
From 'Sound Mirror' to 'Touch-Screen': An Evolutionary Lab Tale

The history of the use of technology to enhance language teaching and learning is already well documented. This is a record of the evolution of one Language Laboratory in a publicly funded college. Our Lab tale may confirm, parallel or contradict the experience of other labs and lab directors. There is no "typical" lab; each differs in the details of its inception and in the encouragement or neglect it received on its way to modernity and vitality or to obsolescence and extinction.

In spite of a maze of budget and staff uncertainties and faculty apathy, the Brooklyn College Language Laboratory approaches its 50th anniversary as a well-utilized language learning facility with a strong tradition of excellence and the ability to overcome obstacles.

A Universal Lab Tale?

As we look around our familiar Language Laboratory after the latest in equipment up-date, we see the compact cassette recorder in each student booth and are aware of the evolution of our facility over a challenging and productive 49 year period. We propose to follow the progress of one Language Lab—not yet a media center—in a publicly funded CUNY college. The development of our Lab may confirm, parallel or, perhaps, contradict the experience of other Labs and other Lab Directors. There is no "typical" or "average" language lab. Each differs in the reasons for its inception and the encouragement or neglect it received along its

way to modernity and vitality or obsolescence and extinction.

This is *our* story; how and why a Language Laboratory was started at Brooklyn College; how we fought to expand and replace outmoded equipment; how being the recipient of a Title VI Aid to Higher Education Grant turned into an administrative fiasco and academic, technological disaster; how we dealt with and survived faculty apathy, and how we slowly made our way through a maze of budget and staff uncertainties to achieve a smooth-running, well-utilized language learning facility which is compatible with present standards of technology.

Progressive Stages of Development

Scanning the 75'x60' area (formerly 3 classrooms and now the Library Lab), there is ample evidence of the progressive stages of our development. The 40 booths—of two different designs—were constructed to meet our educational needs and to utilize available technology efficiently. Twenty-eight, sturdy but worn oversized carrels—built by the college carpenter from 1955-1957—have not been painted in 20 years; nevertheless, each contains a new, white formica insert housing a SONY ER-840 cassette recorder. Twelve standard-sized student booths—now housing SONY ER-5030 touch-pad cassette recorders—were supplied in 1964-1965 by the vendor of our first Bell dual-track tape recorders.

In addition to the booths, there is other evidence that testifies of change: the mismatched floor tiles, indicating removal of a wall; an unused door to the corridor, converted to a headset rack in 1957 and now blocked by a student booth; the "shower pipes" protecting overhead wiring,

devised to connect booths for group listening prior to the installation of a Broadcast/Console Lab; the long library desk installed in 1964, still controlling the traffic pattern; behind the library desk, shelves built to hold open reel tapes, now modified for cassette tapes; the sound-proof booth from the original 1939 "Phonetics Lab," now in the rear area and used for servicing and repairs. All of these "bits and pieces" indicate the strata of successive alterations. Not visible to us in our cramped, 6'x8' "administrative space" is a 40-position SONY Broadcast/Console Lab installed across the hall in 1980.

The Pioneering Efforts of Lois S. Gaudin

When tracing the origins of the language laboratory, Professor Lois S. Gaudin (1) of Brooklyn College appears as a pioneer in the application of technology to foreign language education. In 1937-1938, when Lois Gaudin moved with Brooklyn College from its old home in downtown Brooklyn to its new Flatbush campus, she had the words "Phonetic Lab" painted on the door of one of the new classrooms, and by 1939, she had established the procedure of scheduling French and Spanish phonetic classes in the "Phonetic Lab." Students' voices were recorded—using an RCA disc cutter—at intervals during the semester in order to document levels of pronunciation and intonation, to monitor progress, and to judge improvement at semester's end. Records were cut either during class, by appointment, or during the college club hours—every Monday and Wednesday from 12:00-2:00 p.m. Professor Gaudin ensured that the cutting needles were kept sharp by periodically sending them out to be "re-pointed." She stood—soft brush in hand—to the side of the disc cutter, carefully clearing the trail of "wax" left by the recording needle.

