

A DESCRIPTIVE STUDY OF LANGUAGE LABORATORIES
AND OF THEIR USE IN THE TEACHING
OF FRENCH AS A SECOND LANGUAGE
IN MANITOBA SECONDARY SCHOOLS

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ABSTRACT

Language laboratory equipment is described in this study and criteria for selecting laboratory equipment are proposed to guide school personnel in making a wise choice. Considerations concerning the laying out of the language laboratory room are offered. Administrative guidelines are set out for the effective use of language laboratories. Advice for the preparation of recordings for the laboratory library is given. Five high school French programs are evaluated as to their usefulness in a language laboratory and as to their linguistic soundness. Finally some of the areas of need in the training of teachers of French for the effective use of laboratories are identified.

These recommendations are arrived at on the basis of a survey of the literature on language laboratories and on linguistically modern methods of language teaching. The equipment that is known to be available is classified as to its features and qualities described in promotional literature. The recommendations of authorities in the field and the experience gained in the planning and supervising of the language laboratories in the Winnipeg School Division are drawn upon to make practical suggestions concerning the choice, installation, and use of this equipment.

Since the effectiveness of this equipment depends considerably on the type of program that is used with it, five linguistically modern programs are evaluated. These five programs had been selected for their high quality by a provincial curriculum committee in Manitoba. The criteria used for evaluation are largely those given by a prominent contemporary linguist, Robert Lado.

In the matter of teacher training, the writer proposes that teachers need competence in the four skills of language, in various branches of linguistic science, and intensive contact with the cultural milieu.

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CHAPTER I

INTRODUCTION

Mechanical aids are gaining acceptance in the field of language education. Educators, subjected to a barrage of advertisements from manufacturers describing the best equipment, and to exaggerated claims from enthusiastic protagonists within their own ranks about the use of this equipment, are left in a state of confusion and suspicion. Their indecision is compounded by the fact that most of the literature available so far is based on experience gained in colleges and universities, or in American high schools where the conditions of language instruction have been different from those found in Manitoba high schools. The available conclusions of studies are often contestable and contradictory.

A review of the stages in the development of laboratory equipment and of laboratory techniques, accompanied by a survey of the various types of equipment available and by a consideration of the ways the equipment may be used can provide educators with needed help. The considerations about equipment are more valuable if they are placed in the context of language programs and teacher preparation.

THE STUDY

In this study language laboratories are described, techniques for their effective use are considered, high school French programs are compared, and recommendations are made for the selection and the

effective use of these programs in conjunction with laboratory installations. Recommendations are also made as to the type of training that teachers should have in order to use the equipment and the programs effectively.

Limitation of the Study. The discussion will deal exclusively with the teaching of French as a second language and not with other second languages such as, German or Ukrainian, because provincial laws create slightly different situations for the teaching of the other second languages, and because the linguistic problems differ from language to language. The study is limited to Manitoba because this province differs considerably from surrounding provinces and states in the emphasis it gives to the teaching of French. Consideration will not be given to the use that universities can make of laboratories because in the advanced stages of language learning the uses of laboratories are different.

In the consideration of programs the writer will refer to beginners' programs and to programs dealing with the development of audio-lingual skills. He will refer incidentally to advanced programs, the teaching of reading and writing, and the problems of testing. He will attempt to formulate principles illustrated by examples rather than to give complete detailed specifications for various types of laboratories or a complete new French program.

Importance of the Study. Language laboratories are gaining wide acceptance. The language departments in most Canadian and American

universities now have access to language laboratories.¹

Installations in American high schools in the 1957-58 term numbered sixty-four and were spread over twenty-three states and the District of Columbia. In the same year there were two hundred and forty-one college installations spread over forty-one states, the District of Columbia, Hawaii and Puerto Rico. In 1963, an estimated ten thousand were in operation.²

In Canada, high school installations can be found in Kitimat, Edmonton, Saskatoon, Winnipeg, Windsor, Toronto, Scarborough, Chatham, Montreal, and Halifax. More than thirty large companies have gone into the distribution of laboratory equipment in North America. Many audio-lingual and audio-visual programs are now on the market. The American Summer Language Institutes, numbering in excess of thirty every year and financed under the National Defense Education Act, give strong emphasis to language laboratories in their program of teacher training. Several large conferences have dealt with related topics. One of these that dealt with pattern drills was the March 1962 Conference at Indiana University which drew more than eight hundred delegates from North America. Moreover, since most of the development in language laboratories has taken place in the last twenty years, the thesis topic is pertinent.

There is a trend in language teaching towards greater emphasis on the audio-lingual skills. Language is considered more as a skill of communication than as an object of academic dissection. In their search

¹Marjorie C. Johnston and Catharine C. Seerley, Foreign Language Laboratories in Schools and Colleges, No. 3 (Washington: U. S. Office of Education, Bulletin 1959, No. 3), pp. 73-84.

²Elton Hocking, Language Laboratory and Language Learning (Washington: National Education Association, 1964), p. 1 citing J. D. Finn, Studies in the Growth of Instructional Technology, I: Audio-Visual Instrumentation for Take-Off. Occasional Paper No. 6 (Washington: National Education Association, 1962).

for greater efficiency in developing audio-lingual skills, Manitoba schools are investigating language laboratories and the related techniques. Therefore, a summary and evaluation of what has been done in the United States so far, and an application of this experience and thinking to the Manitoba situation seems of importance.

DEFINITIONS OF TERMS USED

There are many terms used in connection with language laboratories that have little meaning to the uninitiated. Since a large part of this paper is devoted to the description of laboratories and the accompanying educational practices, the definition of many terms is left to those sections. The terms used in the title, however, need to be clarified.

The Language Laboratory. Practice condones the use of this term to describe any equipment which will reproduce language sounds in a comprehensible manner. Many functions have been added to this basic one. Among them are the visual aspect and the intercommunication feature. The eight millimeter projector, closed-circuit television, long-distance program selection, and private monitoring have found a place. Although these exceed the minimum requirement for inclusion under the term in this paper, these known additional features will be described in a later chapter. A suitable definition of language laboratories is then "installations of mechanical and electronic equipment to facilitate language learning. . . ."³

³Johnston and Seerley, op. cit., p. V.

A Second Language. This term is preferred to "foreign language," or "new language." The language is second in the sense that the school, assuming that another language has preponderance in the community, carries on the bulk of its instruction in that other language. Of course, within the group there may be a minority for whom the second language of the school is its first, or fourth. The term "foreign" is avoided because of its undesirable connotation. In a country where two or more languages are official, it cannot be said that the second language is foreign. The term "target language" is ambiguous since it may refer to a first, as well as to a second, language. In discussions on language teaching, it is important that the methodology of first and second language teaching be kept distinct. The term "new language" is also ambiguous; it may refer to the newness of the language itself, or to the newness of the language to the learner, and for that reason it, too, is avoided.

Procedure. To arrive at his proposals the writer will survey the literature to determine common practice, experience, and thinking, and to ascertain what equipment and materials are available.

By comparing the various points of view found in the literature, and by analyzing them in the light of experience gained in the planning and directing of eight laboratories in Winnipeg, he will support the recommendations he makes concerning the use of language laboratories.

To arrive at modern language learning theory he will use the theories of recognised contemporary authorities familiar with scientific linguistics.

ORGANIZATION OF THE THESIS

In chapter two, the author traces the development of language laboratory equipment and indicates the origin of some of the important techniques now used. He surveys the important publications on the subject and concludes by showing how linguistics has guided language teachers to change their methods and to capitalize on the availability of language laboratories.

Chapter three contains a description of the available language laboratory equipment.

In chapter four suggestions are offered for making a wise language laboratory selection for a school and for setting it up suitably in the building.

In chapter five, advice is offered the teacher and the principal in making administrative plans for using the laboratory.

Suggestions for preparing, recording, and cataloguing tapes are contained in chapter six.

In chapter seven principles of language teaching are enunciated and used to evaluate five modern programs.

Suggestions for the training of language teachers in the efficient use of laboratory equipment are presented in the final chapter.

CHAPTER II

THE EVOLUTION OF LANGUAGE LABORATORIES AND THE INFLUENCE OF LINGUISTICS ON THE TEACHING OF FRENCH

In the last fifteen years, language teachers have found useful the information that scientific linguists have provided. They have also found an increasing number of situations where language laboratories are of assistance. In fact, a state has been reached where language laboratory equipment and linguistic theory seem to complement each other. The use of this equipment facilitates the application of up-to-date linguistic theory. In this chapter it is proposed to trace the evolution of language laboratories and of linguistic theory in order to give a better understanding of the place of language laboratories in language teaching.

In order to avoid the exclusion of some audio equipment from the classification of language laboratories, the definition selected is deliberately wide. All equipment that is capable of reproducing the human voice in a comprehensible manner has been left in the general classification of language laboratories. In practice the term has been, and continues to be, vague.

Since all voice reproducing equipment has been included in the term language laboratory, it is necessary to go back to 1857 when Edouard L. Scott de Martinville developed the first voice recording

equipment called a phonautographe.¹

A phonograph using a cylinder covered with a lead sheet was developed by Thomas A. Edison in 1878.²

Alexander Graham Bell patented a phonograph using a wax cylinder in 1886.³

Then in 1887 groove-recording on a record was made possible by Berliner.⁴

As early as 1904 Otto Jespersen, the Danish linguist, had foreseen the application of the phonograph in the teaching of languages.⁵

Professor Charles C. Clarke of Yale University was using phonographs in 1906.⁶ It is the same Professor Clarke who reported that before 1918 the Military Naval Academy had a listening room where students could listen to records.

Then in 1926 J. B. Maxfield working for Western Electric Laboratories, perfected the system of electric recording.⁷

¹Pierre R. Léon, Laboratoire de langues et correction phonétique (Paris: Marcel Didier, 1962), p. 24.

²Ibid., p. 25.

³Ibid.

⁴Ibid.

⁵Ibid., p. 26, citing Otto Jespersen, How to Teach a Foreign Language (London: Allen and Unwin, 1904).

⁶Ibid., p. 28, citing The Phonograph in Modern Language Teaching. Modern Language Journal, III, Oct. 1918 (pp. 116-122).

⁷Ibid., p. 31.

One of the important steps in the development of language laboratories can be attributed to Ralph Waltz of Ohio State University, who used the term language laboratory in 1930 for the first time. He designed exercises with pauses for repetition, and in so doing discovered one of the ideas of the laboratory-pattern drill even though he himself did not use the pattern drill. He also had in his laboratory, facilities for recording students' voices individually, thus bringing another innovation in the use of language laboratories.⁸

But Waltz used only cylinders for recording students' voices. It was 1932 before records were used for recording purposes.⁹

The influence that Waltz should have had on language teaching was reduced by the influence of the Coleman Report which directed emphasis in language teaching exclusively to reading and writing.

