Language Lab Renovation Basics in the Age of Information

In this paper, the authors trace the process of renovating an existing language laboratory in order to incorporate computer, video, and satellite antenna technology. Restructuring of existing laboratory—equipped exclusively with audio tapes—was made possible by a grant. In describing the process of renovation, the authors look at the existing facility, discuss the pitfalls and problems inherent in lab renovation, present much-needed information about the basics of renovation, and make useful recommendations which can make the process of language lab renovation in the Age of Information easier and on target.

"The world is in passage from the industrial age to the information age." In this new world, we must "find new ways to continue to create value" so our institutions of learning must "foster innovation." No longer "is it enough to transfer knowledge to students...we need to give them *access* to the unbounded world of knowledge. That means we must prepare all students not just professional scholars, to embark on a journey of learning and discovery."

> John Sculley, President
> Apple Computer, Inc.

Groundwork

April 30, 1988, was the date of a symposium—cosponsored by the Language Acquisition Center and Apple Computer—at the University of Texas at Arlington. Only 12 months earlier, no such symposium could have been conceived; there was no Language Acquisition Center at the University of Texas at Arlington at that time. How did the Department of Foreign Languages and Linguistics manage to create the space, furnish it, and acquire the technological equipment that would evolve into the Language Acquisition Center?

We worked for one year putting the entire symposium project together, but we applied for the original grant money that funded the restructuring of our existing language laboratory facility and discovered we had only two weeks to write the proposal!

Limited Research. Working under an unrealistic, two-week deadline caused us both immediate and far-ranging problems. We only had time for very limited checking as to brands of equipment, cost, size, and specifications. As a result, we drew upon our personal knowledge, made phone calls, and read a few catalogues; there was too little time to do any real research to determine the specific capabilities of much of the equipment we felt we needed. Our approach had to be "buy now, justify later." This being the case, we tried to put into the original proposal a list of everything we thought to be beneficial for language acquisition. For example, we built into our grant amounts of money for computer purchases based on our own awareness of the performance of a number of personal computers; we recommended the Macintosh for maximum capability in the future and the Apple II series for utilization of presently available software.

Universal Challenges. The Grant we received from the Permanent University Fund was for two purposes: renovation of classrooms and laboratory, including the purchase of equipment. While the specifics of the grant make our laboratory renovation unique, the challenges we confronted encompass the philosophical and practical problems which many of our colleagues around

the country encounter as they face language learning in the Age of Existing and Emerging Information Technologies.

Useful Advice. We had a language lab that had been built—as so many were—in the 1960s, and we feel that our experiences in revamping and renovating it could be of benefit to others who also want or need to remodel. We know that many teachers are keenly interested in what technology is doing, are trying diligently to keep up with it, and want to incorporate its advances into their teaching. By delineating our problems, we hope this discussion will offer helpful advice.

Committee. Our approach to renovating began by putting together a committee (admittedly, not very original). This committee, however, was composed of people who had already been working voluntarily to discuss what new Information Age technology ought to be in a language lab. Although this committee had been meeting on and off for about three months, when the chance for a grant arose, members of the committee had not had sufficient time to set forth guidelines for laboratory renovation.

Tacit Assumptions Breed Problems. Most of the problems we encountered derived from various tacit assumptions—often vaguely defined—about language learning. Many of the disagreements were worked out once the philosophical positions were defined, that is, once we were able to "spell out" what we wanted the lab to do. Inevitably, discussions about lab renovation serve to distinguish differing attitudes and approaches to language teaching or methodology; such discussions also amplify the fact that many people in the Liberal Arts are intimidated by technology in general and computers in particular. Reassuring them that useful technology which impinges on language teaching is no threat to them is often, if not always, necessary. In fact, computers, television cameras, the videodisc, and other technologies offer many new possibilities for developing teaching materials—materials that may count as publications and can often be marketed for mutual profit to the teacher and the institution.

Spelling Out What a Lab Should Do. In order to "spell out" what the lab should do, we felt it very important to get a wide range of responses from members of the department about

what each one wanted in a lab. Our experience in this respect bears out an important truth: Getting input from colleagues is more difficult than one would anticipate.

