

# EFFECTIVE USE OF THE LANGUAGE LABORATORY

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## I

The Language Laboratory has become an integral part of modern foreign language instruction, and since 1958, more and more high schools and colleges in Japan and abroad, have been installing Language Laboratories, as the objectives of comprehension and speaking have come to be set as primary aims of modern language teaching.

The theory and practice of the Language Laboratory (hereafter referred to as LL) has been defined in detail by scholars such as Lado in *Language Teaching* and by Stack in the *Language Laboratory in Modern Language Teaching* and by many others, most of which have translations in Japanese.

Before going into a discussion of effective LL practice and its role in the teaching of foreign languages, I would like to shortly review the premise on which we stand in our practice of LL.

It is needless to say that the LL has its due place in language teaching only when and if we recognize that the spoken form of a language is central to effective teaching, and that it should have as large a share in instruction as do the written forms of a language, if not more. I quote here from Edward Stack on the theory of the LL.

The audiolingual theory of language learning is that the audiolingual forms of the language must be controlled before the graphic skills are taught. Prior knowledge of the spoken language will enable the student to read and write all the more quickly and efficiently.

The steps in teaching the language are (1) hearing, (2) speaking, (3) reading, and (4) writing. The first two are audiolingual skills; the last two, graphic skills. Hearing is first because the student must be able to recognize the sounds of the language, and differentiate among its various sound components. Unless he recognizes phonemic differences, he cannot successfully undertake to produce them. Speaking (sound production) includes training in correct positioning of the vocal organs and formation of linguistic habit through intensive practice.

The above view is shared by all those involved in the practice of the LL, and is the premise on which the practice is carried out. This would suggest that the LL has its due place and greatest role in the beginning stages of acquiring a foreign

language, which will be discussed later.

## II

The function of a full laboratory has also been defined as follows.

A Language Laboratory is fully equipped if the student can: (a) hear the tape distinctly, (b) stop, rewind, and replay the tape at any time, (c) work at his own pace, (d) select his materials freely; and further, if the teacher can: (e) listen to individual students without disturbing them, (f) communicate with the student, (g) control the programs when he so desires.

A fully-equipped LL can perform the following functions, which cannot be performed in a classroom.

1. The primary function of the LL is drill in a foreign language, and the tape can be repeated endlessly. It takes care of the great amount of repetitive drill necessary for the mastery of a language, and thus frees the teacher from this drill work and saves valuable class time for explanations, instruction and flexible application of the language.
2. The LL with its individual booths also gives each student the opportunity to recite continuously, and permits 100% individual participation. In the classroom situation only one person can speak at a time. One student is active, and the others passive. The laboratory permits all students to respond continuously and simultaneously, and each student is actively involved in practice the whole of the time. Providing for this concentrated involvement 100% of the time is, in my estimation, one of the greatest advantages of the LL.
3. The LL can be a most effective way of providing for individual differences, and thus meeting individual needs. It provides a means of using the student's time more economically and effectively, for he may advance at his own pace without disturbing others.
4. The teacher can provide much more individualized instruction in the laboratory. He can monitor each student and give individual assistance without delaying or wasting the time of the rest of the class. Thus individual correction, and instruction is possible even when dealing simultaneously with the whole class.
5. Tapes of different degrees of difficulty can be played at the same time for differing abilities of the students. This permits the class to be divided into any number of levels, without increasing the number of teachers. It thus multiplies the efficiency of each teacher.
6. The laboratory provides opportunity for the students to listen to good models of the target language (the foreign language he wishes to master) for imitation and

manipulation. They may hear a variety of good models in the laboratory and become accustomed to many voices and varieties of the target language.

7. The laboratory encourages self-evaluation. The student may compare his performance with that of a standard model, and hear himself objectively. This, it seems, is an indispensable part in acquiring a second tongue. And in the laboratory where an accurate model and immediate correction of mistakes are available, the student is able to verify how he is progressing.

