CHAPTER 10

REQUIREMENTS FOR STAFF & FACILITIES
LEARNING TECHNOLOGIES

The following operations will have a small district staff with larger facilities and support staffs on each of the three campuses.

Instructional computing is a new function. It requires laboratories, lab-classrooms, Smart Classrooms; equipment rooms for servers, patch panels, concentrators, and other networking equipment; technician work and repair areas and telecommunications and electrical wiring and closets; faculty training areas; production areas for multimedia, academic web pages, and classes taught on the Internet; and administrative offices, faculty offices, and conference rooms.

There will be a large general-purpose laboratory on each campus complemented by lab classrooms and specialized laboratories as needed. Moreno Valley and Norco recently installed such labs as part of their secondary effects funding. On the City Campus, the first floor of the Business building serves this function on an interim basis. Available space is limited and will remain so until the new Library – Learning Resources Center (LLRC) is constructed in 2001. At that time, the LLRC will have a computer commons, open labs, and learning resources labs. Instructor assisted labs will be housed on the third floor of the present library building supported by the Office of Learning Technologies. Teaching (computer) labs and other specialized laboratories will be housed adjacent to their academic departments.

Distance Learning is an area projected for rapid growth. It uses communication technologies to reach learners who cannot attend on-campus classes at the time they are scheduled, or who for reasons of time and distance do not have access to a college education. Distance learning includes: 1) Internet based programs developed in conjunction with the instructional computing unit; 2) television based programs that broadcast on-campus classes and/or combine classes using two-way interactive video; and 3) import Internet and/or television based classes from other colleges and educational providers.

Distance learning requires studio-classrooms for program origination and teleconferencing, and smart (media) classrooms for reception of live and recorded courses from other organizations. Studio classrooms will be supported by camera control rooms and a master control center for recording, playback, and routing television signals to broadcast transmitters, cable companies, telephone companies, and Internet Service providers. There will be lesson preparation rooms, rehearsal rooms, administrative offices, faculty offices, conference rooms, and storage areas for classroom sets, props, backgrounds, and equipment. All classrooms will have conference telephones and digital video projection displays.

Television and Internet classes will be broadcast from the second floor of the present library building when the new LLRC building is constructed. In the interim, videotaped classes will continue to be produced in the Telecommunications TV studio. One classroom in the Instructional Media Center has been converted for interactive video and teleconferencing.

Instructional Media Center (IMC) will provide production services, media distribution, campus-wide classroom support, technical maintenance, and support for special campus events. The media library, media catalog, and the learning resource center are designated as part of the new LLRC. Production services will be expanded to provide digital imaging, graphic, photographic and on-location video support for Internet, multimedia and television courses and presentations, including editing and duplication of video and digital media.

Media distribution will be increasingly electronic and on-demand. Since the media library catalog and collection is projected to become part of the LLRC, electronic distribution will be a joint IMC-LLRC activity. Classrooms, distance learning classes, and library carrels on all three campuses will be supported from the City Campus facility. IMC technicians will be responsible for operation and maintenance of the distribution system in addition to supporting smart classrooms, regular classrooms, and special campus events. The IMC will continue its role of training faculty and students to use audiovisual and television equipment.

The IMC is housed on the first floor of the present library building on the City Campus. It will require renovation to support new and changed operations including new production areas for digital imaging, digital audio and video production, and digital editing to support on-campus and distance learning. Facilities will include preview and presentation rooms, administrative offices, faculty offices, conference rooms, and storage areas.

Faculty Training and Production Lab is a new function. It is designed to assist faculty to learn to use computers in instruction, preview and select off-the-shelf courseware, and develop lessons and courses in interactive multimedia formats for distribution via CD-ROM and Internet. On the City Campus, this lab will be housed on the first floor of the present library building. It will begin operations in January 1998. Sites are being identified to replicate this function at Norco and Moreno Valley.