At Green Mountain Junior College in 1941, Professor Frederick D. Eddy reintroduced spaced pauses.¹⁰

At Barnard College in 1937 the students of Jeanne Viden-Varney recorded their efforts on aluminum discs and played them back. The position of the phonograph was challenged briefly and unsuccessfully by

⁸Ibid., p. 36

⁹Ibid., p. 32

¹⁰Elton Hocking, Language Laboratory and Language Learning, Monograph II (Washington: National Education Association, 1964), p. 15.

the mirrorphone, which recorded on a steel loop about one minute of material. This device achieved its greatest popularity about 1940.¹¹

In connection with the Second World War Period, a word needs to be said about the contribution of the Army Specialized Training Program (ASTP) to the development and adaptation of language laboratories.

Elton Hocking, who was on a team in 1944, that evaluated the foreign language training carried on under this program,¹² reported:

What was indeed novel on most campuses was the small group oral practice under native informants or young instructors. These sessions were supplementary to large group meetings for instruction in grammar or structure. No books were used; the time was devoted wholly to oral-aural practice. There were no talking machines, either, as the informants and men were supposed to do the talking. This emphasis on intensive oral practice and its success provided the ultimate influence on academic teaching. The "mim-mem" (mimicry-memorization) drill and oral-aural orientation of the ASTP small-group activities are reflected in the drills and audio-lingual techniques of today. But, as we have seen, there were no laboratories in the early 1940's except experimental ones, and audio-visual equipment and materials were almost non-existent.¹³

Since it seems ASTP worked largely without audio equipment, its main contribution was in the use of the small group and of the "mim-mem" drills. Its influence is noticeable again at Georgetown University in 1949, when Rev. E. A. Walsh and Professor L. Dostert set up class groups never exceeding ten students to which four consultants were assigned.¹⁴

The first magnetic tapes became available in 1946. Due to the

¹¹Ibid., p. 16.

¹²Léon, op. cit., p. 51.

¹³Hocking, op. cit., pp. 16-17.

¹⁴Ibid., p. 23.

brittleness of their paper backing these tapes were not used extensively.¹⁵

As a result, the wire recorder replaced the microphone in 1946. It too was not successful because its fidelity was poor and the wire had a tendency to break.¹⁶

In 1947, about twenty years after the work of Professor Waltz at Ohio State, the next improvement in the development of techniques for using language laboratories appeared. Pierre Delattre at Oklahoma University used mimicry exercises, question and answer exercises, echelon exercises¹⁷ and even substitution exercises, the great innovation as far as language laboratory work is concerned. Here, for the first time in the language laboratory, was there an exercise that called upon the student to be actively original.¹⁸

J. C. Bowen and Robert Stockwell followed up this development of exercises with considerable experimentation to perfect the pattern drill as we know it today.¹⁹

¹⁵ Ibid., p. 18.

¹⁶ Ibid., p. 17.

¹⁷ La belle demoiselle (pause), la belle demoiselle qui passe (pause), la belle demoiselle qui passe là-bas (pause), la belle demoiselle qui passe là-bas est la voisine de Jeanne (pause).

¹⁸ Léon, op. cit., p. 75.

¹⁹ Hocking, op. cit., p. 33.

Pattern drills now have either three or four phases. In the three-phase drill a stimulus is followed by a pause for the student's answer. Then the correct answer is given. In the four-phase drill a second pause is provided for the student's repetition of the correct answer. The four-phase drill is more commonly used than the three-phase drill because it involves the student more completely by inviting him to participate one half rather than one third of the time.

Four main types of pattern drills have gained acceptance:

(1) the substitution drill, (2) the transformation drill, (3) the conversation drill, and (4) the addition drill. The following are examples of each type:

(1) Substitution

a) simple:

L'oncle, est-il grand?	vieux
L'oncle, est-il vieux?	bon
L'oncle, est-il bon?	

b) multiple slot:

L'oncle, est-il grand?	frère, petit
Le frère, est-il petit?	père, bon
Le père, est-il bon?	

c) variable slot:

L'oncle, est-il grand?	l'homme
L'homme, est-il grand?	sera
L'homme, sera-t-il grand?	fatigué
L'homme, sera-t-il fatigué?	

(2) Transformation

Nous ne parlons pas de l'ancien professeur.

Nous ne parlons pas des anciens professeurs.

Ils habitent une vieille maison.

Ils habitent de vieilles maisons.

(3) Conversation

A-t-elle les yeux gris?

Non, elle n'a pas les yeux gris.

A-t-elle les cheveux blonds?

Non, elle n'a pas les cheveux blonds.

(4) Addition

Bois du lait.

Je viens de boire du lait.

Emprunte de la crème.

Je viens d'emprunter de la crème.

Remplissez toutes les tasses.

Je viens de remplir toutes les tasses.

Countless variations of these four main types are used. Sometimes two types are combined in one exercise.

The tape recorder was first used in a language laboratory at Georgetown University in 1949.²⁰ Two years later in 1951 at SHAPE, Dr. Paul King developed the dual-channelled tape recorder.²¹

By 1950 language laboratories as we know them today came into use. Then pre-recorded materials were transmitted to a number of students

²⁰ Ibid., p. 23.

²¹ Ibid., p. 30.

seated in booths and using headsets. The students worked at these drills simultaneously in large groups.²² Three types of equipment were provided at the student positions. In some installations the student had headsets only. Since these laboratories were used mostly for listening they were called "passive." In other installations, each student had a microphone as well as a headset. The student's voice was picked up by his microphone and amplified into his headset. This system was called "audio-active." If voice recording facilities were provided for the student to permit him to compare his efforts objectively with a model, the system was called "comparative."

The use of language laboratories spread from then on, so that in the school year 1957-58, investigation by the U. S. Office of Education revealed that there were sixty-four laboratories in secondary schools, and two hundred and forty in colleges and universities in the United States.²³

The booklet by Johnston and Seerley surveyed language laboratories in the United States as to organization, equipment, costs, materials, and techniques. It was followed by a great number of publications that served to popularize the use of language laboratories, to explain the audio-lingual method of language teaching, and to guide teachers in the more effective use of language laboratories. Brooks emphasized the value of co-ordinate language learning and the need to pursue practice

²² Ibid., p. 27.

²³ Marjorie C. Johnston and Catharine C. Seerley, Foreign Language Laboratories in Schools and Colleges (Washington: U.S. Office of Education, Bulletin 1959, No. 3), p. 7.

until automaticity was achieved.²⁴

One of the most complete books on the use of language laboratories was Language Laboratory Learning.²⁵ In this book, Marty stressed the need for linguistic analysis of second languages, and maintained that the development of the audio-lingual skills should precede the development of the reading and writing skills. He gave some detailed suggestions for the operation of language laboratories and spoke of language laboratory equipment in terms that are understandable to the average language teacher.

Edward M. Stack gave several examples of laboratory drills, of suitable language laboratory installations and of effective administrative techniques.²⁶

Robert L. Politzer provided a first good example of the value of contrastive linguistics with Teaching French: An Introduction to Applied Linguistics.²⁷ In this study, he identified several of the areas of interference between English and French, and gave practical advice to

²⁴ Nelson Brooks, Language and Language Learning: Theory and Practice (New York: Harcourt, Brace, and World, Inc., 1960).

²⁵ Fernand L. Marty, Language Laboratory Learning (Wellesley: Audio-Visual Publications, 1960).

²⁶ Edward M. Stack, The Language Laboratory and Modern Language Teaching (New York: Oxford University Press, 1960).

²⁷ Robert L. Politzer, Teaching French: An Introduction to Applied Linguistics (New York: Ginn and Company, 1960).

help the teachers meet the problems associated with the interference.

Several additional suggestions for the use of language laboratory equipment were provided in Sound Language Teaching: The State of the Art Today.²⁸ Many examples of suitable language laboratory exercises and of effective administrative devices are also found in this book.

The first major discussion of the problems of language testing was provided by Robert Lado.²⁹ He gave several suggestions as to how second languages could be tested independently of the first language and showed specifically that audio-lingual skills could and must be examined as well as the reading and writing skills.

Additional help in the selection and the purchasing of equipment was provided by a purchase guide.³⁰

A good companion for Politzer's book was provided by A. Valdman.³¹

More than six hundred delegates attended conferences in two successive years to consider the use of language laboratories. The pro-

²⁸J. S. Holton et al., Sound Language Teaching: The State of the Art Today (New York: University Publishers, 1961).

²⁹Robert Lado, Language Testing. The Construction and Use of Foreign Language Tests (London: Longmans, Green, and Co., Ltd., 1961).

³⁰Counsel of Chief State School Officers, and Others, Purchase Guide for Programs in Science, Mathematics, and Modern Foreign Languages; Supplement to Purchase Guide for Programs in Science, Mathematics, and Modern Foreign Languages (Boston: Ginn and Company, 1959, 1961).

³¹Albert Valdman, Applied Linguistics, French (Boston: D. C. Heath and Company, 1961).

ceedings of these conferences have been published.³²

Joseph C. Hutchinson authored another pamphlet on the planning and operation of language laboratories.³³ Advice on the planning and use of language laboratories was given in Guidelines to Language Teaching in Classroom and Laboratory.³⁴

In 1962, a complete discussion of the use of the language laboratory in the teaching of pronunciation was provided by Pierre R. Léon.³⁵ Included in this book is also a very complete history of the development of language laboratory equipment of all types. The most complete technical guide available to date came from the U. S. Office of Education in 1963.³⁶

³²Edward Najam (ed.) Material and Techniques for the Language Laboratory. Report of the Language Laboratory Conference held at Purdue University, March 23-25, 1961. (Bloomington, Indiana: Publication 18 of the Indiana University Research Center in Anthropology, Folklore, and Linguistics, 1962.) And, Felix J. Oinas (ed.) Language Teaching Today. Report of the Language Laboratory Conference held at Indiana University, January 22-23, 1960. (Bloomington, Indiana: Publication 14 of the Indiana University Research Center in Anthropology, Folklore, and Linguistics, 1960.)

³³Joseph C. Hutchinson, Modern Foreign Languages in High School: The Language Laboratory (Washington: U. S. Office of Education, Bulletin 1961, No. 23).

³⁴Don R. Iodice, Guidelines to Language Teaching in Classroom and Laboratory (Washington: Electronic Teaching Laboratories, 1961).

³⁵Léon, op. cit.

³⁶Alfred S. Hayes, Language Laboratory Facilities. Technical Guide for the Selection, Purchase, Use, and Maintenance (Washington: U. S. Office of Education, Bulletin 1963, No. 37).

