CALIFORNIA COMMUNITY COLLEGES
AND
PERALTA
COMMUNITY COLLEGE DISTRICT

#91-0019
### The Toolbook: Videodisc Instructional Improvement Project

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<th>FUNDING CATEGORY &amp; AWARD</th>
<th>ELIGIBLE PROGRAM</th>
<th>PROJECT CATEGORY</th>
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<td>Grant = $43,107</td>
<td>E --- Improvement of Trad. Instruction Prog</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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<td>Video Disc CD</td>
<td>Curriculum Develop</td>
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<td>Biology</td>
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<th>PROJECT DIRECTOR</th>
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<tr>
<td>Henry Schott &amp; Judith Donaghey, Professors</td>
<td>Lawrence Gurley, Ass’t Dean Math/Science</td>
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**PROPOSAL DESCRIPTION**

This project improves the traditional instruction programs in Biological Sciences and Landscape Horticulture at Merritt College through the development and use of six computer assisted videodisc programs which are linked to Asymetrix Toolbook software.
The Toolbook-Videodisc Instructional Improvement Project

This project improves the traditional instructional programs in Biological Sciences and Landscape Horticulture at Merritt College and provides examples of new instructional methods for the Peralta District. We wish to develop six computer assisted videodisc instructional programs. When these are linked to the Asymetrix Toolbook computer software they will serve as Pilot modules for videodisc learning in the Peralta District. Students will be provided with instruction linking high definition video images with on-screen information. Images, stored on high-capacity videodiscs, will be accessed by the computer in new programmed sequences to provide individual instruction, independent learning or classroom lecture-discussion activities.

This project addresses the improvement of instruction in vocational and science education by training teachers to utilize this new multi-media tool. It will improve the teaching ability of faculty to teach visually intensive subject matter to educationally disadvantaged students enrolled in vocational subjects in our expanding programs in Landscape Horticulture and in the Health Sciences. It will provide new and innovative learning opportunities for educationally disadvantaged students who require a repeated visual experience to learn anatomy & physiology or plant 'materials.

This project will be directed by faculty in Landscape Horticulture and the Biological Sciences, which at Merritt College are supervised by the Math/Science Division. These departments share the common need to present visual information in organized sequences in vocationally oriented courses such as Plant materials and anatomy and physiology. Although the use of 35 mm slides and overhead projection visuals have filled this need in the Past, the videodisc provides the instructor and students with an almost unlimited source of images and will Permit student access to these same images at videodisc learning stations.

Our objectives include the development of the programs needed and the dissemination of this information to others through workshops. We will demonstrate the use of videodisc instruction for classroom presentations and for use as independent study stations. Training others in the production of videodisc learning modules will extend the use of this new multi-media tool to other disciplines. This will improve the traditional teaching methodology in other courses where visual information retrieval is an integral part of instruction. We request a total of $43,107.
1. Specific Educational Program Being Addressed

Specific Educational Program Addressed:

This project addresses improvements in the traditional instructional programs of the Biological Sciences and Landscape Horticulture departments at Merritt College through the development of six computer-assisted videodisc instructional modules. When the information stored on videodiscs is linked to instructional computer programs written with the Asymetrix Toolbook authoring software, new learning opportunities will be created. These modules will offer additional methodologies that are particularly valuable for teaching educationally disadvantaged students who require repeated visual experience to learn anatomy and physiology or plant materials. The six programs will serve as Pilot modules for videodisc learning in the entire Peralta District.

Programs developed through this grant will link the high definition video images stored on the videodiscs with on-screen computer aided instruction written by the teacher. These programs can then be used to access images as needed for lecture-discussion classes or as units in individualized instruction.

This project addresses the need to improve teaching abilities of faculty by demonstrating the use of videodisc-learning stations to instructors for classroom presentations. The teaching ability of faculty will be greatly enhanced by using the authoring programs to write computer-driven learning modules that utilize this new multi-media tool. Through staff development workshops aimed at improving educational standards, instructors in the Biological Sciences, Landscape Horticulture, and in other departments will be trained in the use of these programs. Since these workshops also attract instructors from other Peralta Colleges, the programs we generate will benefit the instructional programs throughout the District.