### III

Now, we come to the problem of the effectiveness of the Language Laboratory, and the main question here is whether students who have had instruction with laboratories achieve better results than students who have not. Most language teachers agree that lab students (students who have had training in the laboratory) are more facile in the use of the language than non-lab students (students who have not had laboratory practice), but it must be admitted that most of the evidence is based on experience and observation rather than on experiments.

Obtaining experimental evidence of effectiveness is difficult, since it would be difficult to define the aims, in other words, in what we are to measure achievement. But if the aim can be set, and tests so devised to check specific features of achievement, this may not be impossible. (Refer to *An Evaluation of the Language Laboratory* in Hiroshima Jogakuin College Bulletin, 1968.) The following is a short account of the report.

This study was begun in an attempt to evaluate the effect of the Language Laboratory in the school curriculum to find some clue as to what an effective LL should be and how it should be conducted, our interest lying especially in effective teaching materials and methods. This we have tried to do by finding the students' reaction to the LL as now performed, through evaluation of the progress made by the students. For our calculations, we have made use of the product-moment correlation coefficient.

A LL test was given to see the progress of the students. Course I consists of a group of 116 Freshman students tested first in April 1967 directly upon entering the College, and again in March 1968 after 2 semesters of sittings in the LL. Course II consists of 127 Freshman students tested first in April 1968, then in Sept. of the same year after 1 semester. Course I and Course II have respectively been divided into 4 groups (Group A, B, C and D) according to the degree of progress made. The EE test (Entrance Examination test) has been introduced as a norm.

The following is a brief summary of the results obtained.

1. Subjects who have acquired lower marks on the first LL test have shown a greater progress than those with higher marks on the test.  $r = -0.478$  and  $r = -0.535$  for Course I and Course II respectively proves a definite correlation which is statistically significant at the 1% level. This shows significance in that,

- although the teaching material has not shown any effect on the best students in the upper level, it has been effective in raising the minimum level of the Freshman students' fundamental ability in oral and aural English.
2. The average degree of progress made by Group A in both Courses is considerably higher than the average progress made by Group D. To organize classes in such a way that they are divided into groups of similar ability from the outset would seem to lead to a better effect in the LL. Should circumstances permit, a separate program which provides educational incentive to fully develop the ability of the superior students who comprise Group D would seem a requisite for rendering individual learning in the LL what it implies in the true sense of the term.
  3. Subjects who have acquired high marks in the first LL test have also acquired high marks in the EE test taken upon enrollment in the English Dept. The correlation here is  $r = +0.430$  and  $r = +0.436$  for Course I and II respectively. If the EE test be considered the independent variable, what points a student may acquire on the LL test may be predicted from his score on the EE test. Judging from this, the results of the EE test would seem a good criteria for dividing the students into groups of similar ability for LL practice.
  4. Progress of the subjects on the LL test does not correspond to progress on the EE test. No graded progress is seen in Groups A, B, C and D in the EE test as compared with the graded progress in the LL test. This would seem to indicate the LL training to be somewhat unique in its role in the language teaching curriculum.

In this study, however, since all Freshman students were required to take LL training, a comparison between lab students and non-lab students could not be made.

A survey of past studies shows some evidence that students who are instructed by using the laboratory are better in speaking skills than those instructed without a laboratory. In 1960, the Bureau of Audio-Visual Instruction of the Board of Education of the City of New York conducted a four-year study of the use of Language Laboratories in Secondary Schools. The experimental lab groups used the laboratory thirty minutes twice a week for first, second and third year French. The achievement of the lab group and the non-lab group was studied. Results showed that first year French lab students achieved a greater fluency in French than non-lab students. Second year French lab students achieved greater fluency and better intonation than non-lab students, third year French lab students failed to achieve a superiority in speech characteristics but developed greater ability to understand French. It is speculated that one reason why the third year French lab students did not show superiority in speech was the fact that they had already developed certain pronunciation habits during the two years prior to their use of the LL. Significantly, the study found that when the experimental lab groups who had two thirty-minute sessions a week in the laboratory and thus sixty minutes less of regular classroom

instruction, took a standardized French test, they achieved as well as the non-lab control groups in traditional phases of language instruction, such as grammar, reading, etc.