Elton Hocking surveyed past and prospective developments of the language laboratory,³⁷ and George A. C. Scherer and Michael Wertheimer reported upon a psycho-linguistic experiment demonstrating the success of the audio-lingual method of language teaching.³⁸

Wilga Ann Rivers gave a penetrating look at the psychology forming the basis of the audio-lingual method. This author claimed that Skinnerian psychology was not sufficient to explain language learning.³⁹

In Canada as in the United States, language laboratories first gained acceptance at the college level. By 1959 at least seven of the ten Canadian provinces had language laboratories in one or more of their universities and colleges.

In Manitoba, a passive installation with ten headsets, a tape recorder, and a record player was in operation at Daniel MacIntyre Collegiate in Winnipeg in 1959. A similar installation was put into St. John's High School in Winnipeg in 1960. In that same year, at Brandon College, several Ampex tape recorders were interconnected in one room for the feeding of a program to headsets from one central position, and for the recording of student responses in several positions. In 1961 a third Winnipeg high school, Churchill, was equipped with a forty-position language laboratory, audio-active at thirty-four positions and comparative at six. It also had a console capable of feeding ten channels

³⁷Hocking, op. cit.

³⁸George A. C. Scherer and Michael Wertheimer, A Psycho-Linguistic Experiment in Foreign Language Teaching (New York: McGraw-Hill Book Co., 1964).

³⁹Wilga Ann Rivers, The Psychologist and the Foreign Language Teacher (Chicago: University of Chicago Press, 1964).

simultaneously, a recording studio, and a library of materials. Rheem-Califone equipment was used here. In that same year, a six-position audio-active-comparative laboratory was set up at United College using Dictaphone equipment. It was used mostly by the English Department as a listening room.

In 1962 the passive laboratory at Daniel MacIntyre High School was replaced by a forty-position installation similar to that used in Churchill High School. In 1963 three more language laboratories at Grant Park, St. John's and Kelvin High Schools were opened by the Winnipeg School Division. At Grant Park and St. John's High Schools, seventy students could be accommodated at one time. Magneticon equipment was used in the Grant Park High School installation and tape decks at the student position were loaded with two-reel cartridges. An audio-active-comparative laboratory was opened at Teacher's College and another small one at St. Boniface Seminary.

In 1964, three more language laboratories were opened in Winnipeg High Schools, this time at Sisler, Gordon Bell and Elmwood. Webster equipment was used in the Sisler High School installation which had seventy-five positions. In that year also, a forty-position, audio-active-comparative laboratory using Rheem-Califone equipment was opened in University College at the University of Manitoba.

Their popularity continued to grow in 1965 as a laboratory was added at the Faculty of Education of the University of Manitoba, and an installation using Electronic Futures equipment, at United College. Now installations are being planned for St. Paul's College, and in high

schools at Thompson, Pinawa, and in the St. Boniface Division. The Winnipeg Division also equipped its junior high classes that did not have access to complete language laboratories with mobile laboratories consisting of tape-recorders and large speakers.

In 1959 when language laboratories made their appearance in Manitoba, only Ginn and Company had commercial materials available to accompany its textbook. In due course, Copp-Clarke and Clarke Irwin also made recorded material available to accompany their textbooks that were authorized in Manitoba as well as the Ginn Program. Anyone using the three authorized traditional⁴⁰ programs in Manitoba in September 1965, therefore, had access to recorded materials. But, by and large, these recorded materials were readaptations of materials that continued to be traditional in approach. Those who used language laboratories from 1959 to 1965 were, therefore, forced to use still inadequate traditional materials which commercial outlets offered, or which they prepared themselves. In September 1965, the first linguistically-oriented program was authorized for Manitoba to begin at the grade seven level.

The educators in Manitoba were cautious in their acceptance of language laboratories, and the university was even more cautious than other educational institutions in the province. This same caution is

⁴⁰Traditional programs emphasize in their exercises the development of reading and writing skills; a standard lesson starts with a lengthy reading passage, followed by a list of new vocabulary arranged in a column beside the English near-equivalents. Several grammatical generalizations are given in English and illustrated with bilingual examples. Several questions are given to test understanding of the reading passage. The remainder of the exercises require the application of the grammar generalizations in translating from French to English and English to French.

emphasized by the fact that the university does not have a linguistics department yet. Perhaps it is not accidental that those who have shown an interest in modern laboratories are also interested in linguistics, and vice versa. Those who are interested in aids feel the necessity to rethink their approach to language teaching. This rethinking leads them to linguistics. Some aids are a help to the linguist. The devices for easy recording of spoken language is for languages, as important, perhaps, as the invention of the microscope has been for the natural sciences. The language laboratory is at least in part, a substitute for a native informant and a drill master.

Before proceeding to indicate the influence of linguistics in the evolution of language teaching, the writer considers it necessary to explain what linguistics is. It may be defined as "the scientific study of language." Its main branches are the study of sounds of speech (phonetics or phonology and phonemics), forms (morphology), words (lexicology), phrases and sentences (syntax), word meanings (semantics), the origin of words (etymology), style (stylistics), linguistic geography and dialectology. The study of language may be historical (diachronic) or confine itself to a certain period, e.g. the contemporary language (synchronic). Beyond linguistic study lie some closely allied fields of inquiry: psycholinguistics, that is the border line between linguistics and psychology; also the study of the relations between language and society and culture, the sociology of language or, as it is beginning to be called, sociolinguistics. Lastly, there is applied linguistics, that is the application of linguistics to language teaching, to machine

translation, to sound engineering in radio, television and telephone communication, and to communication problems in society in general.

Linguistic science is not a creation of the twentieth century. It is as much of the nineteenth. However, in the twentieth century in North America, its influence upon language teaching was not strong before Bloomfield's Language.⁴¹ The state of language teaching was described by Molton as follows:

The most common type of instruction was by the "grammar and translation method," used in much the same form for both ancient and modern foreign languages. One of its aims was to teach the "grammar" of the language, by which was meant its inflectional paradigms (taught in terms of spelling rather than of speech) and certain rules for combining words into phrases and sentences. The teacher spent a large part of his time explaining the grammar; the students learned it by memorizing the paradigms and the rules, and they applied the grammar by translating English sentences into the foreign language. The second aim was to teach the student to read the foreign language. The teaching method employed was that of more or less word-for-word translation from the foreign language into English, accompanied sometimes by the memorizing of lists of words.⁴²

Bloomfield, in Language,⁴³ expressed his discontent with conventional school teaching of languages in all its aspects: the mix-up of speech and writing; the false logic of so-called correct usage; and the lack of understanding for language in conventional grammar teaching. The techniques that he favoured were: (1) a structural analysis of the language (to determine the basic structures of the language); (2) presentation of the structure by a trained linguist; (3) several hours of practice per day with the

⁴¹Leonard Bloomfield, Language (New York: Holt, 1933).

⁴²W. G. Molton, "Linguistics and Language Teaching in the United States: 1940-1960," Trends in European and American Linguistics, 1930-1960, Utrecht, p. 83.

⁴³Bloomfield, op. cit.

help of a native speaker; (4) emphasis on practical speaking knowledge as the first objective. Robert Lado in Language Teaching: A Scientific Approach,⁴⁴ elaborated into a coherent theory the commonsense view that the difficulties for the learner can be predicted from a comparison of the foreign language and the learner's native language to determine the differences.

This is not all that linguistics has done for language teaching since World War II. It has provided a scientific body of theory on the nature of language. Consciously, or otherwise, the teacher who gives or withholds explanations, who selects one course instead of another one, who uses a language laboratory or refuses to use it, who prefers certain techniques to others in language teaching, implicitly or explicitly, is making an assumption about the theory of language. Linguistics provides a fresh look for the teacher. One of the reasons why this look is fresh is that linguistics in the twentieth century in North America is synchronic rather than diachronic. By taking a slice of language at a given time as the basis of its study, rather than by going back several years to explain how it has arrived at its present state, it is able to give more precise descriptions of language as it is being used now. It, therefore, helps to soothe the fear that exists in many teachers, that the language which they teach is used by no-one.

Linguistics also breaks down language into areas and systems in order to reduce it to manageable wholes that can be taught at each

⁴⁴Robert Lado, Language Teaching: A Scientific Approach (New York: McGraw-Hill, Inc., 1964).

particular level. It believes in the primacy of speech, as opposed to the attention which was given in the past to the pronunciation of the written word. By its distinction between phone and phoneme, it has helped to establish priorities of teaching. However, it has not become obsessed with spoken language. It still believes that there is a place for reading and writing, and unlike the linguistics of the nineteenth century it does not become obsessed with a single element such as phonetics. Rather it looks at language more comprehensively as an organization of structure, not only as sounds or words or grammar.

It has suggested a balance between the traditional and the direct methods⁴⁵ by pointing out that command of grammar involves both practice of the language and knowledge about the language. It is not averse to translation, as long as translation serves only to establish the necessary contrasts. But more importantly, it has shown the way to systematic practice of usage. In the past, systematic practice was mainly in terms of grammatical categories, verb paradigms, principal parts of verbs, declensions, lists of words, or for example, the famous "football team of French pronouns." The linguists have emphasized the value of practice in functionally valid contexts. This has led to the development of pattern practice, in which the learner is exposed to slight modifications, through substitutions which in a systematic way accustom him to a given pattern of speech, introducing only very slight changes at a time.

Linguistics does not cover the full range of methodology of language teaching, but by explaining what it is that one is trying to do

⁴⁵ Direct methodists maintain that a second language should be taught without reference to the first language. Grammatical generalizations are to be avoided and the most common exercise is questions and answers in the second language.

in language teaching, by setting out what is to be taught, by emphasizing the primacy of speech, and the importance of systematic practice, it provides many guides to language teachers and certainly directs them to an awareness of the help that a language laboratory can be. Linguistic theory here, however, is on the fringe of psycho-linguistics and it places the teacher face to face with such problems as whether the purpose of language teaching is the formation of habit, or the perception of a gestalt or both; whether it is preferable to proceed by analogy or by analysis, or again as to what are the most effective ways of reinforcing habits that have been established. Teachers will have to make their choice here because psychologists, so far, have not been able to demonstrate the rightness of any one theory.

CHAPTER III

LANGUAGE LABORATORY EQUIPMENT

The language laboratory planner or the prospective buyer finds a survey of the equipment available very useful. A survey of this type may suggest to him features that he had not thought of, or it may make it possible for him to buy merchandise at a more reasonable price. The inclusion of certain non-standard features in certain lines of equipment may require an expensive customization. This customization can be avoided by purchasing a type which offers this feature regularly.