Although carefully planned electrical outlets waited patiently for the listening devices which were to have been installed as early as 1939, each year—from 1939 to 1949 when the request was finally granted—plans were submitted for a fully equipped lab. Nevertheless, attempts to acquire new technology were thwarted.

Although the requests for new technology paralleled the development of audio technology (i.e., the request for a "Sound Mirror" in 1944) (2), such requests to keep up-to-date were consistently rejected. Until additional staff, space, and equipment became available in 1950, the "Phonetics Lab" did manage to increase its capabilities with the acquisition of two record players equipped for multiple listening, a Masco transcription player, and a Garrard duplicating turntable. Hence, it was possible to provide multiple copies of model discs for use by students of French or Spanish phonetics.

From 'Phonetics Lab' to Language Laboratory

November 2, 1949, was a red-letter day for the department. After studying the plans for the language laboratory, the Dean of the Faculty promised support. Work soon began on sound-proofing the room, constructing a 6'x8' sound-proof booth in the rear corner, and building record cabinets and a long table for the phonographs. Not surprisingly perhaps, in 1950 Lois Gaudin's old Romance Languages "Phonetics Lab" became a Language Laboratory open to all language students.

Equipment in the budding Language Laboratory included 2 disc cutters, 9 phonographs, each with 3 headphone jacks, 1 Ekotape tape recorder, 2 Twin-Trax tape recorders, and 1 Pentron recorder which belonged to Lois Gaudin and was the only two-speed (7.5 ips and 3.75 ips) recorder in the lab.

The language laboratory inventory can best be described as meager and consisted of the following: the one "roll" of student practice tape which came with each tape recorder; the library of model recordings which had grown to 30 tapes and 300 records in French, Italian, Portuguese, and Spanish—by now a collection for beginners as well as advanced language learners. At about this time, publishers began to provide record albums to accompany their foreign language texts (i.e., Henry Holt & Company's *Basic Conversational French*).

For two hours every day, a student assistant recorded attendance, guided students in the

selection of course materials, and the use of the equipment. Although still a classroom, students would convert it into a language laboratory by moving the furniture in order to clear an area around the wall of phonos and the sound-proof booth. The Department of Romance Languages provided a small budget for the purchase of blank discs, model recordings, repair of equipment, and payment for the service of the student aide. In spite of its modest beginnings and existence, this unique installation at Brooklyn College served from 1939-1964 as a model for language laboratories at all academic levels. From Staten Island to Stockholm, visitors and interested educators came for consultation and observation; many came and all were welcome.

In Search of the “Ideal Set-Up”

Convinced that students at all levels should be able to record and playback language drills, Professor Gaudin presented plans for expansion to the administration. The goal was an “ideal set-up,” namely a situation in which “the student is able not only to listen to a recording but also to record his own voice and compare his speech with a model. In order to do this he must be in complete control of the machines he uses.” (Gaudin, 1952)

Although expansion did not materialize immediately, in 1952 the Department of Romance Languages did create the position of Graduate Fellow—a position filled by a graduate student who would supervise the Lab facility on a daily basis. In addition, a technician—who belonged to Buildings and Grounds and the Department of Speech and Theater—maintained and repaired the laboratory equipment.

Although several requests were made for expansion into two adjacent classrooms, in 1954 only half of one room was released for more student positions. The ceiling of the “resulting Lab” was acoustically treated and 18 custom-built student booths were installed. Each over-sized booth contained a phonograph, a Magnecord tape recorder, a headset, and a microphone. Lois Gaudin’s goal of listening-and-recording-while-in-control-of-machines had finally been achieved.

At about this time, a cataloguing and color-coding system by language was introduced.

Helping to augment the number of items in the catalogue was a Hallicrafter short-wave receiver which brought voices from abroad into the Lab. A tape library developed and took precedence over the record holdings. A few faculty members recorded prose and poetry selections for their classes; in addition, the lecturers of foreign visitors were taped. Not surprisingly, day and evening hours of operation increased as budget permitted. Although attendance at this time was voluntary, there were more interested student users than the facility could accommodate. Four classes in just two languages in 1939, swelled to 2353 student hours a semester in nine languages in 1956.

