

***UCLA OFFICE OF INSTRUCTIONAL DEVELOPMENT
EDUCATIONAL TECHNOLOGY SYSTEMS***

ANNUAL REPORT 2006 - 2007

***TEACHING AND LEARNING TECHNOLOGY IN
GENERAL ASSIGNMENT CLASSROOMS***

Introduction

This report contains statistical data and information about the general assignment classrooms at UCLA, including current teaching and learning technology installations and plans for future upgrades. It also describes the development issues facing the Educational Technology Systems unit, current and upcoming projects, long term plans, and information about procedures and equipment. The Classroom Services unit consists of:

- Audio-Visual Services
- Classroom Technology Design and Maintenance
- BruinCast
- Educational Technology Innovations

Audio-Visual Services provides technical support, training, scheduling, and other services directly to users of UCLA General Assignment Classrooms. Classroom Technology Design and Maintenance works with other campus units including Capital Programs, Facilities, and the Registrar's Office to design, install, and maintain educational technology in general assignment classrooms. BruinCast is a services that records and webstreams undergraduate courses for use by students as a study aide. Educational Technology Innovations is the research, development and training unit of ETS, investigating and implementing technologies such as audience response systems ("clickers,") rich media presentation, enhanced podcasting, etc.

As of Fall 2007...

There are approximately 200 General Assignment Classrooms available for instruction. The number varies as much as 10% annually due to construction, seismic retrofitting, and maintenance.

- 100% have network and Internet access,
- 89% have installed video playback equipment,
- 51% with installed data projection capability,
- 31% have installed slide projectors,
- 31% have installed classroom computers,
- 16% have streaming or podcasting capability.

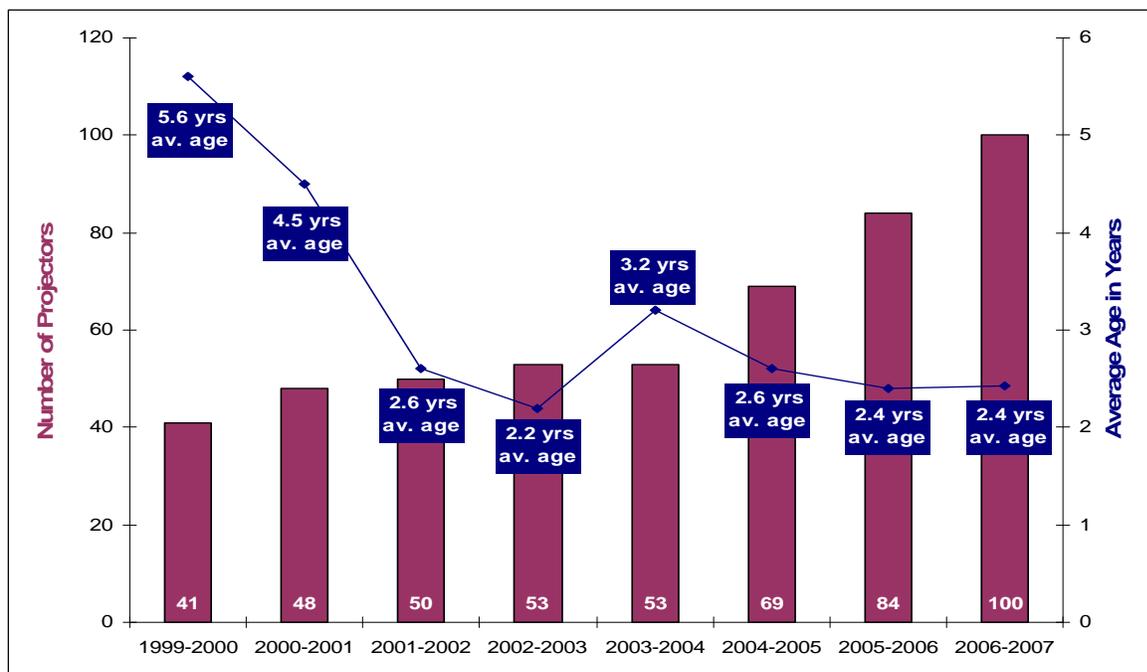
Classroom Equipment Statistics, as of Fall 2007