SELECTING LABORATORY EQUIPMENT

This survey of language laboratory equipment is not exhaustive. The preparation of an exhaustive list is almost impossible because, in this active area of industry and business, new lines are constantly appearing and old ones disappearing. In addition the established companies are constantly putting out new models which may, or may not, differ substantially from the previous ones. But even if one had a complete list of all the language laboratory suppliers, as well as a complete list of the equipment that they have for sale, it would still be difficult to provide a precise description of their equipment. The major source of information is pamphlets prepared for publicity purposes rather than technical sheets used in manufacturing and installation. Publicity releases tend to exaggeration and omission of information. The features that make the piece of equipment attractive to the prospective buyer are

emphasized, while the standard features or the weak ones are not mentioned. To give a description that is correct in every respect, one would have to have at his disposal all of the equipment as well as an inspection laboratory with the necessary technical staff.

Another obstacle to precise description is the fact that every supplier offers several grades of equipment. The inclusion in Table I of the description of every supplier would have increased the detail beyond the point of practical use. It was, therefore, decided to describe the equipment of the highest grade offered by the company, or at least the equipment which it advertised as standard.

In many instances the information desired was not available from the literature provided by the suppliers. In such cases the corresponding blanks were left open. The reader should therefore take care not to conclude that a blank on the table is a sure indication that the particular company does not provide this feature in its equipment. He should rather interpret it to mean that information concerning this feature was not available. It will also be obvious that, at least, a few suppliers have been omitted from this chart. This was done deliberately where it was thought that the merchandise offered could not serve any purpose in a language laboratory.

It should be reiterated that most companies offer several optional features and that if they do not offer them, they are prepared to provide them upon request. Table I, page 28, describes a standard installation by the given supplier. The building in of an optional feature frequently results in awkward operational devices, at non-competitive prices.

TABLE I
A DESCRIPTIVE SURVEY OF LANGUAGE LABORATORY EQUIPMENT
MAKES OF LABORATORY EQUIPMENT AVAILABLE IN MANITOBA

Equipment Features	Ampex A	Audio-Teaching Center B	Bell & Howell C	Chester Dialog D	Crown E	Dage & Bell (TRW) Magneticon G	Du Kane H	Edwards I	Electronic Futures J	Ferrogaph K	Instructomatic L	Lingua Trainer M	3-M Wollensak N	Monitor O	Philips P	Rheem-Califone Q	R. C. A. R	Roberts S	Stencil-Hoffman T	Switchcraft U	Uher V	Viking W	Webster X	White Y
<u>Recorder</u>																								
open reel(1)		X	X	X	X	X	X	X		X	X		X	X	X	X	X	X	X		X	X	X	X
cartridge (1 reel threading)...(2)										X														
cartridge (1 reel no threading)...(3)												X												
cartridge (2 reels)...(4)				X		X			X								X							
repeater attachment...(5)				X														X						
<u>Recorder Heads</u>																								
3 (erase, record, monitor).....(6)					X					X								X						
1 housing (E, R-M)....(7)		X	X			X		X	X		X	X	X	X	X	X	X		X		X	X	X	X
fixed(8)		X	X		X	X	X	X		plug	X	X	X	X	X	X	X	X	X		X	X	X	X
movable(9)				X					X															
full-track(10)					X					X														
half-track(11)		X	X	X	X	X	X	X		X	X	X	X	X		X	X		X		X	X	X	X
quarter-track(12)					X													X		X				
multiple-track(13)				4*																				
single-channel(14)					X	X	X	X	X	X	X	X	X	X	X	X	X	X	16		X	X	X	X
dual-channel(15)		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X

* Plays 21
Records 1

TABLE 1 (continued)

Recorder Heads (continued)	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y
records 2 programs ... (16)	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X			X	X	X
plays 2 programs (17)	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X			X	X	X
plays 1, records 1 ... (18)	X	X	X	X	X	X	X	X	X	X		X	X		X		X	X		X			X	X	X
shielded (19)		X	X		X	X			X	X	X	X	X	X		X		X	X	X		X		X	X
open 20															X		X						X		
pressure pads 21		X	X			X						X		X		X						X		X	
<u>Recorder Motors</u>																									
one (22)										X				X			X						X		
two 23		X										X	X					X							
three 24				X	X						X								X	X					
induction 25					X							X						X							
synchronous (26)				X							X						X		X						
<u>Recorder Switches</u>																									
play-record 27		X			X	X			X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	
push 28			X		X	X				X			X	X	X	X			X			X			
turn 29		X		X					X		X	X					X	X		X			X	X	
silent 30				X							X														
separate (P-R) 31			X		X	X				X				X		X			X	X		X			
remote record on upper track 32				X	X				X			X			X		X			X					X
additional record on upper track ... 33		X	X		X	X					X	X							X				X		
dial 34				X																					
forward-rewind (35)		X			X	X			X	X	X	X		X	X	X	X	X	X	X		X	X	X	
push (36)			X		X	X				X				X	X	X						X	X		
turn (37)		X			X				X		X	X					X	X	X	X			X	X	
erase safety 38		X	X		X	no			X		X			X	X	X	X	X	X	X					

TABLE 1 (continued)

Recorder Switches (cont)	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y
dial 39				X																				X	
tape lifters 40		X																	X						
tone with volume(41)																X		X							
with on-off 42														X											
alone 43		X	X		X						X								X			X			
none 44						X			X	X		X													
pause 45		X									X			X		X	X	X	X			X		X	
silent 46					X						X			X			X	X	X			X		X	
lock 47		X			X						X					X	X	X	X			X		X	
foot-operated 48					X									X								X			
releases brakes 49		X				X					X						X	X				X			
speed																									
7 1/2 ips 50		X	X		X	X		X			X	X		X	X	X	X	X	X	X		X	X	X	
3 3/5 ips 51		X	X	X	X	X		X	X		X	X	X	X	X	X	X	X	X			X	X	X	
1 7/8 ips 52																X									
push 53					X									X	X	X						X	X		
turn 54		X	X		X	X					X	X							X	X					X
sleeve 55																	X								
with on-off..... 56																X									X
on-off separate 57		X				X				X		X			X		X		X			X			
stop 58					X				X					X	X	X	X	X	X			X		X	
instant 59		X			X	X					X	X		X	X	X	X					X			
to change functions.. 60						X								X		X									
from sensitized tape. 61																X									
tape fastened to reel 62										X									X						
tape runs out(63)			X			X						X						X							X

Uses Bell deck. Not available in Canada

TABLE 1 (continued)

Recorder Switches (cont)	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y
weight in pounds(64)						35					50	13		20								12			
output in watts 65											2.5			10		2.5						1			
max. frequency resp. at 3 3/4 66				20M*	10M	15M				5M	6M	10M	8M	7.5M	8.5M	15M	10M	15M	13M	10M		10M	15M	10M	
min. signal to noise ratio in decibels 67					51	45					50	55	50	48	50		50	55	55	50		55	55	51	
wow and flutter in % RMS 68		.2		.2	.18	2					.2	.2	.3	.3	.2		.2	.2	.12	.2		.15	.2	.1	
distortion volume indicator																									
vu meter 69		X			X	X					X	X			X		X		X			X	X		
magic eye 70			X											X		X		X							
none 71										X															
revolution counter 72		X	X			X			X		X	X		X		X	X	X	X				X	X	
Head Phones	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y
max. fre. response(73)				10M		15M							8M		10M		10M	8M		10M				10M	
plug																									
flat 74						X		X																	
straight 75		X		X					X				X		X		X	X		X				X	
impedance																									
high 76															X		X	X		X					
low 77				X		X				X							X	X		X					
cushions																									
foam rubber 78		X		X													X							X	
moulded rubber 79						X							X												
electronic type																									
crystal 80		X													X			X							
dynamic(81)				X		X		X		X															

*Read 20,000 cycles per second

TABLE 1 (continued)

Head phones (continued)	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y
magnetic 82																	X							X	
connections																									
moulded 83										X							X			X					
soldered 84						X																			
weight in ounces 85						3				14															
cord																									
fabric cover 86								X												X					
composition cover 87				X		X							X												
spiral 88																									
mounting																									
type A 89	X							X	X						X	X		X						X	
type B 90				X																					
type C 91						X																			
type D 92										X															
type E 93													X												
type F 94																									
adjustable 95	X		X			X		X	X				X		X	X		X		X					X
volume control 96	X		X			X		X	X	X			X		X	X		X		aut				X	
Microphones	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y
support																									
boom from headset 97	X		X			X				X			X		X	X									
rigid arm on swivel .. 98								X																	
gooseneck 99	X															X				X				X	
movable stand100	X					X								X				X							
hand held101	X					X								X				X							
neck102	X									X															

TABLE 1 (continued)

Microphones (continued)	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y
max. frequency resp.....103				10M		8M							8M		9M	10M		9M							10M
direction																									
unidirectional.....104						X																			
unidirectional short range.....105			X							X															
bidirectional106																									
omnidirectional107																									
electronic type																									
crystal108		X				X																			
magnetic109															X										
dynamic110		X						X		X			X		X	X		X						X	
on-off switch111		plug														X									

Program distribution	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y
wire112		X		X		X		X	X			X	X		X	X		X			X		X	X	X
wireless113										X															

Program selection	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y
student																									
no choice(114)				X									X		X										
calls distribution center115		X		X		X		X	X			X	X		X	X		X			X		X	X	
selects a position....116																									
selects a receiver....117																									
selects a channel.....118								X				X			X	X									
dials a program.....119				X																					

2 channels

TABLE 1 (continued)

Program selection (cont)	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y
teacher																									
1 program120																									
selection by area ...121		no				X																			
selection by row122		no		X		X		X				X				X	X								
selection for individual123		2		X		X		X	2c			10c			10c	10c		10c			6c		3c	9c	2c
all-call124		no				X						X			X	X		X					X		
																								X	
Monitors	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y
one switch.....125				X						plug		3		X		X						X		X	
two126		X				X			X									X							X
three127																									
Student recording	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y
booth128		X				X		X		X		X			X	X		X					X	X	X
console129		X				X						X				X		X			X				X
remote130				X		X							X							X					
	*		*		*						*			*		*			*			*			
	**		**		**			**		**	**	**		**		**	**	**	**	**	**	**	**		

* supplier offers only tape recorders

** laboratories for which there are Manitoba suppliers

Table I shows that there are more than twenty-five lines of language laboratory equipment available in Manitoba at present. Of these, seventeen have facilities for connecting student positions to a central distribution and/or monitoring center. The other eight offer only tape recorder-players.

The lines that have only tape recorder-players are largely oriented to the domestic and business market. These decks include features such as stereophonic reproduction, frequency responses ranging to twenty thousand cycles per second, or slow speeds to reduce tape consumption. There is some doubt as to the wisdom of spending money to have these features in a language laboratory.