While a request for a third classroom was being denied, expansion was approved into the second half of the adjacent classroom. In 1958, 10 booths were added, each with 2 Ektotape tape recorders, a headset, and a goose-neck microphone. The two tape recorders were connected so that the model and the student response were recorded on the practice tape on the machine at the right side of the booth. The machine on the left side had a “play” head only. Thus, students were able to activate the manual pause lever to record in pauses of their own making. This was particularly useful for advanced work involving prose and poetry which do not include pre-recorded pauses. This system remained appropriate at all levels until the introduction of the dual-track recorder.

Monitoring Student Responses

As more and more elementary and intermediate level students began to crowd into the 28-position Library Lab, the need for an “electronic classroom” where students could work as a group while being monitored by the instructor became obvious. Unfortunately, space was a problem. Although expansion was necessary, proximity to the Library Lab was our priority.

In 1959—and again in 1961—a request was made not only for the third classroom for the Library Lab but also for the three rooms across the hall for the “electronic classroom.” Without the capability of group listening, our usefulness as a support service to language learning and teaching was limited.

To accommodate an NDEA Institute and a Peace Corps training project in the sixties, we devised a method which allowed the 28 positions to receive the same program. Overhead wiring—enclosed in electrical conduits—was installed to connect the rows of booths. Although there was no way to monitor individual performance, participants were able to hear the program, record, and review their responses.

Ten years after the original request, the Library Lab expanded into a third connecting classroom, and although we still did not have appropriate space for a Broadcast/Console Lab, we could now add 12 booths to our existing 28, giving us a more desirable 40-position Lab. At this point, 22 booths now contained a Bell dual-track recorder, headset, and microphone. A wall of shelves was built behind the student check-in desk to accommodate the expanding 1200 open reel tape library. Two small areas were partitioned for a conference room and administrative area.

Patchwork Technology

Growing as we did, in small stages, limited our chances for uniformity. A heterogeneous mix of equipment created administrative and supervisory problems. For example, if students moved from one machine to another, they needed new instructions for machine operation. Students using commercial tapes with pre-recorded pauses had to be directed to the dual-track machines, while those doing advanced work used booths with two monaural tape recorders. When all dual-track machines were in use, students had to be re-instructed in the use of the monaural machines.

In addition to problems of usage, this disparity necessitated the purchase of three different kinds of replacement parts, created diverse repair problems for the technician, and required varied printed instructions in each type of booth. In spite of this patchwork technology and lack of space, however, we did have a well-attended and academically sound facility.

Partially Realized Goals

In 1966, the Language Laboratory served 1400 students for a total of 13,055 hourly visits. At each “grand opening” (for only partially realized

goals) the Lab, the Department, and Brooklyn College enjoyed a spurt of publicity and some momentary glory. The “new” Lab was featured in photos and articles in local newspapers and college publications. In spite of the notoriety, there were only insignificant gains in financial, staff, and space support.

The Lab Director, Lois Gaudin, and her assistant, Bernice Levinson, were the core of the operation, making sure that all hours were supervised, preparing and supervising recording sessions, creating and implementing policies, training faculty and aides in lab use, coordinating classroom learning and laboratory practice, and prodding (always prodding) the administration for support.

Some faculty members were reluctant to use the lab—something they considered a “gimmick.” Some faculty members were indifferent (and remain so to this day). A few faculty members would not mention the lab in class; their students, however, heard about it from other students. Most, although not all, instructors would at least read lab hour of operation announcements in class. A few recorded special materials for their classes, and some even brought recordings for duplication. In spite of a voluntary lab attendance policy, we could expect about half of the language students in the lab on a regular basis. Lack of space dictated that lab attendance could be strongly recommended but not required.

For us, the sixties—a time of slow technological change—was a time of change in terms of improved lab administration and operation. A professional workbench was set up in the rear of the Language Laboratory for a College Lab Technician who was still shared by three different departments. Equipment could now be repaired on site instead of “going out” for service. During day and evening hours, three graduate fellows shared supervision of the laboratory. We purchased a professional Ampex monaural recorder—mounted in a console—for the recording of master tapes. With this equipment, the performer who was seated at a microphone in the sound-proof booth could be monitored from outside the booth. Additionally, we purchased a new Rawdon-Smith high speed duplicator—a time-saving boom which produced multiple shelf copies from the master three copies

at a time. With a new Cinema degausser, we could erase and re-use tape many times over.

