

General Assignment Classroom Instructional Technology Annual Report Fall 2000

Introduction

OID Classroom Services supports innovation, enhancement and improvement in instruction. Specifically, we provide:

- subsidized audio-visual equipment for regularly scheduled undergraduate and graduate (non-professional school) classes
- classroom technology consultation, design and media equipment maintenance
- support, training and troubleshooting in operating equipment
- research and development in instructional technology.

These services are also available for non-subsidized events on a recharge basis.

This report is concerned with general assignment classrooms. General Assignment classrooms are classrooms scheduled by the Registrar's Office and available at no cost for any academic department's regularly scheduled courses. These are the classrooms served by the Office of Instructional Development. On the other hand, departmental classrooms are scheduled by individual academic departments. Departmental classrooms are equipped and maintained by the department that oversees their use.

All General Assignment classrooms are equipped with overhead projectors and 83% of them have video playback capability (i.e., Monitor/VCR combinations or video projectors). In a sense, then, all UCLA GA classrooms are media classrooms, although there are only 44 with permanently-installed media equipment.

OID has traditionally focused on equipping large classrooms and auditoriums with permanently-installed equipment, but faculty feedback led us to develop a model for installing equipment in smaller classrooms as well. As of Fall 2000 there are seven of these on campus, with seating capacities ranging from 30 – 52.

Small media classrooms are equipped with permanently-installed data projectors, and enhanced sound systems. Beginning this year, they also feature installed computers for the instructor. We have identified over 70 GA classrooms that could be similarly equipped.

"[Media Systems Design] came to the department on three separate occasions and made recommendations which have greatly improved the experience of attending lectures in this space. Your office is a valued resource."

Sylvia Lavin, Architecture



Small Media Classroom
(Rolfe 2134)

Standard media classrooms and auditoriums provide instructors with a broad array of permanently-installed equipment including a computer, data and video projection, video tape, DVD playback, and dual 35mm slide projection. Additionally, public address sound systems, 16mm film projectors, cassette tape players, laser disc players and CD players are included where appropriate to accommodate room size and/or special teaching requirements.

There are 37 standard media classrooms and auditoriums on campus, with seating capacities ranging from 45 – 419. There are currently 17 remaining GA classrooms on campus that could be converted into standard media classrooms.



Media Auditorium
(Rolfe 1200)

Completed Projects

Counting both permanently-installed and long-term deployment, UCLA classrooms are increasingly well-equipped:

- 100% of general assignment classrooms have overhead projectors
- 83% have video playback equipment (154/187)
- 68% have Internet access (127/187)
- 41% have slide projection (76/187)
- 21% have installed data projectors (41/187)

INSTALLED MEDIA SYSTEMS IN GENERAL ASSIGNMENT CLASSROOMS (GACs)

- During Summer 2000, Media Systems Design upgraded Math Sciences 4000A to a Standard Media Classroom, installing a new data projector and a computer interface. Math Sciences 6229 was turned into a Small Media Classroom, with an installed Classroom Computer and a data projector. The Classroom Network was installed in all 19 Math Sciences classrooms.
- A SmartBoard™ was installed in Life Sciences 4127, along with a computer and VHS player, upgrading this room to a Standard Media Classroom.
- This year we upgraded Dodd 175 to a Standard Media Classroom.
- The Instructional Media Lab under floor wiring was upgraded by Media Systems Design, and individual carrel monitors were replaced.
- In a complicated project requiring back-engineering, the slide projector interface we use was redesigned for compatibility with new slide projectors.

Although the fiscal year runs from July – June, most of our classroom upgrade work occurs during the summer, and we strive to have new systems in place by the start of each fall quarter. For this reason, this report includes work done during summer 2000, which would otherwise belong in a 2000-2001 fiscal year annual report.

Several smaller projects were undertaken as well, improving instructional technology in classrooms in Knudsen Hall, Bunche Hall, and Franz Hall.

DEPLOYED MEDIA SYSTEMS IN GACs

We have found that strategic deployment of certain types of mobile equipment can be an effective way to serve our clients in rooms that have no permanently-installed equipment.

To be compatible with permanent deployment in a classroom (i.e.,

Permanently-installed:
Media equipment that is installed in a classroom and is not removable.