The project also addresses improvement in vocational education in Merritt's strong and expanding programs in Landscape Horticulture and in the Health Sciences. The Landscape Horticulture Department is a well-established vocational program that attracts students from
many communities in the Bay Area. The anatomy and physiology classes provide introductory courses for students entering the health sciences, a vocational area that is expanding rapidly.

In addition, this project promotes the improvement of individualized instruction and independent study in the Biological Sciences and in Landscape Horticulture. Because programs we develop will be self-contained, they will be useful as individualized instructional tools. At first, the programs will be available in the departments where they will be used for group and individualized instruction. Later when videodisc stations are established in the Computer Assisted Instructional Center, students will be able to use the programs upon request.

This project will be especially beneficial for older, working adults, an increasingly important clientele in the Health Sciences and Landscape Horticulture programs. It will also benefit students involved in the transfer education programs who are more likely to use independent study opportunities that these programs provide. Through the development of these videodisc learning modules, better visuals will be available to students who are attending school at night and those who need to review materials on their own time.

This project will also improve environmental education since some lessons we develop will address urban landscape issues such as the drought and the freeze. Faculty in both departments have become a knowledgeable resource to which the community turns for information on environmental and energy issues.

Upon completion of this project, we will be in a position to establish six learning stations which incorporate the videodisc-learning modules for classroom and individualized instruction.

Henry Schott and Judith Donaghey, faculty members in the Biological Sciences and Landscape Horticulture departments, will be the project directors. Rita Haberlin, an instructor in the Peralta District, will assist in planning and organizing the first two programs.
Specific Problems Addressed:
A. Students seeking entrance to one of the health sciences vocational programs must first pass one of the Anatomy-Physiology prerequisite courses. These courses require high quality visual materials of anatomical subjects in order to help students learn to recognize body parts and understand physiological functions. These materials are especially useful for students who have less ability to master abstract concepts, or are unable to easily visualize internal anatomical relationships. Students identified as potential drop-outs, who may have the characteristics just described, will benefit from the nontraditional methods of instruction provided by Toolbook-videodisc programs in anatomy and physiology. These students will be encouraged to make use of the individualized modules through learning contracts.

B. Instruction in Biological Science and Landscape Horticulture is a highly visual experience and incorporates images of every level of magnification, using short video-motion presentations where motion is vital to understanding each process. Image resolution on computer monitors (that we could afford) has been inadequate for presenting the detailed images needed for instruction. The new multi-media videodisc-computer driven programs have the quality and quantity of images needed for our college courses. This project will permit us to use a few commercially available programs with students while we begin production of modules tailored to our specific needs. By using these commercial programs, we will be able to observe students’ learning styles and will identify characteristics in the commercial programs that help visual learners master difficult concepts. These observations will help us avoid pitfalls and other problems when we create programs tailored to our specific educational needs. The commercially prepared programs will also provide a small reservoir of programs to help build interest in videodisc-computer learning.

To better explain how videodisc-computer learning works, we provide this explanation. Each videodisc can store over 50,000 high resolution images. Any desired image can then be accessed and displayed in two or three seconds. These images can be programmed into an orderly presentation by the instructor and made visible to the entire class. Each program also has branching capabilities which can be used to explore related but peripheral subject matter. Students can then use the same programs to study at their own pace. Countless programs can be created using Asymetrix Toolbook software without specialized computer programming knowledge. Some training will be necessary to master the many authoring options and linking procedures available in this software program.

C. To make the Landscape Horticulture Department more relevant and effective in preparing students for employment, the faculty needs new instructional aids with multiple applications. Once these programs are written, videodisc use can be programmed in less time than is now spent assembling needed slides for each presentation. The use of videodiscs is more efficient and provides for greater flexibility during instruction than using slides, since a larger pool of visual information is immediately available.
3. Population To Be Served

Population To Be Served:

Two groups of Merritt College vocational students, will be served by The Toolbook- Videodisc Instructional Improvement Project.