Our tape library also grew during the sixties. Arabic, Norwegian, and Yiddish became part of our tape collection. Radio programs, lectures, faculty readings, publisher loan tapes, and tapes copied from records quickly and impressively filled our shelves.

Unfortunately, problems accompanied our improved operations. Equipment acquired at varying times, required replacing at varying intervals and perpetuated technological disparity. It took us three budget years to remodel 25 booths, replace the mechanically troublesome Bell and Ekotape recorders with Califone recorders, and cope with the huge attendance "open admissions" had created all over campus. It did not seem to be a fortuitous time to ask for the three additional rooms needed for the Console Lab *again*.

Nevertheless, until she retired in 1971, Lois Gaudin continued to press for a Console Lab to complement the existing Library Lab. Her successor, Bernice Levinson, advanced Gaudin's ideas by incorporating them into a Title VI Grant for Aid to Higher Education for the Improvement of Undergraduate Instruction.

A Grand Design

The Levinson proposal called for the construction of a 40-position Broadcast Lab with a remote-control teacher console for transmitting and monitoring programs and provisions for group viewing of films and slides. Furthermore, the proposal called for the inclusion of a master tape room, a recording room, and a conference area. This was the proposed "Electronic Classroom," the ideal companion to the Library Lab—all in what would be called the "Language Learning Center." Part of the vision—but not part of the original proposal—was an adjacent room for CAI terminals, a centrally located office for the Director, and a TV monitor in each carrel.

The Grant Award

Notification of the Grant Award came in June of 1972. Brooklyn College had agreed to provide both the space for the "electronic classroom," and

the matching funds for the remodelling of the classrooms which were to be transformed into the Broadcast Lab II. In anticipation of an enlarged operation, Professor Levinson asked for and was granted the full-time services of a Lab Technician. A seemingly large amount of money at the time, \$32,648 were encumbered and a contract awarded for the purchase of a complete, 40-position, remote control SONY reel-to-reel Console Lab. All lab components, carrels, chairs, headsets with microphones, 16mm film projector and screen were soon delivered and stored. Installation was scheduled for Fall, 1973.

Oh, It's a Long, Long Time from 1973 to 1980

Readers of this evolutionary lab tale will think us in error if not a bit strange when they read that the stored lab of 1973 became the operational lab of 1980. No space was reserved, no rooms were remodeled, no construction contracts were awarded. For seven years, the Laboratory Director, the Laboratory Technician and a few loyal assistants visited our "Lab" stacked in cartons in an unused staff room. To deter thieves, the technician, noticing a SONY label showing through a transom, climbed up the cartons and obscured the label with newspapers. For seven long and lean years, we stood by as our Lab components atrophied in that room. As we continued to press the administration, they acquiesced and put a lock on the storage room door.

At the inauguration of a new president of the college, the storage room door and the cartons were opened and negotiations began with the vendor of the equipment. The recorders were expected to be operational except for rubber belts, drives, and pucks. The administration agreed to renovate the space provided we guaranteed five years of minimum use.

The New Lab Was Born Old

In November, 1980, the new facility officially opened and was inaugurated with a champagne, ribbon cutting ceremony. Fortunately, the lab functioned, but there were problems. The technician soldered and resoldered; a maze of

wires (19 from each carrel under the floor and running to the console) were grouped and re-grouped. The "new" Lab was born "old," but it served then and still serves now. We have already outlived the five-year prognosis of its demise. The Console Lab needs updating, but at least we have a facility to update.

The Seven Lean Years

During the time we were waiting for Lab II to be installed (1972-1980), Library Lab I continued to develop and serve the department. These were lean years for many college operations due to the New York City financial crisis. These were the years when there was no budget for supplies or equipment. Recording tape was used and re-used so often until print through occurred. Tape boxes were covered and re-covered with masking tape until they were masking tape. Even unwrinkled leader tape was re-used.