| Classroom Size | # of Rooms | Overhead Projector | Network Connection | Video Playback | Data Projection | Media Amplification | Voice Amplification | Installed Computer | Slide Projection | Streaming / Podcast |
|----------------|------------|--------------------|--------------------|----------------|-----------------|---------------------|---------------------|--------------------|------------------|---------------------|
| 10-19 | 16 | 16 | 16 | 15 | 1 | 1 | 0 | 0 | 0 | 0 |
| 20-39 | 85 | 85 | 85 | 69 | 24 | 24 | 8 | 10 | 9 | 0 |
| 40-59 | 40 | 40 | 40 | 39 | 22 | 22 | 15 | 20 | 7 | 1 |
| 60-99 | 21 | 21 | 21 | 18 | 18 | 18 | 18 | 13 | 15 | 5 |
| 100-149 | 17 | 17 | 17 | 16 | 16 | 17 | 17 | 9 | 14 | 11 |
| 150-199 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 3 | 5 | 2 |
| 200-299 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 2 | 5 | 5 |
| 300+ | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 4 | 6 | 7 |
| Totals | 198 | 198 | 198 | 176 | 100 | 101 | 77 | 61 | 61 | 31 |
| % | | 100% | 100% | 89% | 51% | 51% | 39% | 31% | 31% | 16% |

During the 2006-2007 Academic Year OID...

- continued to install equipment to support the BruinCast course webcasting project, for audio and video streaming directly from the classroom to the Internet,
- completed teaching and learning technology equipment installations in Broad Art Center 2100A & 2160E, which opened Summer 2007,
- upgraded fourteen rooms to full technology classroom status, including three rooms in Boelter, two rooms in Dodd, one room in Geology, four rooms in Haines, and four rooms in Public Affairs (formerly Public Policy Building),
- renovated the teaching and learning technology installations in five large lecture halls: Court of Sciences 24, 50, and 76 auditoriums, Dodd 147, and LaKretz 110,
- added eight classroom computers to existing technology classrooms and replaced the video/data projectors in five classrooms,
- installed student feedback system receivers in classrooms with computers,
- ran workshops, trainings, and events in the OID Training and Demonstration classroom in Powell Library,
- and continued to research and develop new classroom technologies to enhance instruction.

Age of Installed Data/Video Projectors



Classroom Upgrade Plan Fall 2007 – Summer 2008

Fall 2007

New Installations:

Boelter 5419
 Haines A06
 Haines A28
 Royce 154

Upgrades:

Rolfe 3126
 Rolfe 3134
 Rolfe 3135

Equipment Refreshment:

Data/Video Projector Replacements:

- Boelter 5249
- Boelter 5276
- Boelter 5436
- Bunche 2209A
- Dodd 146
- Dodd 175
- Geology 3656
- Geology 4660
- Haines A2
- Haines A18
- Haines 118
- Haines 220
- Life Sciences 4127
- Math Sciences 5225
- Math Sciences 5233
- Math Sciences 6229
- Public Policy 2214
- Young 2200
- Young 4216

Winter 2008

New Installations:

Boelter 5420
Royce 156
Dodd 78
Dodd 154
Dodd 162
Haines A74
Haines A78

Upgrades:

LaKretz 120 (Distance Learning)

Equipment Refreshment:

Data/Video Projector Replacements:

- Boelter 3400
- Boelter 5440
- Haines A25
- Haines A44
- Kinsey Pavilion 1200B
- Kinsey Pavilion 1220B

Spring Quarter

New Installations:

Boelter 5422
Royce 150
Royce 362
Math Sciences 3915A
Math Sciences 3915D

Upgrades:

LaKretz 110 (Rich Media Pilot Installation)

Equipment Refreshment:

Data/Video Projector Replacements:

- Public Policy 1222
- Public Policy 1234
- Public Policy 1246

Summer Quarter

New Installations:

Boelter 2760
Boelter 5440

Upgrades:

Court of Sciences 24
Court of Sciences 50
Court of Sciences 76
Dodd 147 (New Auditorium Standard)
Moore 100 (New Auditorium Standard)
Franz 1178
Kinsey Pavilion 1240B

Classroom Technology Business Plan 2008-2012

Introduction

The Office of Instructional Development has responsibility for providing teaching and learning technologies to UCLA general assignment classrooms in support of undergraduate instruction. The model for providing technology has changed over the years, driven by advances in technology, changes in the ratio between staff and equipment costs, and the needs and desires of the teaching faculty. UCLA classrooms reflect the technology and teaching methods of the era in which they were built.

Background

In response to faculty demand and with support from the Chancellor, in 1980 OID spearheaded an ambitious collaboration among Capitol Programs, Facilities Management, the Registrar's Office and its own Media Systems Design group to develop a ten-year plan for:

- replacing damaged flooring and ceilings
- bringing rooms up to ADA access standards
- restoring or replacing damaged writing surfaces
- recovering seating or replacing missing seats
- painting walls
- enabling rooms to be darkened for projection
- building projection booths, where possible, in three large lecture halls
- installing screens in rooms
- equipping ten classrooms for media projection.

That plan was successfully concluded in 1990 and new practices were developed for cleaning classrooms, regularly cleaning boards and supplying chalk, scheduling media classrooms, and developing delivery systems for media in the 195 rooms which did not have installed equipment.

A second ten year plan was developed with more modest goals: attempting to refresh classrooms at least once every 20 years, and to install more media as faculty use of both film and video began to surge. This plan quickly foundered in the severe budget cuts of the early 1990's. The reduced circumstances forced a number of major concessions and an agenda which:

- limited room renovations and eliminated refreshment schedules
- decreased the number of equipment operators and converted those funds for the purchase of overhead projectors and television monitors
- phased out all equipment delivery and pick-up by mid-decade
- re-charged all professional school programs for media use
- emphasized equipment for the expanded use of video over film
- supported the industry changeover from 3/4 inch video to VHS video standards
- attempted to coordinate media installation and lighting changes with seismic renovation projects, rather than based on room conditions and use.

The 1994 Northridge earthquake further reduced resource availability, and classrooms again began to deteriorate, even as the faculty expressed interest in using expanded new media as part of their teaching. OID requested annual funding for the installation and upgrade of media equipment in classrooms, while continuing to act as an advocate to other campus units for refreshment and renovation of the physical facilities. The chancellor allocated \$463,000 annually for the media equipment, allowing OID to increase the number of equipped rooms to around 65, or 33% of the inventory. In 2005, an additional \$300,000 per year was approved by the campus administration, which has led to an additional 37 installations planned or completed by July 1, 2007. This represents roughly half of all general assignment classrooms.

In 1992, OID initiated a plan to connect all classrooms on campus to the backbone network. Then EVC Rich, suggested that the plan should be expanded to wire all workplaces on campus. While enthusiasm developed for the latter plan, classrooms, somewhat ironically, were left out of the agenda. OID redirected some internal funding and staff, and wiring of classrooms for network connection was finally completed almost a decade later, in 2004. Operation of the classroom network was then turned over to Campus Telecommunication Services.

Current Environment

As OID strives to build additional media classrooms and refresh current installations, the technology environment for classrooms continues to undergo continuous change. Media projection has progressed from film to 3/4 inch video to VHS video, to DVD video. Slide projection – a major classroom investment – is no longer viable as digital projection has overtaken the market. Electro-mechanical equipment has become much less common, and preventive maintenance is not possible for electronic equipment. Thus the emphasis must now be on replacement rather than repair. Microsoft PowerPoint and similar software require the use of digital projection in all classrooms. Faculty rely on the availability of digital projection regardless of class enrollment. As the

basic equipment suite continues to undergo change, faculty express keen interest in using other systems: e.g. electronic writing tablets, personal response systems, live data streaming, wireless study groups, etc. The demand for faculty consultation in equipment use, software applications, teaching methodologies, and media alternatives has increased dramatically since 1998-1999 most likely covariant with the implementation of the Instructional Enhancement Initiative.

