

HOW EFFECTIVE THE LANGUAGE LAB?

A Report of the Pennsylvania Research Project

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Which of three audio-assistance systems—the audio-active, audio-record language laboratory or simply a classroom tape recorder—is best suited economically and instructionally to the development of pronunciation and structural accuracy in the typical secondary school situation? In 1965 the Pennsylvania Foreign Language Research Project, a joint venture of the State Department of Public Instruction and West Chester State College near Philadelphia, undertook a one-hundred school statewide experiment to determine the relative effectiveness of various teaching strategies and laboratory systems. Results of the first year of the study indicate that the language laboratory in a typical secondary school situation is not effective.

Pennsylvania has long been committed to a quality modern foreign language program. Hundreds of language laboratories are installed in its public schools. The State has mandated a four year modern foreign language sequence in each school system. Since 1963 the State has required that candidates for teacher certification present acceptable scores on the skills portions of the *MLA Proficiency Tests for Teachers and Advanced Students*. Implicit in this strong state support for foreign language programs is the responsibility for the state to provide leadership on problems of curriculum improvement and in the evaluation of educational innovation.

Accordingly, a large scale experiment was undertaken in 1965 to determine the relative effectiveness of three modern foreign language teaching methods and three language laboratory systems. Sixty-one French I and forty-three German I classes were assigned to one of seven possible strategy-laboratory combinations. Students were given extensive pre-experimental testing, mid-year testing and final testing.

In any "real-life" educational research, the many variables are admittedly difficult to control. The Pennsylvania Project attempted to preclude some of the criticisms of previous research studies on laboratory

effectiveness. Specifically, an attempt was made to control variables by using large numbers of classes, randomly assigned to treatments; teacher proficiency testing, training, and experience parameters; observation of teachers; and the use of text and test materials in wide use and readily available to all schools. Randomization of possible biasing factors was attempted by including large numbers of classes and students from many broadly representative schools throughout the state.

The statistical analysis was a multivariate analysis of covariance using intact class means, the best analysis permitted by "the state-of-the-art." The analysis was done at the Computer Science Center of the University of Maryland.

Final data, twenty-five discrete measures of intelligence, aptitude and foreign language achievement, were obtained on 2,171 French and German students. Ten percent of these students, selected by random numbers, were given additional tests of speaking and writing skills.

The evaluating of the several language laboratory systems is based upon eighty-seven French I and German I classes assigned to three different laboratory treatments: (1) a classroom tape recorder was used approximately ten minutes per day, or the classroom tape recorder plus a minimum of two thirty-minute periods per week in (2) an audio-active language laboratory or (3) an audio-record laboratory. Recorded materials were the standard taped programs produced by either Holt, Rinehart and Winston or Harcourt, Brace and World, publishers of the "functional skills" texts used in the experiment. The audio-active versus audio-record comparison is based solely on classes and students who were *randomly assigned* to each type of treatment. Students stayed in their assigned treatment throughout the school year.

Since the experiment was an attempt to represent the real school situation, the laboratory maintenance was made the responsibility of the school. This phase of the experiment indicated serious shortcomings in laboratory administration.

Teachers averaged ten years experience and forty-five semester hours of graduate education. They scored at the sixty to sixty-fifth percentile of the pre-Institute norms on the MLA *Teacher Proficiency Tests*. Teachers were trained in proper laboratory operation.

Tests used in the evaluation were standardized measures, commercially available to all teachers, except for a *Listening Discrimination Test* developed for the Project by Dr. Rebecca Valette, Director of the Language Laboratory at Boston College.

TABLE I
ANALYSIS OF VARIANCE
TAPE RECORDER vs AUDIO ACTIVE vs AUDIO RECORD
LABORATORIES

	French (55 classes)		F-ratio	p.
	F-ratio	p.	German (34 classes)	
1. MLA Listening Test	.58	.56	.82	.45
2. MLA Reading Test	2.02	.14	.13	.88
3. Valette Listening Discrim.	.73	.49	.69	.50
	(205 students, 35 classes)		(138 students, 24 classes)	
4. MLA Speaking Test (mid-yr.)	.51	.60	.15	.86
5. MLA Speaking Test (final)	1.57	.22	.20	.82

A comparison of the three audio-assistance systems is shown in Table I. There is no significant amount of variance among the groups on the MLA *Cooperative Classroom Listening, Speaking or Reading Tests* given both at the end of one semester or one full year of instruction. To permit a more precise evaluation, the sub-parts of the final *Speaking Tests* were individually compared and are shown in Table II.

TABLE II
ANALYSIS OF VARIANCE FINAL SPEAKING SUB-TESTS
TAPE RECORDER vs AUDIO-ACTIVE vs AUDIO-RECORD
LABORATORIES

10% random sample of randomly assigned classes

	FRENCH (35 classes)		GERMAN (24 classes)	
	F-ratio	Prob.	F-ratio	Prob.
1. Mimicry	2.047	.139	.121	.887
2. Crit. Snds.	.562	.573	.072	.931
3. Global	.674	.514	.267	.767
4. Pict. Ques.	1.171	.317	.245	.784
5. Pict. Des.	1.231	.300	.376	.689
6. Pict. Seq.	1.211	.305	1.000	.378
7. Total Sepak. Test	1.570	.217	.204	.817

What do the figures mean? Simply that in the experimental population—which was considered a typical secondary school cross section—it made absolutely no difference which audio system was employed. Equal results were obtained with a classroom tape recorder, the audio-active laboratory and the audio-record laboratory.

What does this mean in terms of implications for the instructional program? Certainly the classroom tape recorder is simpler and much less costly yet was as effective as the laboratory. It does not, however, permit the versatility and flexibility of the laboratory in providing for individualized instruction and testing. Perhaps the use of the language laboratory in a typical school class lock-step drill arrangement is a perversion of the true function of the equipment. Many questions still remain unanswered as the public school moves closer to individualized instructional programs.

The full first year report of the experiment entitled "An Assessment of Three Foreign Language Teaching Strategies Utilizing Three Language Laboratory Systems" (Project OE-5-0683) has been accepted by the U. S. Office of Education and is available through MLA ERIC. The study continued through a second year with a seven hundred student replication of level I. Tentative results are confirming the first year findings.

Joseph Hutchinson has pointed out that "We already know that the language laboratory (or electronic classroom) can be effective; what remains to be seen is how long it will take our schools and colleges . . . to learn how to use them effectively." Apparently the typical secondary school language laboratory program is no more effective than regular use of a tape recorder. The profession now must seek ways to increase the instructional effectiveness of the language laboratory.