1st Group: The first group I 5 composed of students who have selected a career in the Health Sciences and are meeting their prerequisites for admission to one Of the three programs offered at Merritt College: Associate Degree Nursing, (AND), Vocational Nursing, (VN) and Radiologic Technology,(RT). AND students usually take Biology 20A & 20B while VN and RT students take Biology 24. Students interested in one of the transfer Health Science Programs, such as Medical Technologist, Physical Therapy, or Physicians Assistant, usually take Biology 2 (Anatomy) and Biology 4 (Physiology). Over half of the students in the program are minority students and many are older adults who are seeking to improve their skills and upgrade their positions. All students enrolled in these academic prerequisite courses to vocational health science programs will benefit from this project when the modules are used in lecture-discussion sessions and many will benefit from having these materials available for review and independent study.

Enrollment in these classes has increased dramatically during the past year making it necessary to open two new sections. To meet the expanding request for instruction, the faculty is exploring new and unique individualized instructional programs which encourage students to use learning objectives identified in learning contracts. In the Period from January 20 to February 20, 1991, eighteen students have availed themselves of this contract opportunity to improve their study habits and raise their test results. Toolbook-videodisc programs lend themselves particularly well to the concept of learning contracts and independent study since student use can easily be monitored and the programs are visually interesting and therefore attractive to the students. If this project were in place today, it would serve 480 students per semester preparing for entry into the health sciences.

2nd Group: The second group is composed of 350-400 full- or part-time Landscape Horticulture students. Many of these students are beginning second careers as landscape professionals, such as designers, maintenance gardeners, arborists, contractors, and landscape architects. An increasing number of minority and educationally disadvantaged students are enrolling in this program. Some students become city employees such as gardeners and supervisors, while others work for the East Bay Regional Parks District, local water companies and transportation agencies. Over half the students are women. Two-thirds of the Landscape Horticulture students are enrolled in the night program where field experience is limited. 
In both student Populations, there are many older adults seeking second careers. Many are displaced homemakers. Others are minority employees who are enrolled in night classes.

3rd Group: Another population to be served will be faculty members from Merritt College and faculty from other departments within the Peralta Community College District.

4th Group: Students from other disciplines will benefit from these innovative videodisc learning modules as additional videodiscs and programs become available.
Proposal Objectives:

A. Overall Objective: This project will improve traditional instruction at Merritt College by developing the first computer assisted videodisc learning programs for biological sciences and landscape horticulture. This objective will be accomplished through the following strategy:

1. Select tropics for six programs by consulting with other department members to ensure that they will have wide application.

2. Study student use of commercially produced modules and measure their learning. Use this information to assist us in writing programs which are specifically tailored to our instructional needs.

3. Develop six programs that make use of selected images from the thousands that are stored on a videodisc, and display them on a monitor in conjunction with a computer assisted instruction (CAI) program. Control the videodisc display through the CAI program authored with the Asymetrix Toolbook software.

4. Make use of these programs through the following applications:
   a. They can be used by instructors during regular lecture or discussions to display videodisc images keyed to particular lecture tropics.
   b. They can be used in learning stations which will be established in the Computer Assisted Instructional Center. Students will be guided by the developed programs to reach specific lesson objectives.
   c. Students will use these programs for independent study, individualized self-paced learning, and to conduct research for term papers and other independent learning activities.

B. Specific Objectives: These multi-media programs will be developed and used in departmental curricula for the study of anatomy and physiology in the Biological Sciences and for the study of plant materials by both individual students and in lecture-discussions in Landscape Horticulture. (Note: Only FII funds are considered in calculating personnel costs.)

Objective 1. Establish project personnel structure and supervision by:

1.1 assigning instructors Henry Schott, 525 hours, and Judith Donaghey, 525 hours, each to half time "other assigned time" to work on this project. August 1991 -June 1992. Personnel costs are itemized below.

1.2 arranging compensation for Rita Haberlin, College of Alameda, 13 hours, to provide advice and suggestions in planning the organization of the first two modules. She is an
expert in this area, based on her three years of work with videodiscs. 7-1-91 or as soon as Governor signs the authorization.