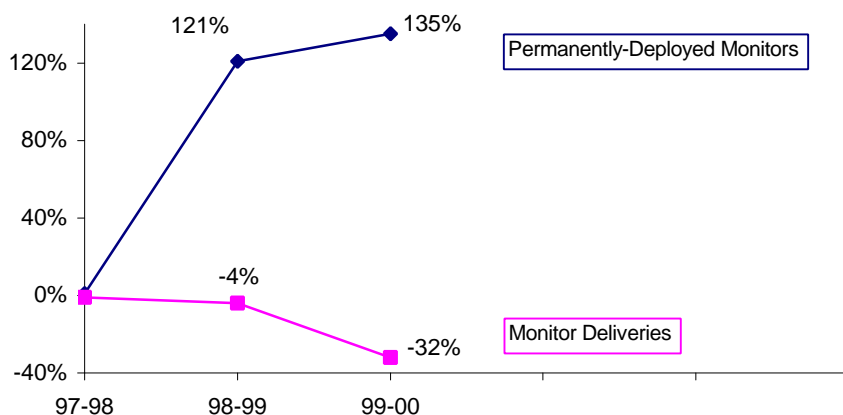
equipment that remains in the classroom throughout the quarter), equipment must be relatively inexpensive, easy to secure against theft, and represent a consumer technology that is already ubiquitous, such as overhead projectors, monitors, VCRs, and slide projectors.

For example, in 1998-1999, there were 95 general assignment classrooms on campus with permanently-deployed monitors. However, AVS made 1,859 monitor deliveries that year to classrooms without permanently-deployed monitors. By analyzing usage patterns and permanently deploying just 13 more monitors in strategic locations, the 1999-2000 delivery total was 1,256, a 32% drop.

Permanently-deployed:
Media equipment that is secured to a stand in a classroom and is not easily removable. Such equipment typically remains in the classroom for the entire quarter.

Full-Day deployment:
The practice of delivering and setting up media equipment in a classroom the night before it is needed, and then removing it the following night.

Deliveries:
Media equipment that is delivered just prior to class and removed just after class.



By placing just 14% more monitors in carefully selected classrooms last year we were able to cut monitor deliveries by 32%.

Permanent deployment of media equipment enables us to meet service demands and improve access while saving on labor charges that would otherwise be incurred.

INSTRUCTIONAL TECHNOLOGY SUPPORT

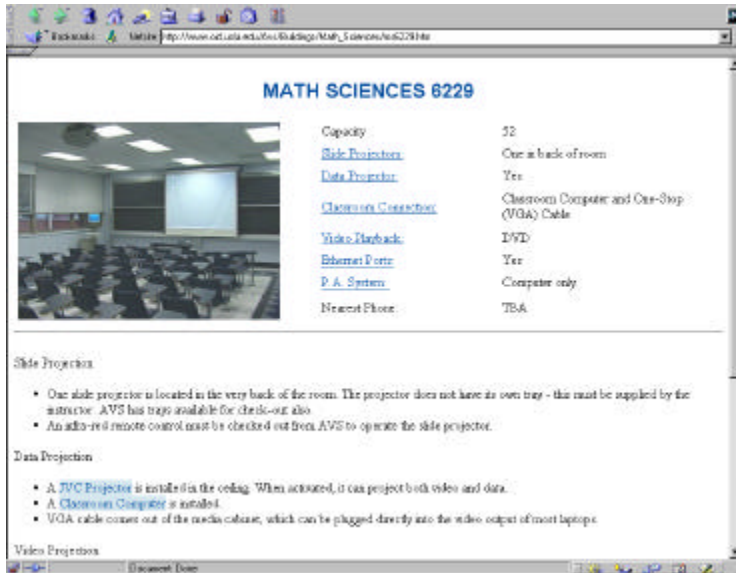
Audio Visual Services provides training, documentation and troubleshooting support for instructors using both installed and mobile instructional technology in general assignment classrooms.

This year AVS held two Open House information sessions. The first, in February of this year, was held in one of the new Small Media Classrooms in Rolfe Hall, and featured a prototype of the new Classroom Computer. Faculty and support staff were invited to learn about the range of services offered by AVS. The second Open House, held for departmental contacts who interact on a regular basis with AVS, featured the new AVS web site, which contains comprehensive and detailed information about media classrooms and equipment.