Of the seventeen laboratory suppliers whose equipment includes a central distribution center, ten do not have distributors in Manitoba--a factor that the prospective buyer will want to consider, since arrangements will have to be made for the installation and servicing of the equipment purchased. Few school systems are large enough to warrant the employment of a technician that would be responsible for installation and servicing, and also the establishment of a supply of replacement parts.

Many of the language laboratory components offered by different distributors are the same. Viking, Bell and Roberts are three of the largest manufacturers of tape decks. These are included in a great number of systems with or without slight variations. The same applies to headsets and microphones. Important manufacturers of headsets are Trim, Cleveite and A K G, while important manufacturers of microphones are Turner and Electro-Voice. These important lines of language laboratory components

are available to almost any language laboratory distributor. The degree of standardization in the manufacture of sound reproduction equipment is sufficiently high so that it is possible to match equipment from various manufacturers.

A few companies have carried out research to develop special systems. Examples of these are Chester, Electronic Futures and Stencil-Hoffman. They provide equipment with special features which no competitor has yet tried to match. There are still other suppliers who offer only distribution systems, leaving the choice of the tape decks, microphones, and headphones entirely to the customer. Switchcraft can be numbered among these.

In the next few paragraphs Table I will be examined section by section to explain the information that it contains. It is to be noted that the majority of the tape recorders still use open reels. One machine offers the endless reel cartridge that requires threading. One supplier offers the one-reel cartridge that requires no threading. Four have the two-reel cartridge that does not require threading either, and three have a special repeater attachment that repeats either part of, or all the tape automatically.

The open reel (Figure 1, page 37) has the following advantages:

(1) There is complete flexibility of length. The tape on any machine can be cut in any length below twelve hundred feet, and there are a few machines that will carry even larger reels. The cartridge is restricted to shorter lengths and cannot be cut as easily. (2) Tape in an open reel is much less expensive, frequently less than half the price of tape in a cartridge. (3) The open reel is the only one that lends itself to high

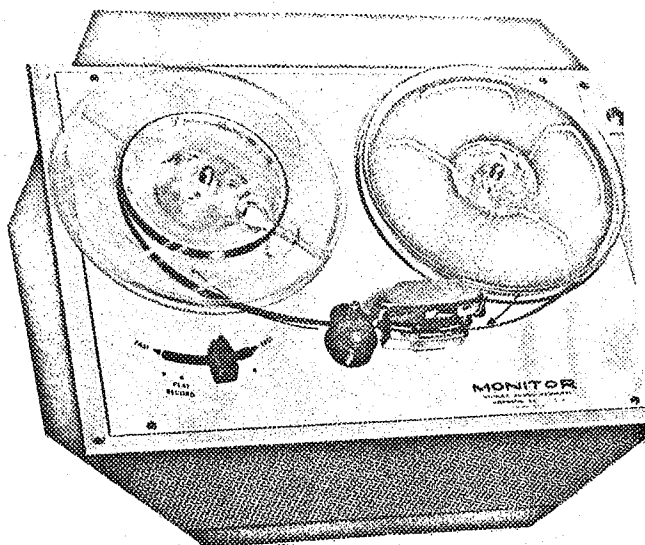


FIGURE 1
OPEN-REEL

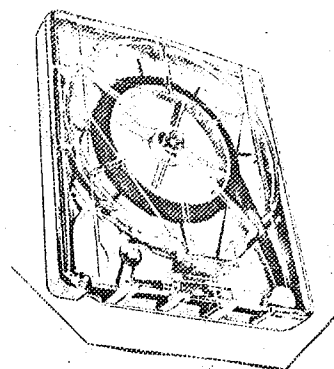


FIGURE 2
ONE-REEL CARTRIDGE

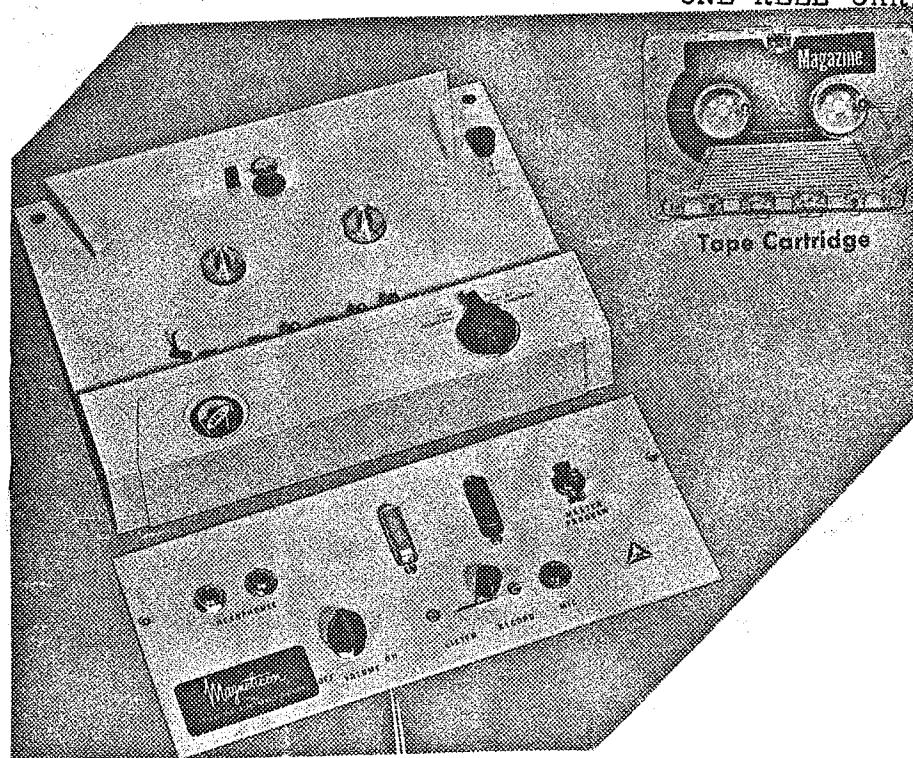


FIGURE 3
TWO-REEL CARTRIDGE

speed duplication. (4) The tape on the open reel tends to last longer because it requires no special lubrication.

The one reel cartridge (Figure 2, page 37) is used where constant repetition of a program is required. In this device the beginning of the tape is attached to the end and it is possible to have a program replayed without interruption until the machine is stopped. It is also possible to dispense with threading by having a cartridge which will push into position against an open head. The main disadvantage here is the fact that this cartridge will not rewind and, therefore, it is necessary to repeat the whole program even if one wants to hear only a small segment of it twice. The life of the tape in this cartridge is relatively short as a result of the pressure that is placed on the tape by the unwinding device which pulls tape out from the center of the reel.

Apart from the fact that the two-reel cartridge (Figure 3, page 37) is more expensive and that it rarely holds more than three hundred feet of tape, this cartridge is convenient for use at student positions because tape spillage with it is impossible, and also because threading is not necessary since the cartridge pushes into place against the heads. This cartridge is preferable to the one-reel cartridge because with it it is possible to rewind or move forward at high speed. If a repeating program is desired, it is possible to select a machine that will have a device that springs into the rewind position once the tape has been completely played. This device is found on the Roberts and the Chester decks.

The White system has a unique repeating device built into the console. There are secondary loops which are long enough to record a question, the student's answer, and the correction. The student does not

need to wait until the end of the tape to hear the comparison of his effort with the master. Instead this is done instantly and automatically for each question. It is also possible for the operator to cause a multiple repetition of each student attempt.

Recorders come equipped with three or two heads. The more expensive professional machines have three heads, one for erasing, one for recording, and a third one for monitoring. This makes it possible to evaluate the quality of the recording as the recording is taking place and is, therefore, useful in recording master tapes. For normal laboratory use, two heads are sufficient. The first head erases and the second head is used for recording or for playing.

Most of the tape recorders have fixed heads. The Ferregraph has heads that can be interchanged quickly by plugging. It would, therefore, be easy to change this recorder from a full-track, to a half-track, to a quarter-track function. The Electronic Futures Tape Recorder has a head which is movable at right angles to the direction of the tape movement. This head has twenty-one different positions over the surface of a wide tape. The movable head is the playing head, and there is another one, fixed, that is used for recording. This device allows for compactness and efficient use of tape. It is possible to store a full year of master lessons on one tape. Because proper head alignment is so important for proper reproduction, and because proper head spacing is necessary to avoid leakage from one track to another, it would seem that the tape recorder with the movable head would be less reliable in these respects.

Tape recorders that use one quarter inch wide tape are normally described as full-track, half-track, or quarter-track, the fraction

referring to the width of the tape that the head covers. Professional machines are normally full-track, but there is no doubt at all that a quarter-track machine can give an adequate reproduction for all language laboratory requirements. The half-track machine seems to be better suited to the language laboratory than the full-track machine. If the half-track recorder has two heads placed one above the other, it is normally possible to play just from one head, or to listen to the questions played from one head while the answers are recorded on the other, and then to play back from both heads simultaneously. It is also possible to re-record on one track without erasing the other. While all these functions may not be necessary at all times, it would seem advisable to standardize on half-track machines since one can encounter difficulties in going from quarter-track to half-track decks. With a half-track deck it remains possible to use full-track tapes that are prepared commercially. The quarter-track machine was developed for economy of tape. In the language laboratory it is not desirable to have more than one program on one tape because this makes cataloguing more difficult, and makes impossible the simultaneous use of two programs that may happen to be on the same tape. It would appear, therefore, that the quarter-track machine is not suited to the language laboratory.