First of all, we received very little positive input; secondly, the input we did receive showed a great variety of opinion about the purpose and function of the new lab. Although expenditure for equipment would be a major expense, we got almost no recommendations about what equipment we should purchase. This aspect of lab renovation lead us to discover a second important truth: To get input from people, they must be made to realize that their advice is really being sought. *Now* we know that in order to get helpful answers and suggestions from colleagues, a *brief* survey must be designed to elicit specific information. The questions in such a survey must be specific if they are to reveal the goals and objectives of the individuals behind the responses. The questions in such a survey include—but are not limited to—the following:

1) Do you think we should include video monitors in the lab? Yes No

2) Do you think we should include computers in the lab? Yes No Comments:

3) Do you think students should be allowed to check out videocassettes to watch in the lab? Yes No Comments:

4) Would you want to conduct your class in the lab occasionally for testing or learning purposes? Yes No Comments:

5) Do you think that the lab should offer courses for self-paced work? Yes No Comments:

6) Do you think that the lab should provide authentic materials, e.g., newsreels on videocassette, TV commercials, travelogues, feature films, real conversations with natives, etc.? Yes No Comments:

7) Would you require students to take tests or make reports in class based on materials such as computer drills and games, films, etc., which would be available only in lab? Yes No Comments:

Frequent Exchanges. Establishing some kind of consensus about such aspects of renovation as lab configuration, integration of classroom and

lab, and how the lab was to be used in achieving pedagogical goals was a major problem and necessitated frequent exchanges among all interested parties. We encouraged everyone to be involved in such exchanges, if nothing else, but to express opinions. Because everyone needs to feel a part of the renovation process, involvement is vital.

In our case, we were fortunate that the committee members believed in the basic concept of a multi-faceted lab with video, computer, and audio equipment. There was, however, no clear consensus about the relative importance of each technology or how they would work together; integration of lab and classroom was yet another concern which had to be defined.

Most of us thought that we should make a totally new start because the existing audio lab had been a system left over from the days when audiolingual learning formed the philosophical basis of lab configuration, i.e., it consisted of tape recorders for listening and/or recording. Although we agreed initially that the renovated lab should be equipped with video monitors, computers, and audio players, philosophical questions remained about the involvement of the lab in the aims and goals of foreign and second language pedagogy.

Library Versus Teacher-Directed Lab. A disagreement that needs to be defined in laboratory renovation is whether the lab should be "library" (students come voluntarily and work with the materials and technologies independently) or "teacher-directed" (a teacher operating from a laboratory console directs and monitors students as they work with assigned materials and technologies). Considerable discussion of contemporary language learning theory convinced us that we needed to move away from a strict teacher-directed approach. Some committee and faculty members advocated Stephen Krashen's learning theory which maintains that comprehensible input helps students reach higher levels of mastery. How influential this theory was in our thinking is debatable; what we did decide, however, was that a "library" laboratory was the kind we needed to structure. Without a doubt, video, computer, and audio programs could provide the maximum comprehensible input. Thus, we agreed that a "library" concept laboratory met all of our

requirements for language acquisition.

Self-Paced Language Acquisition. In a "library" concept laboratory, students could take full advantage of computer-assisted instructional courseware, check out video films in the target language, and listen to audio cassette tapes. More importantly, perhaps, they could pace their own learning. In addition, access to authentic materials for teaching of culture through "direct" exposure could also be maximized in such a laboratory.

Furnishing with Technology. Once the basic type of lab was decided upon, where to locate it and precisely how to furnish it, became our next concern. The factors that concerned us at this point included the following:

1) Maximum student use of lab through easy accessibility to location;

2) How many and what kind of computers to install;

3) Arrangement and number of video monitors to encourage optimum student use;

4) What kind of satellite dish antenna to install (for all of Europe or Western Europe only since there is a difference of thousands of dollars necessary for buying and installing a world-wide dish as opposed to one that receives North and South America only).

Minimum Requirements. Although we had to consider the quality, probable maintenance, and cost of each item proposed, we also had to divide up funds equitably across language areas for the purchase of various software items, video and audio cassettes, film strips, etc. The criteria that were minimum requirements were as follows:

1) The lab needed to be in a bright, open area slightly away from classrooms;

2) The satellite dish antenna should receive the Americas and Eastern Europe;

3) The lab had to provide 10 to 12 monitors and videocassette players with junction boxes for plugging in headphones;

4) The computers needed to be set in large booths that could accommodate two or three students (space limitation prescribed no more than 12 booths); and

5) A viewing room for watching telecasts off the satellite dish or for classes to watch video films should be a part of the lab.

Importance of Defining Methodological Positions First. Most of the questions were actually resolved *post facto*. A great deal of confusion and discussions at cross purposes could have been avoided if methodological positions had been clarified at the beginning of the discussions. Since recommendations about lab configurations always imply a philosophy of language acquisition, then the question of what type of lab shall we have (teacher-directed or library or a combination of the two) could have been clearly stated in the beginning, thus saving a great deal of time and forestalling many misunderstandings.