About the same time as this Bureau Report, another report by Raymond F. Keating, entitled the "*Study of the Effectiveness of Language Laboratories*" was released in 1963. This Keating Report raised serious doubts about the effectiveness of the Language Laboratories and received much publicity. The intention of the study was administrative rather than methodological, and was conducted by the Institute of Administrative Research of Teachers' College, Columbia University, to find out whether the money invested in laboratories was well spent. The Keating Report was based on a study of 5,000 students and conducted in twenty-one schools of the Metropolitan School Study Council (areas outside New York City) during the period 1961-62.

In testing the students, the study concentrated on reading comprehension, listening comprehension and speech production. Contrary to the Bureau Report mentioned above, results showed the non-lab students to be superior to the lab students on all these measures, except speech production at the end of the first year. In every test, high IQ students recorded higher scores in the non-lab groups. However, despite its shortcomings, the study showed that the laboratory developed good pronunciation and fluency in short phrases at the level at which specially prepared materials for the laboratory were available in 1961.

In the Keating Report, we must take into consideration the fact that specially prepared materials were not yet available at the time, and also the fact that the tests used in the study were constructed in 1940 before the advent of the Language Laboratory and aural-oral emphasis in language teaching, and originally designed to test students accustomed to reading-oriented texts.

It may be said that the former test conducted by the City of New York was a much more valid test of speech production than the Keating test. The tests of speaking ability required answers to questions on a sight-reading passage and scores were given for fluency, pronunciation and intonation in sight-reading, and for appropriateness, grammatical correctness and fluency in response to questions. In no case did the traditional skills of reading and writing suffer because of time taken for laboratory practice.

The New York City Report also shows that regular daily practice for twenty minutes produces significant improvement in speaking and listening skills, whereas a laboratory session once a week does not. The Report concludes that "the mere installation of a LL is no guarantee that improvement in linguistic skills will occur automatically. Good results demand equipment of good quality with potential for a

variety of learning experiences: teachers skilled in handling equipment; materials prepared specifically with regard to the goals of the course and techniques of language learning; and careful allotment of laboratory time.

These are the very factors ignored in the Keating investigation, which would seem to account for the conflicting results in the two studies.

#### IV

We have thus far seen that the LL is a means for applying the audio-lingual approach to language instruction, where the development of the skills of aural comprehension and speaking are stressed. We have also looked into the nature and function of the LL as a tool for improving instruction in foreign languages, and made a brief survey of past studies on the effectiveness of the LL in foreign language instruction.

In light of these observations, it would seem that two kinds or uses of the LL may be conceived to meet our needs in the English language program or curriculum in the high-schools and universities in Japan. I would next like to discuss the two types and their requirements.

I. The LL as an extension of the classwork. Here, the LL is a controlled and intensified classroom. It allows for simultaneous handling of the students in channeled, concentrated drills and practice. Classroom instruction and language laboratory drills must complement each other. The laboratory materials should be chosen from the current text or reading studied in the classroom. Before going to the LL, the students must be informed precisely what is to be learned, what is to be accomplished, and what the utterances mean. In other words, the students must have comprehended mentally in class, the grammatical elements to be practiced in the LL. The LL renders the contexts of their meaning wider and the content of the laboratory drills more significant.

Then the teacher must provide ways for the students to use the results of their LL practice in an actual person-to-person communication situation in subsequent classroom lessons. The LL is thus conceived as an extension of the classwork, to be followed again in the classroom.

In the teaching of English at the beginning state, it would be advisable to adopt this system for the greatest effect. In this way, individual differences may be brought to the minimum to ensure better effect in the classroom.