In the survey summarized in Table I, it was noted that the Chester and the Stencil-Hoffman machines were designed so that more than two heads may be used on the same tapes simultaneously. The Chester machine (Figure 4, page 41) will record or play four tracks simultaneously. The Stencil-Hoffman machine (Figure 5, page 41) will record or play on

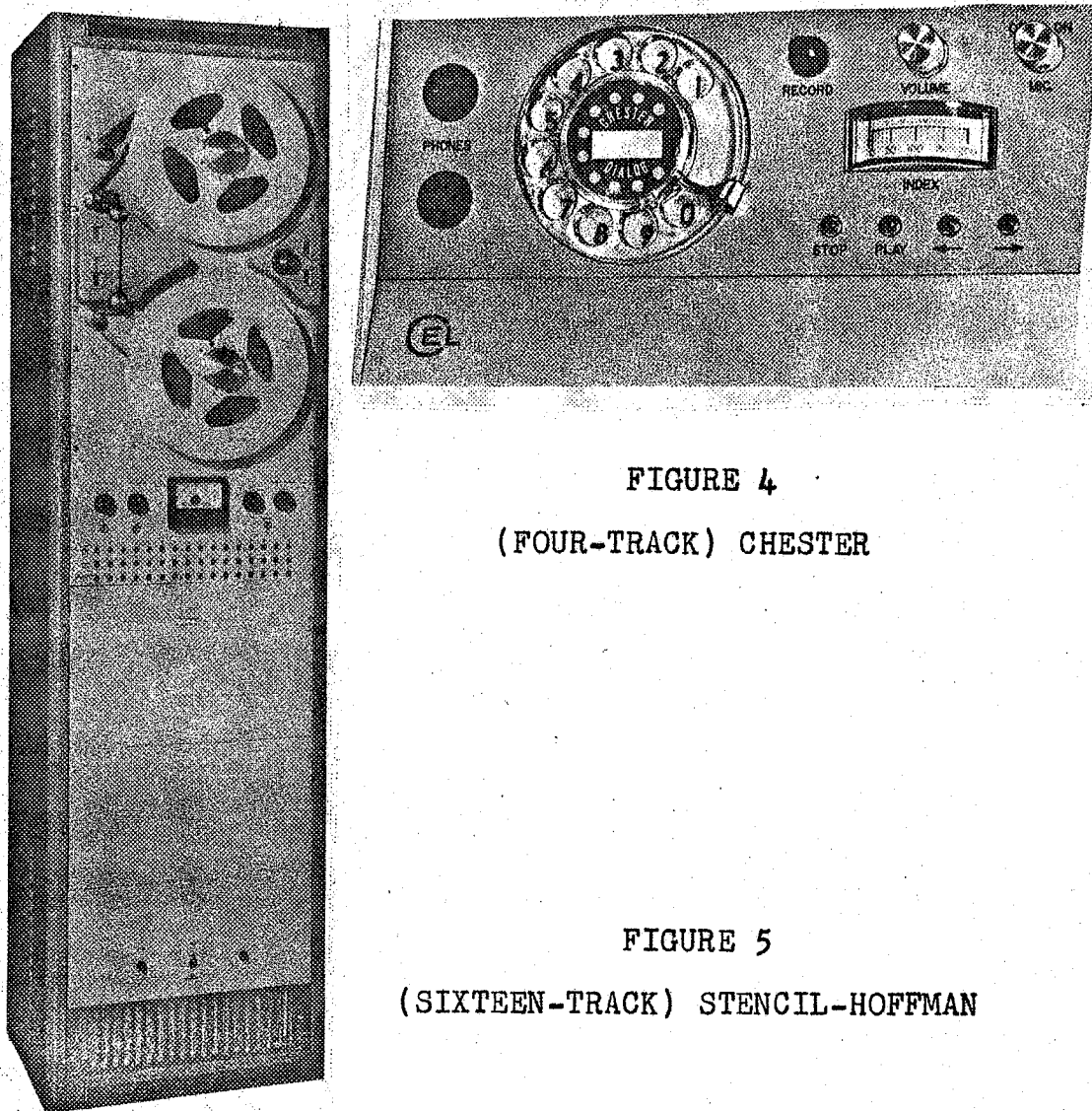
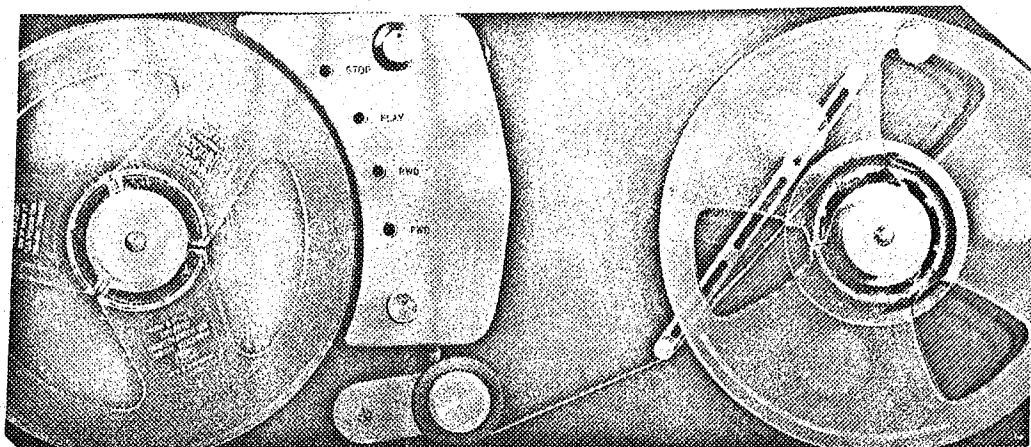


FIGURE 4

(FOUR-TRACK) CHESTER

FIGURE 5

(SIXTEEN-TRACK) STENCIL-HOFFMAN

sixteen tracks at one time. This would appear to be a rather economical way of providing a great number of lesson sources or of providing recording facilities for a great number of students. The only disadvantage apparent seems to be the lack of flexibility. In either of these two systems, when one track is part way through a program all the other tracks must be at the same position in their programs too. For example, in the dialogue system a student will frequently find that the lesson which he dials is already in progress, and he will have to listen to the end of it before he can hear the beginning. In the Stencil-Hoffman system, if a student wishes to go back to hear two minutes of recording while the rest of the class wants to continue to do a ten minute recording, one group would have to be bound by the decision of the other. However, it is not inconceivable that a teacher could plan a program where groups of sixteen could work as units.

Many of the tape recorders have a housing located opposite the heads for covering such devices as pressure pads, automatic stop-levers, and levers for lifting the tape from the head on fast forward and rewind. Other machines such as Rheem-Califone and Roberts leave the face of the head completely exposed. As a result, on these machines, threading can be very fast, since it consists only of wrapping the tape around the head before passing it on to the next reel. However, dispensing with the pressure pads places greater demands upon the braking system. If the tape is not in close contact with the heads at all times, poor reproduction will be the result.

The most expensive machines have three motors and these are synchronous rather than induction motors. Synchronous motors provide more constant speed. Theoretically, however, it is possible for a tape recorder with a single induction motor to do adequate work, and, if portability or size are factors to be considered, then the tape recorder with the single induction motor may be the best choice.

The switches for the operation of tape recorders consist basically of two types. One is the push piano-key type and the other is the turn type using a bar or knob. All push types are noisy, at least when released, if not when depressed. Some of the turn types are equally noisy. This is a feature that should be tested before purchasing because noisy switches can be a disturbing element in a busy laboratory. When two-track machines are placed at a student position, it is advisable to have at the console a button to control the upper recording head at the student position. This avoids the accidental erasure of the master track and makes possible the use of the laboratory for mass duplication. The Monitor laboratory has an excellent device in this respect which permits the stopping and starting of all student machines simultaneously and automatically for testing purposes. Where the language laboratory is to be used mostly on an individual basis, it would seem that the dial control is preferable to the other systems of program selection.

The tone control is not an important feature of tape recorders used in laboratories. The pause button, however, is useful for easy silent stops and starts. If this button locks, the operator's hands will not be kept unnecessarily engaged. A foot-operated pause switch, such as is found on the Uher and Wollensak recorders, is even more convenient. If

the pause switch releases the brakes on both reels, it is possible to cue manually for tape editing. This facility is important on a master recorder.

Most of the tape recorders on the market today are equipped to function at seven and a half ips (inches per second) and three and three quarters ips. While the fidelity of recordings at one and seven eights ips may be sufficient for domestic and business purposes, where the first language is normally used, this speed is not satisfactory for language laboratory purposes where clarity is essential. However, fidelity at three and three quarters ips is sufficient for language laboratories, and a machine operating at that speed would be sufficient for all student positions. Since many of the commercial materials are recorded at seven and a half ips, the tape recorders at the console and the tape duplicating facilities should be equipped to use tapes at seven and a half ips.

It little matters whether the speed change is a push or turn button, as long as one keeps in mind the remarks previously made about noisiness. Some tape recorders, such as the Rheem-Califone, require the application of a sleeve on the capstan for speed changing. This is an inconvenient speed-changing device.

The weight of a tape recorder is important only if it is to be carried by hand from room to room. One should not expect a lady to carry a tape recorder weighing more than twenty pounds. If a larger model has been obtained, a cart should be provided. The output of a machine is another factor to be considered. It would seem that 2.5 watts is the minimum output required to play to an ordinary classroom. If auxiliaries

are to be plugged in, such as speakers or a number of headsets, 2.5 watts may not be sufficient. As a very rough rule of thumb, a half watt is required to drive one headset.

The speaker built into tape recorders are usually inadequate to play to a roomful. If an auxiliary speaker is to be used, the tape recorder may not have sufficient output to drive it, and an additional amplifier may more than make up the difference between an expensive and an inexpensive tape recorder.

A tape recorder used in a language laboratory must be able to reproduce the lowest and highest frequencies found in the language for which it is used. However, the guarantee of the necessary range and frequency response is not sufficient. Distortion, wow, and flutter, and background noises may be just as responsible as the low frequency response for the unintelligibility of sounds fed through the system. If the intensity of the reproduced tones varies at different points throughout the frequency range, frequency distortion is said to exist. If it does not, the response of the system is said to be flat.

. . . Any statement of required frequency response is meaningless unless accompanied by a statement of variation in intensity over the prescribed range, expressed in decibels (db) up or down (plus or minus, written \pm) from some reference point, usually one thousand cps. In this case the smaller the decibel number, the smaller the variation, and the better the system or component.¹

The frequency distortion at three and three-quarters ips should be no more than ± 3 db from 100-8,000 cps, and no more than ± 2 db from

¹Alfred S. Hayes, Language Laboratory Facilities. Technical Guide for the Selection, Purchase, Use and Maintenance (Washington: U.S. Office of Education, Bulletin 1963, No. 37), pp. 48-49.

250-6,000 cps with no peaks or valleys greater than one db. Wow and flutter are periodic variations in the reproduced sound and they should not exceed .3% RMS at 3 3/4 ips.²

The sound one wishes to hear is called the signal. As the intensity of the signal increases in relation to the inherent noises of the system, the clarity of reproduction increases. This relationship is called the signal-to-noise ratio and it is measured in decibels. The larger the decibel number the better the signal-to-noise ratio at 3 3/4 ips of 45 db.³

Minimal phonetic cues begin to appear at one hundred and fifty cps and fricative sounds, such as represented by the spellings f, s, ch, and j in French, release some energy as high as ten thousand cps. Even though some men's voices release frequencies as low as sixty cps, it is advisable to attenuate sounds below one hundred and twenty cps by as much as fifteen db in order to avoid reproduction of room noises and to prevent the masking of high frequency sounds by loud, low frequency sounds. In the high frequency range, fricative sounds reproduced by equipment having a maximum frequency response of eighty-five hundred cps were considered natural when played to a panel of native listeners.⁴ Suitable minimum frequency response at 3 3/4 ips, provided that the conditions of distortion, flutter and wow, and signal-to-noise ratio are met, would be one hundred to eight thousand cps.⁵

²Ibid., p. 81.