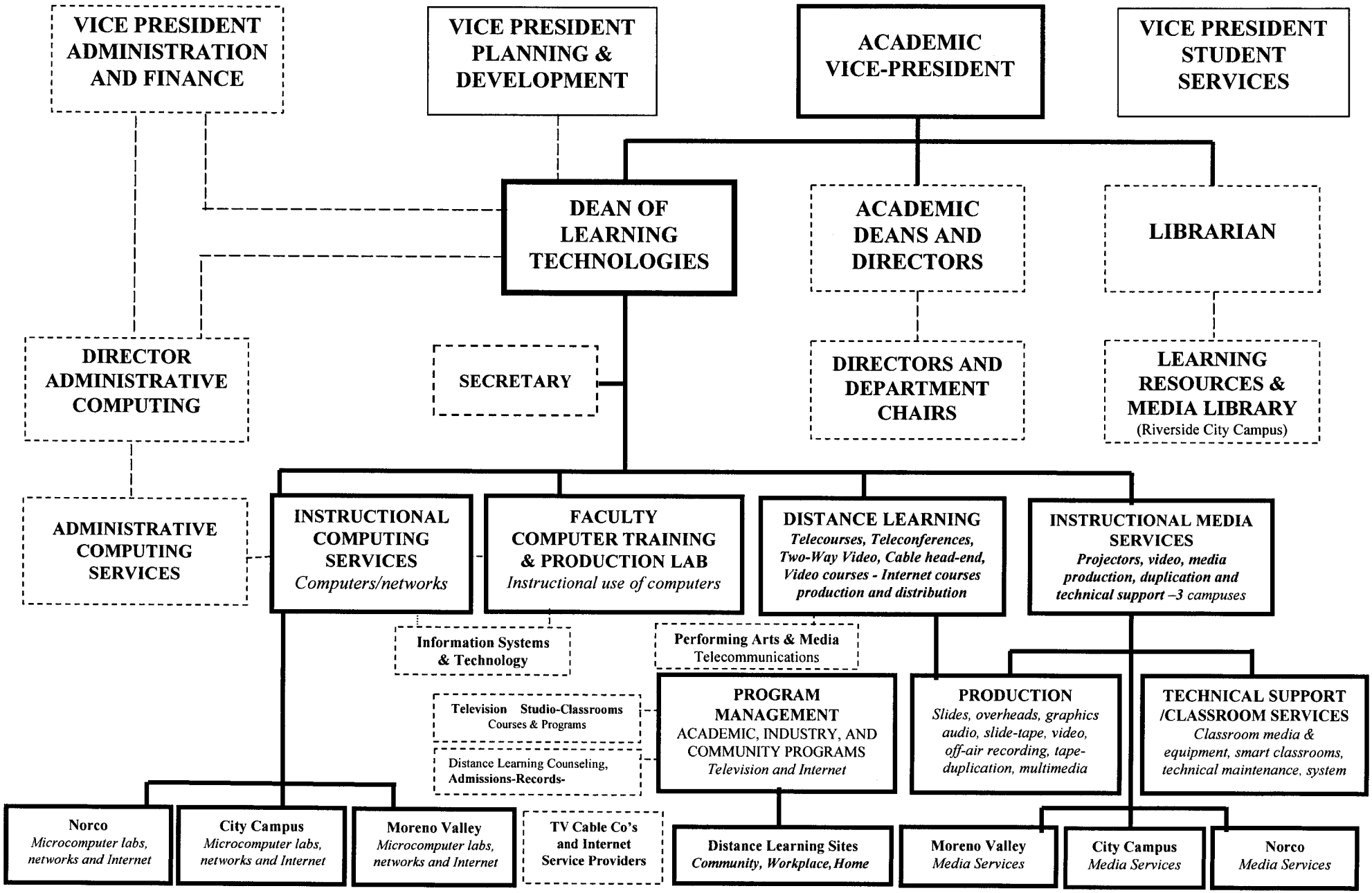
OVERALL PERSONNEL REQUIREMENTS

1. Overview of Current Personnel District-wide and by Campus

The Learning Technologies division came into existence on March 1, 1997 with the appointment of a Dean of Learning Technologies, Donald G. Perrin Ph.D. He was tasked to develop a technology plan and initiate laboratories and services for the district and its three campuses. A preliminary plan was submitted to the RCCD Management Retreat on July 31, 1997.