Language Acquisition Center Equipment

- 9 video tape listening positions with Zenith monitors and Emerson play-only VCRs for use by 1-4 people.

- 12 computers: 5 Macintosh 512E, 4 Apples IIGS, 2 Apple IIC, 2 Macintosh Plus.

- 15 audio listening positions with Sharp tape recorders and headphones.

- 4 portable VHS video cameras (3 Panasonic, 1 JVC).

- 3 tripods.

- 1 microphone mixer (4 inputs, 1 output).

- 6 microphones, including 2 Sony lavaliers.

- 1 Pioneer LaserDisc player (for authoring of interactive computer/video language materials).

- Videonics editor.

- Image for projecting the Macintosh screen.

Additional Equipment (Spring semester 1988)

- Pioneer 4200 Video disk player and 5 laser disks.

- Macintosh SE with 20 meg internal hard disk.

- 2 Mb memory upgrades for two Macintosh computers.

- AppleTalk cards for two printers.

- AppleNet connectors for networking the computers in the language and linguistics labs.

- Telescopic lens and wide-angle lens for camcorders

- n-View projection system for the Macintosh (to allow overhead projection of computer screen).

- Electret telescopic microphone for the camcorder.

- Panasonic film transfer adaptor.

- Small Videonics editor for video films.

Language Acquisition Center Materials

- 295 audio tapes for English as a Second Language (ESL), French, German, Spanish, Russian, and Portuguese.

- 147 software titles (111 Apple II, 36 Macintosh) for ESL, French, German, Spanish, Russian, and Portuguese.

- 151 video titles for ESL, French, German, Spanish, Russian, and Portuguese.

- Slide programs for French, German, Spanish, Russian, and Portuguese.

Language Acquisition Center Suite of Rooms (302-307)

- Room 302: **Satellite Room** used for previewing films, small class viewing, groups of more than four students that can't be accommodated at the individual viewing stations;
- Room 303: **Video Room** in which the video viewing stations are located and which is decorated with tables, chairs, reference books and serves as a study meeting area;

- Room 304: **Storage Area;**

- Room 305: **Office of the Lab Director,** Dr. Anne Gibson;

- Room 306: **Checkout Counter** area;

- Room 307: **Computer/Audio Room** used for all audio tape listening and computer usage.

Language Acquisition Center Personnel

- Lab Director: **Dr. Anne Gibson;**

- Audio/Visual Specialists: **2 part-time;**

- Student Employees: **7 work/study and non-work/study student employees consisting of 1 clerical/filing (3 hours per week), 1 tape duplicator/theater specialist (13 hours per week), and 5 counter help/lab assistants (48 hours per week).**

The duties of the personnel are as follows: The two audio/visual specialists are responsible for the operation of the lab, including supervision and scheduling of the work-study students, faculty/student training in the use of the hardware and software holdings of the lab, scheduling of equipment and space resources, other duties as required, and materials development. The student employees are responsible for the operation of the checkout counter, duplication of audio tapes, lab cleanliness, assisting faculty/students with use of the audio/video tapes and software.

Language Acquisition Center Materials Development

Since the renovated lab opened, we have been involved in producing our own video films, using video digitizers, as well as writing software, particularly HyperCard with compatible audio digitizers. Many of the HyperCard items, complete with sound, will be used for creating a Videodisc designed specifically for language teaching.

Things Forgotten, Things We'd Like to Do Over

- **We forgot to budget for consultant's fees.**

- **We forgot to build in even a pittance for travel allowances for consultants or for committee members to attend conferences and workshops.**

We were fortunate to be able to consult with the Director of the language lab at Georgetown University in Washington, D.C. Jackie Tanner, who directs the facilities there, gave us *very* helpful advice which saved us from a number of mistakes.

General Recommendations for Building a Language Lab

If considered and followed, the general recommendations here offered for building or renovating a language laboratory will assist those charged with such a task in making sound decisions and informed choices about lab configuration, lab technologies, personnel, and procedures.

Recommendation 1: Give careful consideration to the qualifications of the personnel appointed to direct and staff the laboratory facility. For high-tech labs, specifically trained and well-qualified people are needed and can be recruited.

Recommendation 2: Delineate the philosophical issues intertwined with the goals and aims of the laboratory. Allow for future additions of technology, even if such technology has not yet had its language-learning applications clearly defined.

Recommendation 3: Lay out the space parameters of the laboratory so that it is *least* like a classroom (add lots of plants, for example).

Recommendation 4: Bring in your AC power lines from the ceiling if possible (concealed by fake pillars, for example) for the equipment in the laboratory; these lines supplement the usual wall receptacles of which you cannot have too many.