³Ibid.

⁴Ibid., pp. 60-67.

⁵Ibid., p. 81.

Line 66, Table I, shows that at least three of the tape recorders listed do not meet the minimum requirements. Lines 67 and 68 of Table I show the signal-to-noise ratio and the wow and flutter to be acceptable in all the recorders for which the information is available.

The tape recorder for the language laboratory should have a volume indicator for guidance in recording or play-back. The VU meter is a much more precise instrument than the magic eye and should, therefore, be preferred. The revolution counter is not superfluous equipment, moreover, since it can save considerable time in locating part of a program.

The ideal headphone for language laboratory use should have a response from 100-8,500 cps, ± 2 db from 250-6,000 cps, with no sharp peaks or broad valleys in this range, and ± 5 db from 6,000-8,500 cps. The intensity deviation expressed in decibels is just as important as the frequency response. Ceramic and magnetic headphones are unsuitable; crystal and dynamic ones are recommended.⁶ Since the testing of headphones involves the use of an artificial ear, and since an artificial ear sets up its own resonances over six thousand cps and below three hundred cps, it is only from three hundred cps to six thousand cps that it is possible to test headphones reliably. In line 73 of Table I, it is shown that claims are made for the various headphones that cannot be verified by test. The suppliers generally do not indicate intensity variation of headphones with their frequency response. Consequently, the information they provide is valueless. Before purchasing headsets, one should insist

⁶Ibid., pp. 84-89.

upon the necessary technical information.

Experience has shown that headsets are the laboratory accessories most likely to be damaged by students. They should, therefore, be picked also for their ruggedness. Types A and F shown in Figure 6, page 49, and Figure 11, page 50, have proven to be rugged.

Cushions increase the wearer's comfort and also augment isolation from extraneous noises. Foam rubber cushions seem to be comfortable, on the other hand, their porous nature favors the accumulation of dirt and makes them subject to shredding.

The Winnipeg School Division has found a fabric-covered cord to be suitable. The composition cover is subject to damage by fingernails or other sharp objects. Undoubtedly, spiral stretch cords that have just reached the market will soon have an important place.

Hayes states that a suitable student microphone could be dynamic, ceramic, crystal or magnetic with a frequency response of 100-8,000 cps ± 5 db, but the teacher recording microphone should be dynamic with a frequency response from 40-15,000 cps listed, 100-10,000 cps ± 5 db or less, with a generally rising characteristic. There is no reason for preferring either high or low impedance microphones. The frequency response of the microphones shown in Table I seems to be sufficient, but again information should be obtained about deviation of intensity.⁷

At the current stage of development, no amplifier should be rejected because it uses tubes or because it uses transistors. In interpreting amplifier specifications, it should be borne in mind that they must

⁷Ibid., pp. 91-92.

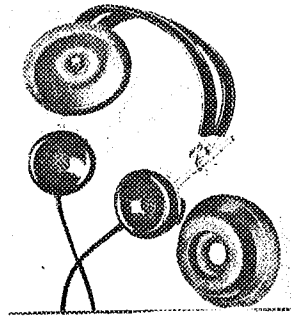


FIGURE 6
TYPE A

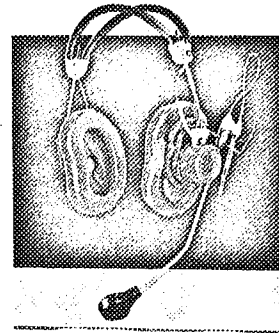


FIGURE 7
TYPE B

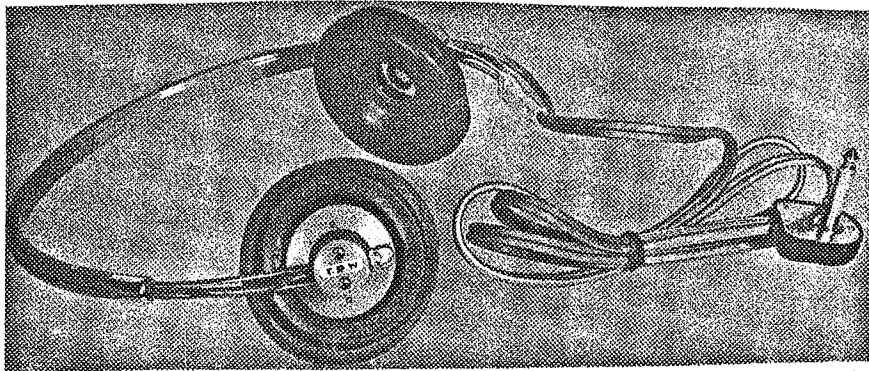


FIGURE 8
TYPE C



FIGURE 9
TYPE D



FIGURE 10
TYPE E

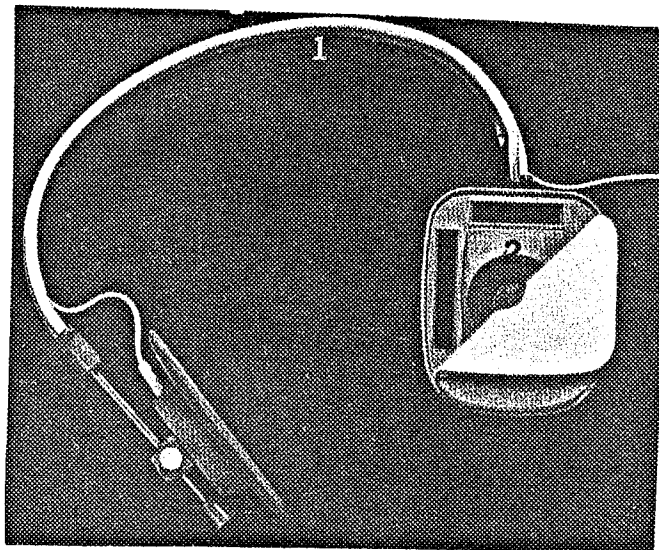


FIGURE 11
TYPE F

have characteristics exceeding the expected performance of the entire system by a considerable margin, so that the unavoidable deficiencies of the other components (principally headphones) will be better controlled and to permit shaping the tonal balance and the response curve of the system, as described previously without introducing additional distortion.⁸

All but one of the language laboratory systems described in the table leave the volume control at the discretion of the student. This would seem necessary because the sensitivity of hearing varies from individual to individual, and a pre-set level, such as is found in the Stencil-Hoffman equipment, would likely function at a level unsuitable for some students.

Many types of mountings have been devised for microphones, and several of these present disadvantages. The common type of mounting is a boom attached to the headset (Figure 12, page 52). The use of this type is discouraged because it adds considerable weight to the headset. For example, the Electronic-Futures' headset with its microphone and radio receiver weighs almost five times as much as the Dage-Bell headset. This heavy weight causes students to tire. Even the best headset can become quickly uncomfortable. The attaching of a microphone to a headset also makes it possible for a student to point his microphone unintentionally towards another speaker. As a result he may pick up his neighbour's voice more clearly than his own. The use of a gooseneck support (Figure 13, page 52) is to be discouraged because it creaks when it is being adjusted, and it tends to break and droop after some wear. The movable stand (Figure 14, page 52) is undesirable because it can easily

⁸Ibid., pp. 79-80.

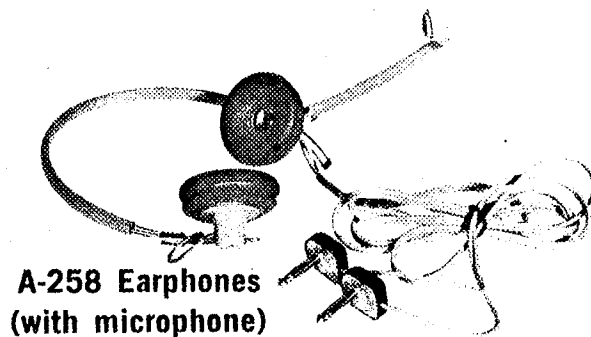


FIGURE 12
HEADBOOM

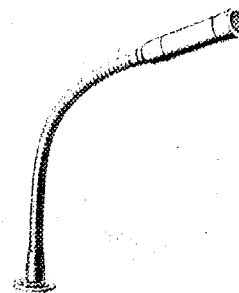


FIGURE 13
GOOSENECK



FIGURE 14
DESK TOP



FIGURE 15
NECK
SUPPORT

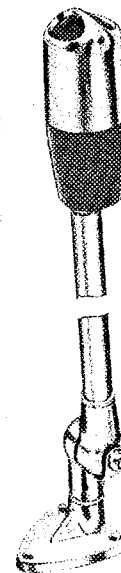


FIGURE 16
DESK-MOUNTED
RIGID BOOM

be pushed off a table and it often occupies premium space. Holding the microphone in the hand occupies a hand which may be needed for writing or operating the equipment. One can also tire of holding a microphone in a steady position for a whole period. The neck microphone (Figure 15, page 52) is unsuitable because its position does not permit it to pick up speech without distortion. The rigid-arm support (Figure 16, page 52) on a swivel is possibly the most satisfactory from the point of view of endurance and ease of handling. However, it may not always be possible to get the proper position of the microphone from it.

The microphones should be equipped with an on-and-off switch at the control of the student, even though frequently students will forget to turn on their microphones. Since a good part of the time in the language laboratory is given to passive listening, it seems unwise to have the program masked by background noises picked up through the student microphone and amplified to his ears.

Only one of the systems described in Table I has wireless student-console intercommunication. In systems that use wires for communication, a complex forty-position laboratory will require well over a hundred lines. Until a simpler system of distribution is devised, all attempts to make complex language laboratories portable will be unsuccessful. Most of the time will have to be given to the laying out of wired connections and to picking them up again. Electronic Futures has taken a step to solve this problem by using radio transmitters and receivers as well as antenna loop attached to the walls of the room. They have not defeated completely the problem of radio interference from other transmitters. In effect, they

have also had to do away with student monitoring because this would require each student to transmit on a different frequency. At present to monitor, the instructor has to move from student to student and plug into his headset. The flexibility of this system is restricted since it transmits only two frequencies. This means that at any given time a student has a choice between only two programs. In addition, the receivers are so devised that in order to change channel the student must exchange receivers. Until these problems can be overcome, it would seem that language laboratories will continue to have wire intercommunication.