A Tentative Plan of Organization has been prepared for the Learning Technologies that includes four operating units – Instructional Computing, Faculty Training and Production Lab, Distance Learning, and a reorganized Instructional Media Center based on plans for the new Library – Learning Resources Center.

Proposed Plan of Organization for Learning Technologies



In September, the Academic Senate combined its technology related committees to study the report, make recommendations, and facilitate early implementation.

1.1. **Current personnel**. The Dean is supported by 1.0 Secretary, Emily Deitrich. Distance Learning has 0.4 position staffed by Sharon McConnell. The Instructional Media Center (IMC) has five full time positions – Manager, Henry Bravo; Media Clerk, Beck Soto; Instructional Media Technicians, Armando Castro and Gustavo Sequro; and Instructional Media Assistants, Harry Petty and Michael Prosser. The IMC was designated to report to the Dean in June, 1997. In September 1997, Computer Laboratory Coordinator Mark Oliver was assigned to the Dean of Learning Technologies to initiate a separate unit for instructional computing (as compared to computing support for administrative functions of the District). This is a District Level position responsible for planning, installation and maintenance of servers, networks, and computer laboratories to support instructional programs, install and maintain hardware and software, provide internet support, and manage and train technical support and lab aides for instructional laboratories and instructional units on each campus.

1.2. Anticipated or already scheduled personnel additions. An instructor position for faculty training and three full-time technicians to support instructional computer labs were requested in the 1997-98 budget. One technician will be assigned to each campus to support instructional labs. All of these positions are awaiting funding.

Instructional Computing. Most areas of instruction will use computers and the Internet. It will be increasingly difficult for students in most disciplines to get jobs without computer literacy and Internet skills. It is therefore a matter of some urgency to provide the necessary computer facilities and courses. Instructional Computing is responsible for development of infrastructure and services.
Faculty Training and Production Lab. This department will provide a non-threatening environment where faculty and staff can learn to use and experiment with computers for instruction. It will provide the opportunity to hone computer skills and develop computer related instructional materials involving word processing, desktop publishing, databases and spreadsheets, computer graphics, slide presentations, animations, digital audio and video, interactive multimedia, and web pages. The lab will be staffed by one district level instructor, a lab manager, and lab aides. Assistance will be available to faculty at all times during regular business hours. Faculty and faculty groups will be given 24-hour and 7-day access when required.

Distance Learning. At this time, distance learning is based primarily on videotaped lessons from the Community College Consortium, the Annenberg Foundation, Miami-Dade and Dallas Community College District. Each video course is complemented by five three-hour sessions conducted live on campus. The Coordinator sets up class times and instructors in conjunction with teaching departments, provides schedules and class data for the catalog, coordinates duplication and distribution of tapes and broadcast schedules to three local cable operators, and plans future improvement and expansion of distance learning services.

Instructional Media Center. The IMC supports classroom operations on all campuses with projectors, television, audio and video players, easels, public address systems, and other audiovisual equipment as appropriate. The IMC provides production and duplication services for graphics, audio and video. The IMC currently provides technical support for two-way interactive video. The IMC manages a video library and catalog that is scheduled to become part of the new LLRC in 2001 and a learning resources center that is also scheduled to be part of the LLRC.

1.3 **Projected growth**. Personnel levels will be based on priorities of the college and funding. For example, faculty training is top priority to ensure effective use of computer laboratories and networks. A needs assessment will indicate the level support needed. Some personnel requirement will be formula driven. For example, one technician is needed for each 300 networked computers to ensure an acceptable quality of service.