But it must be remembered, especially at the junior high-school level, that the teacher must be the central figure. The LL is not a teacher and it will not do the teacher's work for him. The teaching must be done in the classroom by the

teacher in a personal interchange with the students. The students cannot ask questions of the machine, nor can the machine adapt its teaching techniques to the moods and psychological peculiarities of the individual. We must here, also remember that junior high-school students are already past the age of automatically acquiring a language by merely listening to it. This fact has been presented to us by Moshe Anisfeld in *Psycholinguistic Perspectives on Language Learning*. He states that the ability to formulate linguistic rules diminishes with increased age. This would explain the observations that pre-teen-age children learn English faster than teen-agers and adults. The amazing thing about language acquisition is that out of a collection of random, unorganized, and often ungrammatical linguistic utterances, the child manages to form a well structured system of rules. However, to high-school students the pronunciation and rules must be taught. And we must keep in mind the fact that imperfect hearing of the sound system results in weaker memory of utterances and messages. Improvement of pronunciation in hearing and speaking results in improved memory. And it is at the Junior High School level, when the students first encounter English, that the correct pronunciation must be taught to the maximum degree possible. Pronunciation here implying sounds, combination of sounds, stress, pitch, timing and juncture. In other words, all the phonemic elements of the spoken language. Acquiring skill in hearing (understanding) and speaking provides a foundation for more rapid control of reading comprehension and writing.

The New York City Report has revealed third year French lab students did not achieve better speech characteristics, the speculated reason being that they had already acquired certain wrong habits during the two years prior to their use of the LL.

One more speculation in regards to this use of the LL would be on the time allotted to LL practice. The value of frequent and regular practice in the formation of a skill is sufficiently established and thus it would, without doubt, be more effective to have several short periods during the week, than one long solid period. Mackay and Oliva suggest three to five half-hour sessions during the week. "Based on psychological principle," Oliva says, "the student can maintain his concentration for thirty minutes, and after that restlessness and boredom set in." The New York City Report has also supported this view.

II. The LL as a self-teaching device for more advanced students. Here, the laboratory allows for individual practice where the students may select their own materials according to their own levels of achievement. This would mean a LL operated on a library system. The machinery and the material and assistance must always be available. A clinician or assistant must always be there to assist

and advise the students. The laboratory materials may include anything from carefully structured audiolingual exercises in which the students participate in a controlled way to all kinds of material for listening comprehension when the students are past the stage of basic structural drills. Scenes from plays being read in class, poems being studied, interesting short stories or biographies of famous men, and lectures and news bulletins may be taped and used for listening comprehension in the laboratory. Even the sound track of a foreign film or documentary can be studied in the laboratory before or after the showing of a film. There are countless possibilities according to the resourcefulness of the teacher. The one requirement would be that the materials be good models of the target language, clear and audible, graded and purposeful.

A systematized tape library and program must be adopted to render this type of laboratory practice possible. Under the library system, each student is able to make use of the laboratory as a self-teaching device, and practice at his own pace by selecting the tape he wants to hear from any number of tapes. If the tapes are graded, he is able to take out the tape with the work which follows what he has already completed.

The pattern of regular laboratory sessions may be adopted for class groups, and two or more tapes of different levels may be channeled to different groups. Again certain programs may be scheduled and played by an attendant at certain hours, and the students choose the program and hour they will listen to the tapes.

In closing, I quote from Mackay in *Language Teaching Analysis*.

The degree of automation in language teaching depends on the extent to which the potential of the machine is actually put to use. But it is not the machine that determines the quality of the automation; it is what we put into it. The most highly automated program of language teaching is no better than the material it contains.

And thus we come to the most important and difficult problem of all, the problem of teaching materials and programing, which is open to much discussion and criticism this day.

### **Abstract**

The Language Laboratory has become an integral part of modern foreign language instruction, and since 1958, more and more schools, both abroad and in Japan, have been installing Language Laboratories as the objectives of comprehension and speaking have come to be emphasized and set as one of the primary aims of foreign language teaching.

This study is based on a review of the nature and function of the Language Laboratory as a tool for improving foreign language instruction, and on a survey of past studies on the effectiveness of Language Laboratories.

In the light of the material above, some general conclusions are drawn for effective use of the Language Laboratory, and two kinds or uses of the Laboratory are conceived to meet our needs in the English language program or curriculum in the high-schools and universities in Japan.

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