The equipment in Lab I was heavily used and aging. Spare parts were no longer available. The technician cannibalized, did some creative rebuilding and kept us running. The physical plant was also deteriorating. Cleaning flakes of paint and ceiling plaster from booths became a morning routine. There was no money for staff expansion, and Lab Hours of Operation were reduced from 45 to 31 per week.

New Lab Support

A new college administration, the opening of Lab II, and the easing of New York City's financial woes brought favorable publicity and new support for the labs. The college newspaper and city newspapers printed photos and laudatory texts about what we were doing to enhance foreign language proficiency. A review of a class in beginning Chinese appeared in the August 1983 "Education Supplement" to the *New York Times*. This sparked a flurry of calls and visits from out-of-state lab administrators. The U.S. Information Agency sent a TV crew to videotape a typical day in the two Brooklyn College Language Labs. At this time, the 1958 request made by Professor Gaudin for a full-time supervisory position was finally acknowledged by the College Administration, and Libby

Gershansky was appointed as full-time Language Lab Supervisor in the Higher Education Officer series.

It was now possible to schedule a class in the Console Lab while the Library Lab was open to the college community. Material broadcast from the console could also be made available to students library-style, as it were, for individual study. Whereas in the past lab attendance could only be strongly advocated, now it became a requirement for all beginning and intermediate level language learners. In the Spring of 1982, a departmental lab requirement of one hour per week was instituted.

Most faculty members cooperated by incorporating lab attendance as a component in the final grade; they also checked the work students completed in the lab manuals. Even the few colleagues who resisted a uniform teaching program with a lab component could find their students attending the lab regularly. Needless to say, one or two instructors remain consistently hostile to the lab component. Nevertheless, 800-1000 students profit from visits to the lab.

Most students comply cheerfully with the lab requirement. A few ask for permission to take tapes home instead of attending lab. Knowing all too well the pitfalls of allowing tapes to leave the confines of the lab, we have declined. We did try a brief tape lending experiment, but the missing and damaged tapes made us conclude that it was a failure. In some cases, publishers have given us written permission to allow students to copy "in situ" on their own recorders as they receive the program. By allowing approved copying and duplicating, by increasing hours of operation to 43 per week—including two evenings and Saturdays—requests for borrowing have become sporadic. In another tried (and failed) experiment, we tried to make the instructor responsible for a "class cassette" to be shared by a few "special" students whom the teacher felt could profit from the exposure at home. Few instructors were willing to avail themselves of this service; they were unwilling to even fill out the necessary request form for the service. Even among the seven instructors (out of 40 in the department) who were willing to participate, there were losses and damaged cassettes.

Patchwork Problems Reappear

Late in the progress of technology, but just in time for us, Library I was, at last, updated to meet current standards in 1986-1987. Although foiled again in our desire for uniform equipment, we were able to remodel the complete facility in one budget year. Relief at being able to update from archaic, reel-to-reel cassette was tempered by the fact that technology moves more quickly than state and city budgets.

For openers, we could not obtain the same cassette recorders for all 40 positions in Library I. With the SONY ER-840s discontinued in 1986, our 1987 purchase had to be 20 SONY ER-5030s. Prices had risen so that even the purchase of a spare machine was impossible. We were accustomed to lack of uniformity, but the newer model presented other annoying problems. While the ER-840s had a self-contained power source, the newer ER-5030s required a more cumbersome external power supply for each group of 3 or 4 machines. In spite of vendor assurances that these power supplies were trouble-free, we faced breakdowns when too many booths were connected to a single power supply. In addition, the new machines required a different headset/microphone. We sigh with resignation, but carry on despite the fact that in spite of all our awareness and past experience, we have not been able to prevent a recurrence of the "patchwork problems."

Enter Video

In 1986, a special "non-recurring" allocation was granted to the department for the purchase of a tri-standard VCR and monitor. However overdue, this equipment is enthusiastically used by several instructors. As with all new programs, the time involved in preparing and previewing video material discourages some instructors. Student reaction, however, is decidedly positive. The showing of "A Vous la France," the BBC video course for first year French, was the impetus for others to redesign their courses. We now have video course in Chinese and Italian as well, and a course in German is under consideration. Apart from a complete video language course, a few instructors have opted for the use

of appropriate video versions of movies and documentaries. We now have available a small collection of videotapes and can requisition additional ones from the Audio-Visual Department.