There is a relationship between equipment and personnel funding. An interactive computer model was generated using Excel to determine equipment and support costs for computer labs. The goal was projected to have one computer for every ***four*** Full Time Equivalent Students (FTES) within five years. The 4:1 ratio was chosen because this is the goal of K-12 schools in the State of California. Five years was chosen because this is the life of a computer before obsolescence. 20% of the computer inventory will need to be replaced each year to ensure acceptable lab operation.

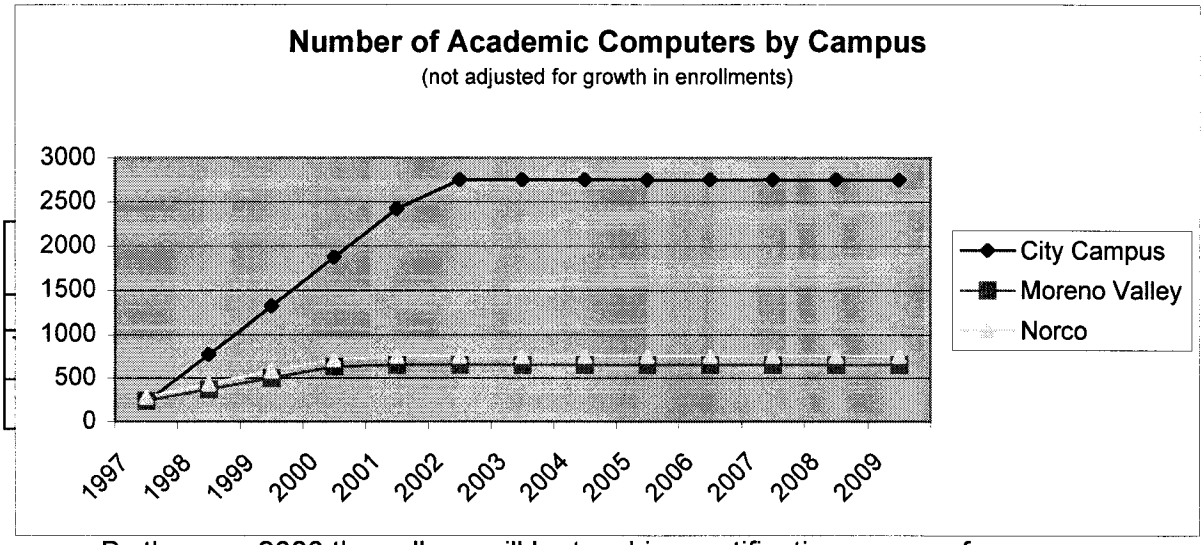
The models presented below do not account for increase in the student population. The first part of the model is to establish the projected inventory. By eliminating computers already obsolete, the first five years for city campus, and three years for Moreno Valley and Norco, are needed to build the inventory base. Beyond this point the annual purchase is equal to the number of computers removed from inventory. Growth can be expected on all campuses, and will result in a proportional increase in the number of computers listed below.

Number of Computers to Achieve a Computer:FTES Ratio of 1:4.

Year	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	Annual Purchase
City Campus	220	770	1320	1870	2420	2750	2750	2750	2750	2750	2750	2750	2750	550
Moreno Valley	240	370	500	630	650	650	650	650	650	650	650	650	650	130
Norco	280	430	580	710	750	750	750	750	750	750	750	750	750	150
Total Inv.	740	1570	2400	3210	3820	4150	4150	4150	4150	4150	4150	4150	4150	830

RCCD is moving from support of an inventory of 740 instructional computers in 1997 to 4,150 in the year 2002. A graph of the above table illustrates the time and number of computers required to achieve the desired Computer to FTES

ratio. Whether available budgets can sustain this rate of growth has yet to be explored.



By the year 2000 the college will be teaching certification courses for troubleshooting and maintenance of computer hardware, software and networks. At this time expansion of the technician pool can be accomplished using interns from the certification program supported by RCCD technicians and instructors.