1.3 arrange supervision of the project. 8-26-91 to 6-04-92 ($6,250)

Objective 2. Establish two learning stations, one located in the biological Sciences and the other in Landscape Horticulture Department. We will:

2.1 select, order, receive, catalogue, set-up equipment and media software. Equipment: 8-26-91 to 9-30-91 (70 hr. $1564) Software: 8-26-91 to 9-30-91 (50 hr. $1120)

2.2 observe use of equipment in the field and consult with IBM on the use of software. 9-15-91 to 9-30-91 (40 hr. $896)

2.3 learn to use the integrated multi-media videodisc learning units and develop skill in use of software programs. 10-1-91 to 12-23-91 (230 hr. $5154)

Objective 3. Evaluate commercially prepared programs through student testing. We will:

3.1 identify learning objectives in the commercial program and test students to determine program's effectiveness. Use this information to prepare the design of our modules. 10-1-91 to 12-23-91 (50 hr. *$1120)

Objective 4. Develop six videodisc learning programs. We will:

4.1 consult with other faculty members in each department to determine the best programs to develop thereby insuring that the programs have wide application. 10-1-91 to 10-15-91 (10 hr. $224)

4.2 develop two programs using the advice and suggestions of Rita Haberlin. an expert in the use of videodiscs in instruction. 12-1-91 to 2-1-92 (140 hr. $3137)

4.3 test the effectiveness of the programs with students. 2-1-92 to 3-1-92 (30 hr $672)

Objective 5. Improve learning, increase retention, raise educational standards and provide new learning avenues for minority students and for educationally disadvantaged students. We will:

5.1 provide new learning strategies for students in vocational programs in landscape horticulture and for students entering the health sciences. (3-1-92 - and following Years)

5.2 increase retention by 5% in classes that use videodisc learning modules through increased learning of subject matter highly dependent on visual information. (1992-1995 fiscal years)
5.3 raise educational standards by increasing motivation and interest in the biological sciences and in Landscape horticulture. (1992-1995 fiscal Years)

5.4 provide programs that motivate, encourage and reward educationally disadvantaged students. (1992-1995 fiscal years)

5.5 develop programs that can be used in the classroom and as units for independent study and individualized self-paced learning. (1992-1995 fiscal Years)

Objective 6. Interest and motivate other faculty to make use of videodisc learning modules. We will

6.1 hold a videodisc learning workshop during Professional Days for the interested faculty. 4-1-92 (10 hr. $224)

6.2 demonstrate this project to faculty and the community to help them explore new and innovative instructional techniques. 4-15-92 to 3-30-92 (35 hr. $784)

6.3 attend West Coast Educational Technology Conference (Feb. 1992) and NEA National Conference On Educational Technology, (March 1992) to share our ideas and project. ($1200).

6.4 develop a Packet of information for dissemination purposes, listing all materials needed, programs developed and software used in this project. This material will be made available to anyone interested upon request. 3-1-92 to 5-1-92 (55 hr. $1232)

6.5 prepare and submit a final report describing the outcome of the project to the Chancellor’s Office of Educational Standards and Evaluation. 5-1-92 to 6-4-92 (45 hr. $1008)

Objective 7. Evaluate the project and the use of the new videodisc methods. 4-1-92 to 5-1-92 (55 hr. $1232)

Please see details under "Evaluation"
5. Workplan Narrative

Work Statement: Detail (Number refers to objective.)

2. Order needed equipment and software using existing Vocational Education Act funds and State allocated equipment funds and Math Science Division funds as needed. Establish an inventory for the two locations, Science and Landscape Horticulture.