New media formats, and concerns about intellectual property, have created a radically different classroom environment. At the same time, technological capability often conflicts with legal capability. Increased use of new media has also expanded the use of traditional media. The use of time-shifting media systems – such as BruinCast, Video Furnace, and Pod-casting – have expanded faculty initiatives for teaching in a next-generation format. Efforts to move instruction out of the classroom (such as evidenced by the BICs project) have not been embraced by either faculty or students. And when such projects are successful, they require a larger support system than the campus is capable of providing.

Technological changes often require additional large investments in resources – such as the current request to implement a campus-wide course management system. Much of this investment will reap only partial returns if classrooms remain one to three generations behind the current teaching environment.

The shift from delivery of overhead projectors and television monitors on carts to the installation of data/video projection systems with in-room sources and remote monitoring and troubleshooting has caused major shifts in both funding priorities and needs. OID, in consultation with campus partners and other UC experts, have used industry practices to develop UCLA Campus Classroom Standards. These standards define the equipment suite needed for each room to support currently accepted instruction practice. However, UCLA invests less per classroom for equipment and maintenance than do the other UC Campuses, and is comparatively behind them in the quality of the rooms. The existing budget allocation, even with the addition of recent augmentations, has reached the limit where maintenance and upgrade costs over the next five years will not support any additional room installations to meet the standards. Thus, while other UC campuses either plan or already have completed in room data/video projection in every classroom, UCLA is currently slightly over 50%, without existing or planned resource capability for augmentation.

Classroom Technology Business Plan

In order to enable UCLA faculty to achieve their full teaching potential, 100% of UCLA general assignment classrooms must have digital projection capability. To achieve this goal, the Office of Instructional Development proposed a five year plan for installation, upgrade, and maintenance of media equipment. As of July 1, 2007, there will be 95

classrooms without installed equipment. A funding proposal was submitted to the Chancellor's Office for equipment expenses is required to complete the fitting of these rooms. In addition, based on the assumptions below, an additional amount was requested over the next five years to keep the classrooms refreshed with current equipment. For the 2008-2009 fiscal year, OID will receive additional permanent allocations to achieve the stated goals of the plan.

The following information describes some of the assumptions used to create the plan.

General

- Classroom technology standards are those described in UCLA Classroom Standards, available on the OID website. These have been developed by UCLA Classroom Technology Design and Maintenance staff based on campus practice, UC wide consultation, and industry standards.
- Equipment costs are assumed to remain basically constant, as the pattern over the last few years suggests that price drops accompany increases in performance.
- Video Projectors need to be replaced every 5 years. Media source, switching, and control systems need to be replaced every 10 years. Sound systems, speakers, and screens need to be replaced every 15 years. These assumptions are subject to annual review based on technological change.
- Some rooms require a higher level of equipment than the standard to meet teaching needs.
- Auditoriums require two projectors and two screens for displaying visual presenter output as well as subsidiary equipment such as personal response systems. (See the following New Auditorium Standard.)
- All auditoriums, and most large lecture halls where the room configuration is appropriate, will receive equipment to enable video webcasting. All classrooms, lecture halls, and auditorium will receive equipment to enable audio webcasting.
- Changes in technology are not accounted for. There are no current plans to upgrade to plasma monitors, high definition DVD players, wireless projection, etc. If these, or other currently unknown technologies become the industry standards, the plan may need to be revisited before the next five year cycle.

Staffing

- Media Systems Design currently has 3 FTE: Principal Electronics Technician, Principal Television Technician, Electronics Technician.
- These staff, with consultation and professional technician temporary assistance as needed, can carry out the goals of the plan for the first 3 years.
- One additional FTE of maintenance staff will be required when the number of equipped classrooms exceeds 150.