For lab aides, economies require fewer and larger labs. This necessitates construction of new buildings where classrooms are located on the periphery of a large computer commons. This may not be possible for specialized laboratories that need to be located in close proximity to related teaching classrooms and laboratories.

1.4 **Cost of Computer Lab Support Personnel**. 1997 Personnel cost at $45,000 for a hardware, software and network technician, and $10,00 per hour for lab aides, is:

2 X $45,000 + 4 X 2000 X $10 = $ 170,000.

In the year 2002, lab personnel cost would be:

14 X $45,000 + 28 X 2000 X $10 = $1,190,000.

Use of interns as proposed above would reduce year 2002 cost to approximately one million dollars. Consolidation of laboratories would further reduce cost.

1.5 Cost of Installed Computers. A cost model was created as part of the growth model using Excel. Fields were connected with formulas so that annual number of computers purchased per campus and computer cost and related cost could be adjusted based on different scenarios. It showed that there were fixed and variable costs that were at least as great as the price of the computer. As a result, reduction in computer price did not reduce overall cost as much as was initially expected.

Cost of Installed Computers			
Purchase Price per Pentium computer	$3,106	Total annual cost for Pentiums	$2,577,980
Specialized computer equipment (Mac, Silicon Graphics, etc) calculated at 5% number of Pentiums purchased and 10% of cost			$257,798
Network & server cost per computer	1000	Total network and servers	$830,000
Electrical wiring	100	Total electrical	$83,000
Software and licenses	500	Total software and licenses	$415,000
Internet Services	150	Total Internet services	$124,500
Faculty Training & Production Lab	350	Total faculty training / production	$319,550
Furniture and installation	250	Total installation cost	$207,500
		Annual total	$4,815,328

As of October 1997, the cost of a Pentium II 300 Mhz computer equipped to RCCD bid specification for instructional computers was $3,105. The installed cost after adding the wiring, servers, network and furniture was $5,455 – $2,350 more. The cost of training technicians, instructors and students should be added to the above cost.

2. **Personnel and Staff Development – Riverside City Campus** 2.1.

October 1997

Instructional Computing	1.0	Technician (not funded)
	3.0	Lab aides (not funded)
Distance Learning	0.0	
Faculty Lab	1.5	Lab Aides (not funded)
Instructional Media Center	1.0	Media Clerk
	2.0	Instructional Media Technician
	2.0	Instructional Media Assistants

Five year projection – year 2002:

Instructional Computing	1.0	Lab manager
	4.0	Technician
	16.0	Interns
	12.0	Lab aides
Distance Learning	1.0	Production Manager (Television)
	1.0	Television Technician
	10.0	Student Camera Operators
	1.0	Clerical
	1.0	Production Manager (Internet)
	2.0	Instructional Designer
	10.0	Student Web Page Designers
	1.0	Programmer/Technician
	1.0	Coordinator of Community programs
	1.0	Clerical
Faculty Training / Production Labs	1.0	Lab Manager
	5.0	Lab Aides
Instructional Media Center	1.0	Media Clerk
	2.0	Graphic artist
	2.0	Instructional Media Technician

2.0 Instructional Media Assistants

2.2 ***Overall summary description:*** In 1997, Instructional computing is in crisis mode awaiting funding of technician positions. Equipment is in the process of being installed and tested even as classes are beginning. Hopefully this is a temporary situation.

Labs, equipment, and personnel are very limited on the city campus. With favorable budgets, this condition can be corrected in two to three years. Major effort must be given to getting the fullest possible utilization out of this scarce resource.

Space is a serious problem. Operation and maintenance is greatly simplified where equipment is concentrated in a few large laboratories. Such spaces do not exist on the City Campus. The nearest approximation is the Computer and Information Science labs in the Business Building, and the computer labs operated by the English Department and Writing Center.

A full time position is needed to develop Distance Learning. Funds are needed for networks, Internet connections, and distance learning classroom-studios and teleconferencing rooms. A space has been identified in the Instructional Media Center for the Faculty Computer Training and Production Facility.

