalization.
Formative evaluations will be performed throughout the project, as is indicated in the Annual Workplan and Performance Indicators. A summative evaluation will be performed in the last month of this two-year project. The work statement objectives and activities will be assessed for completion. Problems incurred during the course of the project will be identified. Effective methods of teaching methodology and learning outcomes will be identified. A set of recommendations will be developed in conjunction with program review with the consortium partners for curricula refinements.
This project will provide two products that can be disseminated statewide. One will be a final report on the use of the business-education consortium in curriculum development and implementation, including a description of the types of firms/organizations that appear to be well-suited to the training program. A second product available for dissemination will be a course/curriculum guide for development of integrated language, visual and technical communication programs at other institutions. Vista proposes to make both products available for the cost of reproduction, and will announce availability through the news media provided by the California Community Colleges.

Vista will send representatives to at least two major educational conferences during the second year of the project (1994-95 school year). One of these will probably be the annual conference of the League for Innovation in Community Colleges.

The products will remain available for one year, or until June 1996.
A general cost breakdown by activity is as follows: the cost of planning activities related to maintenance and enhancement of the Consortium is estimated at $1,530 and will be absorbed by the College; program and course development expenses for the second year are estimated at about $9,000 for faculty with another $8,100 in in-kind expenses from private industry partners; an additional approximately $2,000 will be spent for the Project Director's salary to coordinate the activities of the Consortium and faculty. An additional approximately $9,000 will be spent for classroom instruction/field testing of courses in the first year; other, expenses include supervisor's salary, clerical support salary, fringe benefits for faculty and staff, and materials and supplies.