Dates: 8-26-91 to 9-30-91

Budget amount:

- 1100 Personnel $1,669
- 2100 Clerical 300
- 6400 Equipment. Division* Budget 5,000

Personnel: H. Schott and J. Donaghey

Equipment: Two videodisc players similar to (Pioneer LD-V 4200 with remote control and serial interface card, cables, security equipment, & stands $2,744.-, Tax included.) (Two Sony PVM 2030 20" Color Monitors $2,266.- Tax included)


2. Selection and ordering of software.

Dates: 8-26-91 to 9-30-91

Budget amount:

- 1100 Personnel $1,192
- 2100 Clerical 200
- 4302 Media supplies 5,302
- 4200 Other Books (See below for detail) 272

Personnel: H. Schott and J. Donaghey

Materials: Similar or equal to:

- ASYMETRIX TOOLBOOK $798
- BIOSCI II DISC Biosci-02-LS CAV* format 549
- BIOLOGY IBM SET Bioset-02-VS 249
- LIFE CYCLES Lifcyc-01-LS CAV 395
- LIFE CYCLES OF PLANTS Lifpla-01-VS 25
- LIFE CYCLES OF VERTEB. Lifver-01-VA 25
- CELL BIOLOGY Celbio-01-LS CAV 549
- POLLINATION BIO. Polbio-01-LS CAV/CLV 345
- ENCYCLOPEDIA OF LANDSCAPE PLANTS Enclan-01-LS CAV 395
- HERBACEOUS ORNAMENTALSHerorhn-01-LS CAV 175
- EXOTIC PLANTS Exopla-01-LS CAV 225
- OUR ENVIRONMENT Enviro-01-LS CAV 225
- TEACHER'S MANUAL Enviro-01-RB 15
- STUDENT'S MANUAL Enviro-02-RB 15
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<th>Description</th>
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<tr>
<td>BIOTECHNOLOGY Biotec-01-LS</td>
<td></td>
<td>695</td>
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<tr>
<td>VIDKIT II SOFTWARE Vidkit-01-VS</td>
<td></td>
<td>275</td>
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<td>TAX (4955*0.07)</td>
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*Constant Angular Velocity (CAV),
Constant Linear Velocity (CLV)*

4200 DETAIL Books and print materials:
- Ambron: Interactive Multimedia, Microsoft Press: 29
- AV Video Subscription 1 year: 25
- Iuppa: A Practical Guide to Interactive Video: 35
- Educators Handbook for Interactive Videodisc: 45
- Educational Technology: Subscription 1 yr.: 49

Total, tax included: $272

Materials: Office supplies, miscellaneous: 25
- (Detail) Diskette 50 each 2 MB 3.5”: 171
- Computer paper: 40
- Printer Ribbons: 25

(Detail) Total, tax included: $261

Evaluation: The final report will evaluate the quality of the materials used in this project using student and faculty workshop evaluation forms and their summaries.


5205 Conference: $1,200

6.4 Project directors will provide a Packet of information upon request listing all materials needed, programs developed and software used in this project.

Dates: 3-1-92 to 5-1-92

Budget amount: 1100 Personnel: $1,232
2100 Clerical: 550
4304 Other Supplies including postage, office supplies and materials: 50

Personnel: H. Schott and J. Donaghey

Evaluation: The number of requests made for information packets will be tabulated and results included in the final report. 6.5 Prepare and submit final report as required to the Chancellor’s Office of Educational Standards and Evaluation at the end of the funding period describing the outcome of the project.
Dates: 5-1-92 to 6-4-92
**Budget amount:**

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**Personnel:**

H. Schott and J. Donaghey
6. Expected Outcomes

Expected Outcomes of Project Activities in Terms of:

A. Project Objectives: General Objective Outcome.

A. Traditional instruction in Landscape horticulture and in the biological sciences will be improved by this project because it will provide new resources for instruction that can be used by students for independent study and by teachers in a lecture-discussion presentation. The use of these programs will be extended to other faculty in each department because they will be involved in selecting the program topics and will be trained in their use in faculty workshops.

B. Specific Objectives. Activity Outcomes.

1.1 Both instructors have a lot of experience with different types of audiovisual presentations and also experience with computers. Although authoring programs with Asymetrix Toolbook software will require some time to master, no particular difficulty is expected since both are experienced teachers who have prepared other types of audiovisual learning modules.