The OID Classroom Computer

- Small footprint
- Adjustable
- ADA-compliant



www.oid.ucla.edu/Avs/

"You and your staff were extremely helpful during the entire three day event. The quality of the videotapes and audiotapes have been excellent. I look forward to working with your department in the near and far future."

Ron Dietel, National Center for Research on Evaluation, Standards, and Student Testing

The AVS web site has been transformed into a rich information resource on classroom technology. Users can consult the web site to gain detailed knowledge of the capabilities of individual classrooms, find out which classrooms have certain types of equipment, review policies and rates, and (later this year) view how-to guides on the operation of instructional media equipment.

Media Systems Maintenance spent over 1,800 hours last year performing preventive maintenance and repairs on installed and deployed equipment.

TECHNOLOGY CONSULTATION

Classroom Services Staff (Media Systems Design and AVS) welcome and are always available to consult with campus departments regarding their instructional technology needs. This year, our client list included Astronomy, Biology, Center for Medical and Health Sciences, Freud Playhouse, the Hammer Museum, the Institute for Pure and Applied Mathematics, the Institute of Archeology, Jules Stein, Life Sciences, Marina Aquatic Center, Microbiology and Immunology, the School of Engineering and Applied Sciences, the School of Public Policy and Social Research, Sociology, and the UC Police Department.

Our Media Systems Design team provides expertise years in advance to help design media classrooms in new buildings and buildings scheduled for renovation. This year's consultations include:

- Court of Sciences Replacement Instructional Center (scheduled to open Summer 2002)

- Broad Hall (formerly Dickson Hall; scheduled for renovation Summer 2001 – Spring 2003)
- Haines Hall (scheduled to open Fall 2001)
- Kaufman Hall (formerly Dance, scheduled for renovation Summer 2001 – Spring 2003)
- Kinsey Hall (scheduled for renovation Summer 2002 – Summer 2004)
- Physics and Astronomy Building (scheduled to open Summer 2003)

NON-SUBSIDIZED ACTIVITIES

Classroom Services recharge projects included:

Media Systems Design:

- College Library Instructional Computing Commons (CLICC) media system upgrades
- Facilities Conference Room design and installation
- Bridges Theatre upgrade design
- YRL media room upgrade design

"I can't tell you how much it means to be able to completely depend on ... AV support for our Seaborg Symposiums every year."

Betty Yeager, Chemistry and Biochemistry

AVS:

- Summer Session instructional technology services
- University Extension instructional technology services

Media Systems Maintenance:

- Repair and maintenance services for the Alumni Association, the Armand Hammer Museum, the Ashe Center, Biological Chemistry, CLICC, Cultural and Recreational Affairs, the School of Dentistry, Earth and Space Sciences, the Family Health Center, the Fowler Museum, the Graduate School of Education and Information Science, the Jules Stein Eye Institute, the Medical School, the Music Library, Neurosurgery, the Neuropsychiatric Institute, Nursing, the Office of Residential Life, the Office for Students with Disabilities, Pharmacology, and the University Library

Research & Development

One of our most important functions is to maintain awareness of new and emerging technologies so that we can evaluate them for their efficacy in classroom use. The following are some of the technologies we assessed this year and our findings. Faculty feedback is crucial in determining which systems to acquire, once we have determined that the technology is reliable and can be integrated into existing services.

WIRELESS TECHNOLOGY

Wireless technology, as represented by the 802.11b specification, has acceptable throughput (11Mbps) but the limited number of total simultaneous users restricts its classroom application, at least for the present. Security concerns need to be addressed as well. We are currently exploring the possibility of creating a mobile wireless network station; a cart with laptops and a wireless access point which could be set up just prior to class, then taken down at the end of class.



Datavision-Prologix/IBM
MobileSchool
Wireless Network Cart

TELECONFERENCE OVER IP

This year we evaluated the Sony Contact™ Videoconferencing system, which enables teleconferencing over IP networks. This is a standards-based product which works well and is relatively inexpensive. Its use would be as a mobile distance learning system, which could be set up prior to and removed at the end of a class. Although this device could work well for teleconferencing on campus, limited bandwidth elsewhere makes the use of this device for off-campus applications problematic. We will continue to track this technology.