Approaching Our 50th Year

As we approach our 50th year, we see the remodeled Library Lab I as "new" and the new Console Lab II as "old." Thus, evolution never ends. We now strive to bring Lab II, with its SONY reel-to-reel console and booths into the modern Information Age. Amazingly, this technologically antiquated facility serves even as it slowly expires. The alternative to updating now is more frequent breakdowns and extinction. In the meantime, the technician has created a technological bridge by replacing one reel-to-reel recorder on the console with a dual-track cassette machine. But, even as we cope, our eyes are on a touch-screen, computerized console and newly designed student cassette positions. We talk about adding individual video monitors and micro computers.

We do more than talk, even if our proposals for support from outside sources are answered with gracious letters of rejection. The present state of grant distribution does not favor funding for equipment but rather encourages the exploration of untried, innovative methodologies. Although we agree that methods must not remain static, we also know that laboratory facilities cannot remain as they are.

Knowing that piecemeal renovation is folly, we are in the process of writing a proposal to the college administration that argues for the need of a uniform, synchronized, and installed-at-the-same-time approach to remodeling and technology which is far more advantageous than the "patchwork" approach of the past. Current estimates for a 40-position installation (without computers and video monitors) is \$65,000, not much by today's monetary standards, but a mountain to scale when compared to departmental budgetary standards. Because waiting periods escalate prices, there is an urgency to our mission as we continue to make our request. As always, we set aside the total vision, requesting only essential equipment.

A Multi-Lingual Siren Song of Student Voices

The evolution of the Brooklyn College Language Laboratory continues. As equipment ages and technology advances, we try to keep pace; we try to catch up; we fall behind; we request support; we endure rejection. Disappointment is tempered by the goals we have achieved and by the special "music" of the Language Laboratory, a multi-lingual siren song of student voices, sweet to the ears of Language Lab Directors.

The Language Laboratory at Brooklyn College has acquired a progressively stronger momentum in spite of a history of obstacles. We take pride in saying "There has always been a Language Laboratory at Brooklyn College." Facing the next half-century strong in tradition, we will continue this tale as we evolve.

References

Gaudin, L. S. (1952). The language laboratory. *French Review*, 25(4), 291.

Author's Notes:

(1) Member of the Department of Modern Languages and Literatures at Brooklyn College from 1934-1971. Founder and Director of the Language Laboratory from 1939-1971. Consultant and author of many articles on language laboratories. Phonetics and Audiovisual Editor of the *French Review* from 1939-1964.

(2) Alternate name for "microphone," one of the first magnetic recorders permitting a one minute recording on a steel band.

J.E.T.T. Contributor Profile

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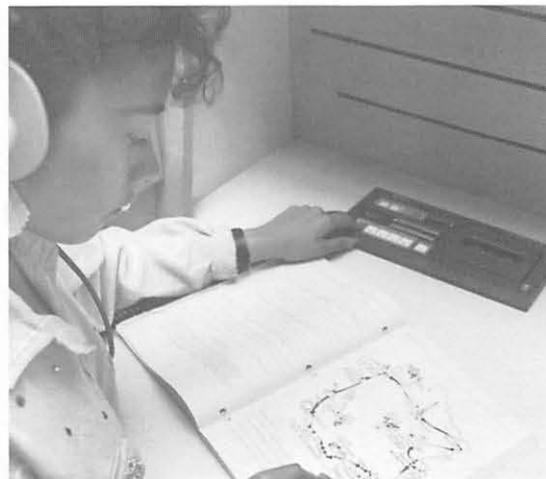
Brooklyn College Language Laboratory 1955. New booths for phono & tape recorder.



Brooklyn College Language Laboratory 1965. Two tape recorders in each booth to simulate dual track.



Brooklyn College Language Laboratory 1980. Console Lab II.



Brooklyn College Language 1987. Library Lab I updated.