Recommendation 5: Design the laboratory to encourage communication exchanges between and among students; studies show that a great deal of learning takes place in this spontaneous fashion.

Recommendation 6: Put in a viewing room where films run throughout the day and different languages are featured hourly or so; telecasts or rebroadcasts from a satellite dish can be fed into such a viewing room as well. This viewing area should have free come-and-go access without check in (just a row of carpeted bleacher-type seating for short-term watching to encourage students to drop in to see at least a few minutes of a foreign film every day or so).

Recommendation 7: Keep a catalogue of suppliers so that you will always have handy reference sources for repairs, reordering, etc., in the future.

Recommendation 8: Use a computer data base for your record keeping.

Recommendation 9: Keep a shelf of magazines, journals, and catalogues dedicated to reviews of CAI/CAL software programs for the computer and listings of foreign films, video, and audio cassettes.

Recommendation 10: Look into the acquisitions of computers carefully. Software is not interchangeable among different brands of hardware, and some computer brands have much more software available for education than other brands; don't overlook the issue of copying software for student use in the laboratory before you purchase computer software. Check to see if a site license is offered or required; find out the cost of multiple copies of a program. Ask if any peripherals are required to run a particular program, such as sound boards or additional memory. Be aware that permission to preview software is very difficult to get. (Why this is so, we are not sure.)

Recommendation 11: Films in general cost a lot more than video versions of them; many films are now available in video format. Remember, the audio quality of a video film's sound track is vital whereas the video need not be as crisp; this is important if you are making videos of your own as well.

Recommendation 12: Remember, publishers are preparing courseware packages that include textbook, video, and computer diskettes as well as audio tape programs which try to integrate class and lab work; if such a multi-media package can be adopted, coordination across language sections—as well as lab and class—becomes much easier.

Recommendation 13: Determine ways and means to handle the checkout and use of multimedia packages; large ZipLoc bags are very handy for packaging the media and a group of carrels can be equipped with audio cassette player and computer.

Recommendation 14: Use of videocassette players (as opposed to videocassette recorders, VCRs) is not only cheaper but prevents unintended erasures of tapes. Wiring a Calrad junction box into each video monitor will accommodate eight sets of headphones (four students per monitor, however, seems to be the optimum); place monitors on low tables with comfortable chairs at the tables for seating.

Recommendation 15: Equip the lab with one or more multi-standard VCRs for reception and recording of formats other than the American NTSC. Europe uses PAL and SECAM formats; in addition, multi-standard monitors are required to view foreign telecasts.

Recommendation 16: Equip the lab with a relatively inexpensive (some of today's portables are perfectly adequate) shortwave radio; programs can be recorded or broadcast live in the viewing room or lounge areas of the lab.

Recommendation 17: Satellite dish antenna technology is somewhat complex; we are happy to furnish information about the process of antenna selection and installation to those who write to us asking for details.

Recommendation 18: Although we installed audio tape recorders that do not allow for students to record their responses for two-track audio comparison, a few two-track comparison recorders may prove useful in the laboratory for those students who benefit from such comparisons.

Recommendation 19: Keep a list of vendors who repair the technologies used in the lab as well as a list of what equipment is under warranty and pertinent dates.

Recommendation 20: Use automatic video rewinders; using the VCRs for rewinding of videotapes can—many experts claim—cause problems for tape transport alignment.

Recommendation 21: Develop a system of cataloguing lab holdings; teachers and lab users need to know what is available; our data-base system tracks 1) cost of purchases, 2) receipt of items ordered, 3) source of items, 4) type of expense, i.e., for renovation, equipment, or repair; a database program (we use Reflex for the Macintosh) is essential.

Recommendation 22: If possible, use the computer to log students in and keep track of what item(s) they check out; assign meaningful numbers to disks, audio tapes, videocassettes, books, and printed texts in order to facilitate checkouts and checkins; numbers can be coded to reveal what language, what type of materials,

and level of use. (*For a coding system, see IMAC: Storage and Retrieval System for Language Resource Centers in this issue*).

Recommendation 23: Vacuum and dust the lab every two days; clean tape heads (video and audio) weekly. For the sake of security, all cleanup should be handled by lab staff rather than janitorial service.

Recommendation 24: Consult with people who are experienced in use and design of language learning laboratories and visit a new lab; most labs welcome visitors who want to learn from what others have done. Certainly, *we* do.

Recommendation 25: For those interested in a sketch of what can evolve from the application of the language lab renovation basics we have discussed in this paper, we offer you a drawing of our Language Acquisition Center at the University of Texas at Arlington. Given what we had to work with, this is *one* possible arrangement.

Contributor Profile
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