Sony Contact™ Videoconferencing
System

JVC D-ILA PROJECTORS

We have decided to adopt this core technology for future installations. The brighter (2K and 4K lumen) extensions of the D-ILA perform well and will meet future needs in the classroom, enabling clear projection of images even in the presence of a great deal of ambient light for note-taking.



JVC D-ILA Projector

INFRARED HEARING-ASSIST SYSTEMS

As mandated by federal regulations, OID installs infrared hearing-assist systems in all general assignment classrooms that undergo renovations affecting audio systems. These systems route all amplified and projected audio through an infrared transmitter, which is then receivable through special headsets. In the past all IR hardware was available from only a single manufacturer. Delivery problems and configuration issues are driving us to investigate new products which meet the ISO standard for IR audio delivery.

SMART BOARD

SMART Board™ technology turns a white board into both a recording device and a touch screen. Anything drawn on the white board can be saved as a file to be distributed electronically to students. Computer images with interactive controls (such as Web pages) can be projected on a SMART Board™ and then controlled by touching the controls projected on the device. After obtaining a grant to offset the cost, we installed such a device in Life Sciences 4127 this year. Faculty feedback will guide us in deciding whether to install more.



Life Sciences 4127

DIRECTIONAL-ARRAY SPEAKER SYSTEMS

Most instructors who have used microphones in large classrooms will have noticed that as volume goes up, the risk of feedback also goes up. We are constantly looking for solutions to this problem. New large classrooms in the Court of Sciences Replacement Instructional Center and Physics & Astronomy and the refurbished Haines 39 will incorporate a central speaker cluster for voice reinforcement rather than the multiple ceiling speakers used in the past. This change will result in greater gain before feedback, simpler installation, and many fewer items to maintain.

COMPUTER DVD PLAYBACK

In order to use installed classroom computers for DVD playback the quality of video board and amount of video ram required to play DVDs without distortion was researched. Use of classroom computers for DVD playback will eliminate the need to buy DVD players in those classrooms.

"... there are a lot of these little animations out on the web that you can download and use. So you can show a little animation ... on how Watson and Crick determined the double-helix structure of DNA. ... It's just a way of keeping [students] engaged in the lecture experience."

Ralph Robinson, Microbiology, Immunology and Molecular Genetics

PORTABLE COMPUTER INTERFACES

This year we installed a prototype EZ pix computer interface on an A/V cart in Life Sciences 2147. The new configuration will simplify the set-up of computers in General Assignment classrooms that do not have installed interfaces. As time and funding permit, we intend to install more of these.

DIGITAL VIDEO INTERFACE

At this time there are two competing standards for a digital replacement for the analog "VGA" computer video output, and no video/data projector manufacturers have implemented the technology. Another problem is that cable runs for this technology are limited to 3 meters, but we require runs of 25 – 30 feet. Digital video interface will eventually prove useful when the maximum distance limitation on cable runs is lengthened and projector manufacturers begin to support it, and we are keeping an eye on this technology.

"Generally the laptop/digital projector combination works extremely well, and has revolutionized my course preparation."

Geoffrey Miller, Communication
Studies/Speech

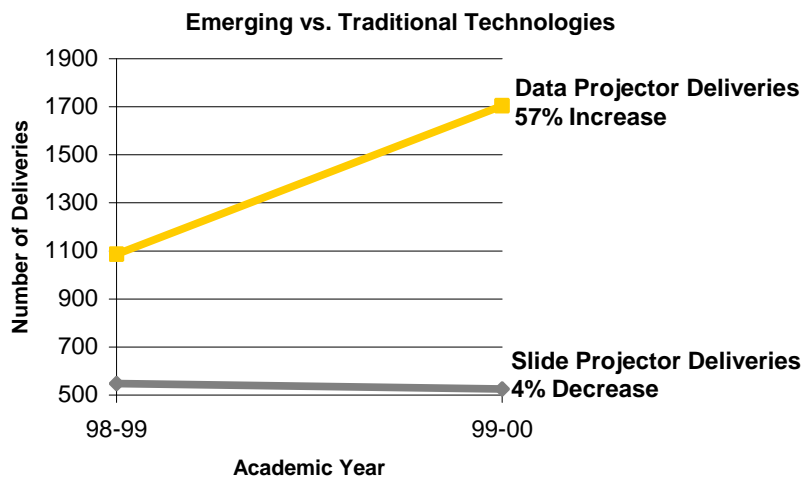
Funding

In order to continue equipping general assignment classrooms with instructional technology, we must overcome several challenges.