2.1 The equipment selected and ordered will provide necessary tools for the use of software (see below) and for the demonstration and testing of programs at two sites on the Merritt campus. Because of the diversity of the two student groups to be served, and because the Sciences building and Landscape Horticulture buildings are located at a considerable distance from each other, two work areas will be needed. Selection and ordering of software will produce a listing of available materials that will serve as a resource of videodiscs for other department members. This list will enable the project directors to choose the software and videodiscs needed for the programs.

2.2 Consultation with vendor on the use of software will clarify some of the technical aspects of writing the desired programs.

2.3 After a period of practice and learning, project directors will be sufficiently skilled to effectively use the software and provide guidance to other interested instructors through workshops and demonstrations.

3.1 Students will be recruited from classes in which these programs will be used and, with the help of an instructional aid, they will be asked to use commercially prepared programs and then tested for comprehension and learning effectiveness. The information gained from these test-runs and the observations and comments of the students will be of great help in designing effective programs.
4.2 Rita Haberlin, who is experienced in videodisc use in instruction, will assist with planning and organizing the first set of Programs. This will insure that we begin with a strong, functional program of instruction in our learning modules. Each program will provide students with instruction that has accurate visual information and that branches to other subprograms if a concept is not clear. The learning process will be under the control of the operator, that is, the student when the station is used as an independent learning module, or the teacher when it is used for group presentations.

4.3 Testing students for their knowledge after they have used the new programs, will determine the design and development procedures for additional programs.

5.1 - 5.5 These activities will be realized when the stations are in operation and enough programs have been produced to provide a library of topics for student reinforcement and self study. Students will have additional support in understanding biological and horticultural concepts through the videodisc-computer programs. These interesting programs, which can be demonstrated during lecture, will provide motivation and extensive visual reinforcement to students who are in need of alternative learning strategies. The programs will contribute to student success in these courses and therefore a 5% increase in retention.

6.1-6.2 Through workshops which inform and involve faculty from other departments throughout the Peralta District, the concept of videodisc-computer instruction will become better understood and appreciated. The use of this instructional technology will spread to other areas as learning modules are developed and additional videodiscs become available. Staff development activities are held on Professional Days. The Videodisc Workshops for interested faculty will demonstrate the value of videodisc instructional methodology and inform the other departments of this innovative instructional technique.

6.4 The information packets listing all materials needed, programs developed and software used in this project will provide guidance to other interested Parties, both in the college and in other communities. We will also provide material to publicize the FII grant and the work done at Merritt College.

6.5 Reports of The Toolbook-videodisc Instructional Improvement Project will be a guide to others interested in this area and will also serve to identify problems to be avoided and obstacles to be overcome when using this instructional mode.

7.1 The evaluation of the use of the new videodisc method of instruction will provide valuable information that will be applied to the design of the proposed computer-driven videodisc learning stations contemplated for three locations on the Merritt campus. The difficulty of producing programs will be evaluated as
well. If the model programs are effective, their structure will be adapted to the production of future programs.

B. Impact of the Project:
This project will impact the traditional instructional programs in the biological Sciences and Landscape Horticulture departments at Merritt College.
A. The impact on teaching will be to:
   • significantly improve instruction in biology and horticulture programs statewide by introducing the use of new videodisc technology.
   • enhance the ability of faculty to rapidly produce educational materials involving high resolution video images.
   • improve faculty skills through inservice education.
   • enhance morale and motivation among faculty who have grown accustomed to traditional methods. "
   • increase interest among faculty in exploring new educational technology.
   • significantly improve curriculum development in the biological sciences and horticulture programs through the introduction of the new technology which can be used to improve programs statewide.

B. The impact on student learning will be to:
   • expand opportunities for multi-faceted learning strategies on the Statewide level.
   • significantly increase opportunities for independent study in biological sciences and horticulture.
   • increase opportunities for individualized instruction in biological sciences and horticulture.
   • improve educational materials available for visual learning.
   • improve educational services for new clients and older, working adults through increased resources in horticulture.
   • extend opportunities for students to review materials observed in lecture at their own pace.
   • increase interest and motivation in the study of science subjects.