Maintenance

- Media Rooms require the following maintenance:
 - Monitoring lamp life
 - Changing lamps
 - Changing out equipment
 - Sending out and monitoring equipment repair
 - Adjusting and tuning
- Annual Maintenance cost for all classrooms is cost of projector lamps, projected cost of repairs and replacements, and staffing.
- 1 FTE is required per 100 rooms for annual maintenance.

Visual Presentation Equipment

- All 200 classrooms currently have overhead projectors on carts. This equipment is obsolete.
- Replacement of overhead projectors with visual presentation equipment is included in the installation and upgrade equipment estimates. All overhead projectors will be replaced with visual presenters. Installations will be permanent where possible, otherwise a cart will be used.

New Auditorium Standard

Current Installation

LaKretz 110

Planned Future Installations

| | |
|---------------|-------------|
| Moore 100 | Summer 2008 |
| Dodd 147 | Summer 2009 |
| Broad 2160 | Summer 2009 |
| Humanities 51 | Summer 2010 |
| Haines 39 | Summer 2010 |
| Rolfe 1200 | Summer 2011 |
| Fowler A103B | Summer 2011 |
| Franz 1178 | Summer 2012 |
| CS50 | Summer 2012 |
| P&A 1425 | Summer 2012 |

Standards

- Two projection screens, one large main in the center of the front wall and one smaller off to one side. Both screens should be visible from all seats in the room. Some rooms depending on design, may have a third screen fitted.
- Two data video projectors, one for the large center screen and one for the side screen. If three screens are fitted, then a third projector will also be installed.
- Double width media cabinet with multiple sources (DVD, VHS, Computer, laptop interface) and projector switching to allow any output to be shown on any screen. Additional controls and computer inputs may be located on a permanent or movable teaching podium.

- A computer connected to the media system and the data network installed in the media cabinet with the keyboard on an articulated arm for standing or seated use. The monitor is replaced by an interactive pen display.
- An “electronic overhead projector” or digital presenter is provided for display of transparent or paper-based material. The output can be presented on a separate screen(s) to enable simultaneous use of the primary media system.

BruinCast Video Streaming Pilot 2 – Spring 2007

Current Methodology

- In room camera operator
- Single view
 - Camera shoots instructor, board, screen
- Some installed encoders, other rooms require post class encoding

Pros:

- Simple
- Inexpensive equipment
- Operator can shift focus and zoom where needed
- Viewed by students in commonly available software

Cons:

- Labor intensive
- Not scalable
- Scheduling difficulties

Proposal 1: Picture in Picture

- Installed, fixed camera shoots front of room, including instructor and boards
- Dual view
 - Fixed camera in one window
 - Data/video projector output in the other
 - Computer (PowerPoint)
 - Video (DVD/VHS)
 - Visual Presenter

Pros:

- Very low labor requirements
- Inexpensive equipment
- More easily scalable

Cons:

- More complex installation and networking

- Viewing software may not be as commonly available
- Inability to focus on board may present viewing challenges

Proposal 2: Rich Media

- Multiple cameras can shoot instructor and boards
 - Possible use of automated cameras to follow instructor
 - Possible use of remote control cameras
 - Possible use of higher quality fixed cameras
- Multiple view
 - Instructor camera window
 - Data/video projector output window
 - Computer (PowerPoint)
 - Video (DVD/VHS)
 - Visual Presenter
 - Outline/notes window
 - Caption window

Pros:

- Potentially low labor requirements
- Enhanced presentation leads to increased utility*
- “Wow Factor”
- Software interface integrates with Moodle (and other CMS) for search, archiving, retrieval, etc.
- Ability to create packaged or special presentations

Cons:

- Significantly more complex installation and networking
- Significantly increased expense per room
- Viewing software may not be as commonly available

Further information about General Assignment Classrooms can be found at www.oid.ucla.edu.