THE ABIDING EFFECT OF OLDER TECHNOLOGIES

We often think of newer technologies as replacements for older ones, but instructors invest a great deal of thought, time and effort into integrating technology into instruction, and they are understandably reluctant to lose their investment by switching to emerging technologies.

Instead of newer technologies replacing older ones, they are added to the growing list of technological services we must continue to provide and support.



For example, portable data projector use increased 57% this year. At the same time, demand for older technologies, such as slide projectors, remained almost steady.

THE OFTEN-OVERLOOKED COSTS OF SUPPORT

Fiscal planners in recent years have become familiar with the fact that the “total cost of ownership” of technology is much higher than the purchase price. This is because there are costs associated with supporting and maintaining equipment that are not reflected in the purchase price.

BOOMING CAMPUS CONSTRUCTION

A remarkable amount of construction (both renovation and new) is planned during the next several years, much of it involving teaching spaces. The table on the right outlines the projects we believe are the minimum that should be undertaken if funding is provided.

It is crucial for OID to install media classrooms during planned construction periods for two reasons.

First, the costs of installing media systems in rooms undergoing construction are lower because walls, ceilings and furnishings do not have to be demolished or removed.

Second, it is becoming increasingly difficult to gain access to classrooms for media installations. Construction removes classrooms from the Registrar’s inventory, which is crucial now when enrollment is escalating steeply and Summer Session is fully enrolled, resulting in every general assignment classroom being scheduled for classes virtually around the clock all year long.

Minimal Projected Projects

FY 00-01 - \$676,656

Life Sci: 1 Standard Upgrade
Math Sci: 1 Standard Upgrade
 1 Small Clsrm
Haines: 1 Auditorium
 1 Standard Clsrm
 1 Standard Upgrade

FY 01-02 - \$449,103

Boelter: 1 Small Clsrm
COSRIC: 1 Auditorium
 1 Standard Clsrm
 1 Small Clsrm

FY 02-03 - \$418,303

P & A: 1 Auditorium
 1 Standard Clsrm
 1 Standard Upgrade

FY 03-04 - \$532,352

Kaufman: 1 Standard Clsrm
 1 Small Clsrm
Broad: 1 Auditorium
 1 Standard Clsrm

FY 04-05 - \$677,201

Kinsey: 1 Auditorium
 3 Standard Clsrms
 2 Small Clsrms

THE COSTS OF NOT REPLACING AGING EQUIPMENT

UCLA faculty view reliability as the most important factor in using instructional technologies. The costs of not replacing aging equipment are high: lost enthusiasm among faculty for use of technology in teaching, higher maintenance and support costs, and labor costs incurred in swapping out systems for repairs.

This fiscal year, almost half the installed data projectors are 1-2 years old. These account for only 10% of data projector support costs (including technical support, maintenance and repair).

About 16% of our installed projectors are 3-4 years old, but they are responsible for 43% of projector support costs.

The remaining 35% of installed data projectors – those over 5 years old – incur 47% of data projector support costs.

When installed data projectors break down we substitute mobile equipment until the installed equipment is repaired. For security reasons we cannot leave these valuable projectors in classrooms. It costs about \$1,040 per quarter in labor costs alone to deploy mobile data projectors to classrooms. These are costs not incurred by installed equipment.

If we cannot replace older projectors, the proportion of these high-maintenance items will grow rapidly, along with escalating support and maintenance costs. At current funding levels, we must choose between installing new equipment to meet growing demands and replacing old equipment, even though doing so would save money in the long run.