C. The impact on Merritt College will be to:
   • demonstrate of a new teaching technology pilot project that will attract further funding opportunities.
   • improve the educational standards in the sciences and in Landscape Horticulture.
   • improve vocational education opportunities for evening and daytime students in Landscape Horticulture and in the Health Sciences.
   • improve opportunities for minority students to succeed in completing science and vocational courses.
   • improve environmental education programs in biological sciences and landscape horticulture.
• build recognition in the community that this institution is an innovative and dynamic educational enterprise.

C. Potential for Continued Support After the Expiration of the Grant:

The College and the District are strongly committed to improving instruction and expanding the use of educational technology in the delivery of education to a multicultural society. This commitment is expressed in every revision of the District Educational Plan and in the unit plans for the Science/Mathematics Division. The potential for continued support of this project is great because the commitment has been made to improve and diversify the learning opportunities for students at Merritt College. We are confident that we will meet our primary goal of improving traditional instructional methods.

This pilot project will pave the way for six videodisc learning stations situated at three campus locations so that students will have access to relevant learning modules in the Computer Assisted Instructional Center (CAI) and in the two departments that will have developed learning modules. Two additional stations especially designed to be used in both a laboratory setting and in a lecture-discussion mode will be established. The classroom facilities will improve lecture-discussion presentations and the other stations will provide for individualized instruction and independent learning.

Through its stated objectives, Merritt College is dedicated to Computer Assisted Instruction, involving faculty in grant writing, assisting with increased funding for Landscape Horticulture and the environmental sciences, acquiring additional equipment and improving teaching strategies. One of the major mission statements of the Science and Mathematics Division, which includes the Landscape Horticulture department, focuses on increasing the number of science transfer students and vocational students in science-based occupations, especially those from underrepresented populations. Our goal with this project is to increase retention by 5% and to provide a learning environment in which there will be a 10% increase in the successful completion of courses by underrepresented and other minority students.

D. Potential for Adaptation to Other Institutions or Programs:
Through the staff development workshops, which attract instructors and administrators from other Peralta Colleges, the ideas and programs generated from this grant will be demonstrated beyond the limits of Merritt College. With future development of videodisc learning stations the Potential for growth of this project is very great.
7. Evaluation Plan

Evaluation Plan:
A. The project directors, assisted by other instructors and students, will evaluate all aspects of the programs produced.

B. Evaluation will include the following:
   1. Completed programs will be listed and described in the final report accompanied by evaluation results.
   2. Each program will be assessed through evaluation forms filled out by all users and summary information indicating successes and criticisms of the work completed will be prepared.
   3. The final report will include a summary of student evaluations and faculty workshop evaluations as they relate to the programs developed by the project directors.
   4. The lists of hardware and software involved in each learning module created will be made available to the District and the State along with any appropriate responses to the evaluations submitted.
8. Dissemination Plan

Information for Dissemination:
A. The following materials will be provided to the State for the purpose of dissemination:
   1. A list of prepared programs, accompanied by an explanation of how they were used and their effectiveness.
   2. A list of the equipment used to implement the programs.
   3. A brochure providing information on the Merritt College Science Program and the Landscape Horticulture Program so that other schools may contact us in the future.

Materials will be available, at cost of duplication, to other community colleges throughout the State, as well as to other institutions offering courses which can utilize these materials.

B. In addition we will use local and regional contacts to further the dissemination of information about the grant. We will:
   1. provide articles on the Toolbook-videodisc Instructional Improvement Project to the FII Newsletter.
   2. have the College Information Officer prepare press releases for the local Press.
   3. hold staff development workshops during Professional Days to familiarize Peralta faculty with the videodisc learning process.
   4. send copies of the project abstract to the biology departments often Bay Area community colleges with invitations to visit and review the project.
   5. attend local and national conferences where multi-media and computer-assisted instruction will be discussed.
[NO “BUDGET NARRATIVE” ACCOMPANIES THIS DOCUMENT.]