Many present needs cannot be resolved until construction of the new LLRC in 2001. Collaborative use of resources will simplify the growth and transitions that must occur in the intervening period.

3. Personnel and Staff Development – Moreno Valley Campus3.1.

October 1997

Instructional Computing Services	1.0 Technician (not funded)
	3.0 Lab aides (not funded)
Distance Learning	0.0
Faculty Lab	0.0
Instructional Media Center	1.0 Media Technician

Five year projection:

Instructional Computing	1.0 Lab Manager
	3.0 Technician
	8.0 Interns
	10.0 Lab aides
Distance Learning	1.0 Technician
	1.0 Clerical
	1.0 Coordinator of Medical programs
Faculty Training / Production Labs	1.0 Lab Manager
	3.0 Lab Aides
Instructional Media Center	1.0 Media Clerk
	1.0 Instructional Media Technician

3.2. ***Overall summary description:*** Technicians and lab aides are needed immediately to support installation and operation of the new general purpose lab in the Science building, and to properly maintain the other computer laboratories on the campus.

Continued growth of the Moreno Valley campus and programs ensures resources to support orderly growth as proposed here. The specialization in medial technology should provide a resource for distance learning in the State of California, and it is suggested that, in addition to the regular distance learning courses via television and Internet, that Moreno Valley originate distance learning courses in medial technology.

4. Personnel and Staff Development Identified by Norco Campus

4.1. October 1997

Instructional Computing Services	1.0	Technician (not funded)
	3.0	Lab Aides (not funded)
Distance Learning	0.0	
Faculty Lab	0.0	
Instructional Media Center	1.0	Hourly Classified

Five year projection – year 2002:

Instructional Computing	3.0	Technician
	8.0	Interns
	10.0	Lab aides
Distance Learning	2.0	Technician
	1.0	Clerical
	1.0	Coordinator of Engineering programs
Faculty Training / Production Labs	1.0	Lab Manager
	3.0	Lab Aides
Instructional Media Center	1.0	Media Clerk
	1.0	Instructional Media Technician
	1.0	Instructional Media Assistant

4.2. **Overall summary description:** Technicians and lab aides are needed immediately to support installation and operation of the new general purpose lab in the Humanities building, and to properly maintain the other computer laboratories on the campus.

Continued growth of the Norco campus and programs ensures resources to support orderly growth as proposed here. The specialization in engineering, computer science and multimedia should provide a resource for distance learning in the State of California. It is suggested that, in addition to the regular distance learning courses via television and Internet, that Norco originate distance learning courses in engineering, computer science, megatronics, and related technologies.

5. Personnel and Staff Development – District Level5.1. **October 1997**

Division of Learning Technologies	1.0	Dean
	1.0	Secretary to the Dean

Instructional Computing Services	1.0	Computer Laboratory Coordinator
Distance Learning	0.4	Distance Learning Coordinator
Faculty Lab	1.0	Instructor(not funded)
Instructional Media Center	1.0	Manager

All of these positions are located on the City Campus and travel to Norco and Moreno Valley based on need.

Five year projection – year 2002:

Division of Learning Technologies	1.0	Dean
	1.0	Administrative Assistant
	1.0	Grants/Proposal Writer
	1.0	Secretary
Instructional Computing Services	1.0	Computer Laboratory Coordinator
	1.0	Network Engineer
	1.0	Silicon Valley Partners Liaison
Distance Learning	1.0	Distance Learning Coordinator
	1.0	Telecommunications Engineer
	1.0	Program Specialist
	1.0	Clerk
Faculty Lab	2.0	Instructor
Instructional Media Center	1.0	Media Coordinator
	1.0	Media Clerk

It is expected that district staff will play a significant role in improving teaching and learning through technology. It will be responsible for district wide services such as computer and television networks, and district wide programs such as distance learning. It will be responsible for long term planning, proposal writing, partnerships, identifying and obtaining new sources of state and non-state funds, and optimizing support for technology related programs throughout the District.