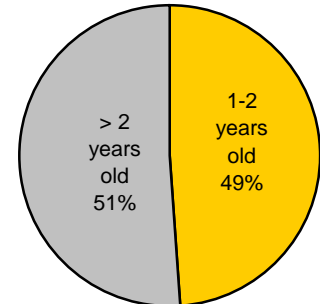
THE EFFECTS OF A FLAT BUDGET

Last year, seizing the opportunity to couple efforts with Facilities in the renovation of Math Sciences classrooms, we met with and surveyed the Math Sciences faculty to determine their instructional technology needs. At these consultations, we found enthusiastic support for installation of data projectors.

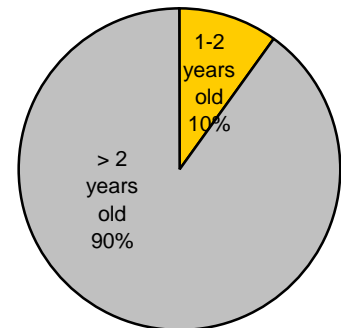
Looking ahead to the completion of Haines Hall this year and several construction projects through 2003, we requested additional funding to support the installation of new media classrooms, which was denied. Consequently, we were able to install just one small media classroom (6229) and upgrade the Math Sciences auditorium (4000A), much to the disappointment of the faculty who had been involved in the planning.

The Older 51% of Data Projectors Consume 90% of Projector Support Resources

Number of Installed Projectors, FY 00-01



Proportional Support Costs, FY 00-01



Our goal is to replace most high-end equipment on 3-year cycles.

Below is an excerpt from the budget request we submitted.

Projects Completed with Existing Funding (2000-2001)		
Building	Project	Estimated Cost
Life Science	Standard Classroom w/Smart Board (4127)	\$ 67,520
Math Science	Upgrade of 4000A to Standard Classroom	\$ 97,419
	1 Small Classroom (6229)	\$ 29,979
	Infrastructure in remaining classrooms	\$ 29,900
Haines	Standard Classroom Put-Back	\$ 273,454
	Partial upgrade to Standard Classroom (1/2 this FY)	\$ 44,457
	Infrastructure in remaining classrooms	\$ 32,200
All GA Classrooms	Recurring annual equipment costs	\$ 224,993
Total Spent		\$ 799,922

Uncompleted Unfunded Projects (2000-2001)		
Building	Project	Estimated Cost
Math Science	9 Small Classrooms	\$ 269,811
	2 Standard Classrooms (3915 A & D)	\$ 207,080
Dodd 147	Replace Ampro projector	\$ 98,600
Moore 100	Replace Ampro projector	\$ 98,600
Haines	Standard Classroom Put-backs (1/2 this FY)	\$ 171,074
	11 Small Classrooms (1/2 this FY)	\$ 164,885
Total Not Funded		\$ 1,010,050

Concluding Remarks

During the past two years, the units within Classroom Services have been making concerted efforts to cut costs while maintaining our numerous services at a high level of quality. We have let two vacant full-time career positions remain unfilled (our original career FTE count was 16), and have cut part-time and casual staff by attrition.

At the same time, we have made record numbers of media equipment deliveries, participated in planning for the greatest construction boom in recent history, and continued to receive high marks from clients.

Over the years, we have often asked faculty to guide us in setting priorities: Should we build fewer cutting-edge classrooms or more moderately-equipped classrooms? What new technologies have the greatest potential for usefulness in teaching? Should we provide stand-by operators for media equipment or train instructors to be self-sufficient? This year we established a Classroom Services Faculty Advisory Committee to assist us in framing and answering such questions.

With the future bringing higher personnel costs mandated by an increase in career positions, and the expectation of Tidal Wave II, our questions to faculty are changing as we face continued flat funding. Should we remove failing equipment we cannot afford to replace in order to avoid pouring disproportionate resources into

"I've been able to take a leap this year in terms of incorporating some technology in the classroom based on what [OID has] made available out there and all of those resources."

Jill Stein, Sociology

supporting it? How do we find ways to ration our services among departments or must we cut back on them altogether?

If we intend to continue to provide UCLA instructors with the quality of instructional technology they have come to expect, we simply must be funded at a level that allows us to continue the job.

- We must allocate new funding to take advantage of campus construction projects for the installation of new media classrooms.
- We must fully fund annual ongoing support and maintenance costs.
- We must allocate new funding to replace aging equipment.