If a student is to select a program, the greatest flexibility is available in the Chester system (Figure 4, page 41) where the student can dial whatever program is listed during the current period. In a few other systems the student has a choice of as many as ten channels. This is a narrower choice than one would get from the Chester system. With the students who lack sufficient maturity to persist working with a given program until they have mastered it, it would seem preferable not to place the program selection at the discretion of the student. Most systems seem to have taken away that choice from the student. The student in these situations will either take the program that is given to him or signal the instructor to ask for a change.

The systems that leave the program selection up to the teacher offer a range from two to ten channels. Ten channels may be necessary where two or three instructors work at the same time, but if the laboratory is to be operated by one instructor only, who is responsible for selection of programs, operation of machines, and monitoring of students as well as answering questions, it seems that four channels are ample.

On the other hand, two channels may frequently be insufficient. It is not difficult to imagine a high school group that would have to work at more than two different levels. One should also keep in mind that it is desirable to have extra channels to which students may be switched without any delay.

One of the important helps that the language laboratory offers the instructor is the facility to monitor at any time, without warning, and undetected, a student sitting in any position in the room, and to offer him encouragement or help privately if he needs it. Most language laboratories with wire intercommunication have facilities for monitoring students, but they differ considerably in the complexity of the switching operations required to do this monitoring. Ideally, monitoring should be made possible with the operation of one switch. If double switching or more is required, the result is unnecessary inefficiency.

Language laboratory users have gone through a long period of research to determine whether it is desirable to have recording facilities for students. The conclusion seems to be that at times it is desirable to record, particularly when oral testing is involved, and that at other times, it is unnecessary. As a result, planners of language laboratories tend to provide some positions with recording facilities and others without. If recording facilities are not to be provided for every student, they should be located in a remote position so that their use is not tied to the selection by the student of one sitting position. Wherever a laboratory is planned with recording facilities for only part of the students, provisions should be made for the adding of recording facilities to the other positions at any time in the future without modification of the equipment installed earlier.

CHAPTER IV

PHYSICAL LAYOUT OF THE LANGUAGE LABORATORY ROOM

Student position. The following questions need to be considered:

- (1) Will there be a special student cubicle provided? (2) If there is, will it have two sides, three sides or will it be a completely enclosed four-sided room? (3) Will the furniture be made of metal or wood?
- (4) Will the front be transparent or opaque? (5) Will the booth be rigid, or will it fold down to an ordinary desk? (6) What type of surfacing will be used on the table and the partitions? (7) What size will it be?
- (8) Will the front be sloped or vertical? (9) How high will the table need to be? (10) What sort of facilities will be provided for storage of headphones and books?

Booths are provided because it is considered that students can do more profitable work if they are (at least partly) visually and acoustically isolated from other students. If a teacher is able to make students feel that privacy is of no importance, then the need for an enclosed cubicle almost disappears. Headset manufacturers claim that large cushions deaden the direct transmission of voice sufficiently to eliminate the distraction of surrounding voices. Chester and Electronic Futures claim that the microphones that they use are so short ranged that they will not pick up the voices from the adjoining students. For that reason Chester has eliminated the acoustic partitions in its students' booths. Only experimentation with the actual equipment will prove whether the claims of the manufacturer are exaggerated. Nevertheless, there is definitely a tendency to devise equipment that will make acoustical furniture unnecessary.

The best type of visual and acoustical isolation can be provided by a four-walled cubicle. It should be known, however, that not any partition will provide complete acoustical isolation. Construction planned to remove sound transmission is expensive. The use of completely enclosed cubicles makes visual supervision almost impossible. It also adds to the cost of providing air-conditioning. The three-sided booths offer only partial visual and acoustic isolation. The two-sided booths provide even less. If the students are to be expected to spend much time watching a screen, it may be advisable to do away with the front of the booth, for any glass front will give a certain amount of glare or distortion. But even a two-sided booth will create certain problems if students are expected to watch a screen from a seat at the side of the room, since they have to look at an angle to the left or to the right.

It would seem that the main value in having a transparent front to a booth is to allow visual supervision. Supervision is certainly essential with some high school classes. If visual supervision is unnecessary, then an opaque front would increase the privacy and would make possible the use of a surface which is more sound absorbent than glass.

Manufacturers tend to supply metal furniture rather than wooden furniture. The metal furniture is easier to assemble and takes up less room. It is more expensive than wooden furniture but, on the other hand, should last longer. The objections to metal furniture are that it may create a static electricity problem, and that it carries sound much more than wood.

Some furniture has been designed to fold, thus permitting transformation of a language laboratory into a classroom. A shortage of rooms

and the limited number of language classes may dictate this arrangement. Certainly a complex laboratory with a rigid-booth installation would not be a very suitable teaching situation. However, the folding booth will pose a maintenance problem and when the fronts are raised, visual supervision will be impossible. Before planning a laboratory with folding booths it would be well to consider whether by sharing the facilities with the commercial, music, and English departments among others, it may be possible to use the laboratory as a laboratory most of the time, and thereby make its existence as a laboratory economically justifiable.

The surface of the table in the booth should be hard-surfaced, even though this surface is undesirable from the acoustical point of view. A composition surface or a wood surface covered with formica is quite suitable, and it is easy to keep clean. The partitions are normally made of perforated metal interspaced with batting or ordinary acoustic tiles. If the latter are used, they should be removable because they will damage easily. Pegboard is durable but not sound absorbent.

The booths will need to be at least thirty inches wide for comfort, and the partitions should extend between the students at least twelve inches back from the table edge. The front of the booth should be sloped inward toward the student in order to trap as much sound as possible. However, if the front is of transparent material it should be placed vertically in order to avoid glare if overhead lighting is used. If a tape recorder or an amplifier is to be set into the table, considerable thought must be given to the height of the table. Some tape decks are as much as seven inches deep. Once adequate allowance has been made for the legs of a large high school student, the top of the table may be too high for the shorter pupils.

Booth arrangement. The arrangement of student booths in a language laboratory should be determined by pre-established priorities. Some of these priorities may be economy of space, vision of a point by the whole student group, proximity to the instructor, or privacy. If space is at a premium, the most economical arrangement in the rectangular room consists of straight rows from side to side, each row facing an alternate direction in order to reduce by half the number of aisles required (Figure 17, page 60). If all students are expected to follow from one screen or one blackboard, then the straight rows from side to side are still the most economical arrangement except that the students will all have to face in one direction, and twice the space will have to be given to aisle-ways (Figure 18, page 60). If the students' vision is to be improved, or if the instructor's visual control of the class is to be at its best, then a preferred arrangement is the semi-circular one on a tiered floor (Figure 19, page 60). This arrangement is not economical of space and calls for expensive construction. Some phoneticians insist that if they are to use the language laboratory for their classes, they must be able to observe the lip movement of their students at all times. If this is so, then the preferred arrangement would be a circular one around the console so that, in effect, every student has a front row seat (Figure 20, page 60). If on the other hand, students need privacy, the straight row arrangement with all students facing in one direction may be used and the console can be placed at the back of the room, or if the straight row arrangement with the students facing in alternate directions is used, then the console may be placed at the end of the row. Then, if the partitions of the booths are sufficiently high, the students are visually isolated at all times.

LABORATORY BOOTH
ARRANGEMENT PLANS

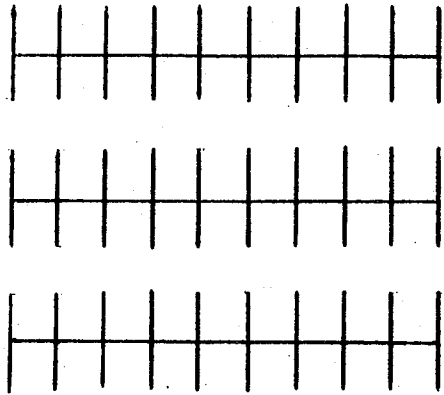


FIGURE 17

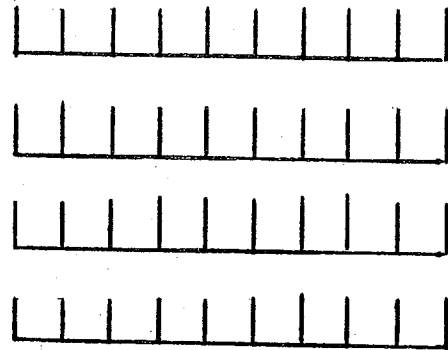


FIGURE 18

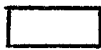
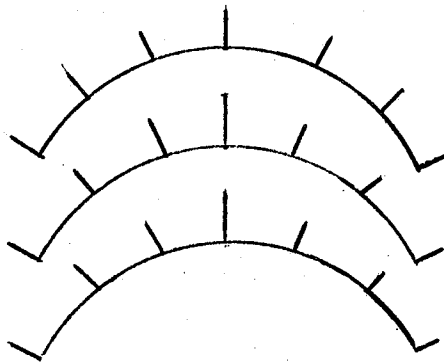


FIGURE 19

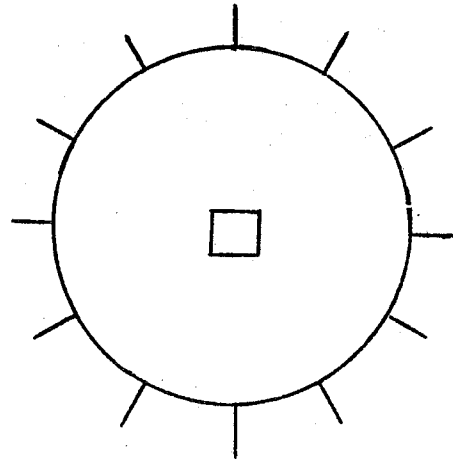


FIGURE 20

The console. The preceding discussion of the arrangement of booths in a classroom has pointed out that the console may be located at the front, at the back, at the side, or at the center of the language laboratory. If there is to be considerable freedom in student use of the language laboratory, as to time and the selection of programs, and if the equipment is of an automatic selection type, such as the Dialog System, then there is no need to have the console in the same room as the student cubicles. It may be preferable to have student cubicles located in many strategic positions around the school building. Each of these would be connected remotely to the control center. If the console is located in the same room as the student cubicles, it may be enclosed behind soundproof glass partitions. This plan would appear particularly useful if more than one instructor is to work at the console at the same time. Or again, if the workroom is linked with the console, it is then possible for two or three instructors to work and talk with the technician without interfering with the progress of the students. If, on the other hand, administrative arrangements are such that normally only one instructor or technician is at work in the laboratory, the provision of a soundproof glass enclosure for the console seems to be unnecessary. In fact, it may be an inconvenience for the teacher who must at all times deal with the students only through the inter-communication system. In the normal high school situation, it seems likely that there will be times when the instructor will wish to ask students to hang up their headphones to cool off their ears, while he proceeds to give them some explanation or preparation for a forthcoming exercise.

If the operator of the console is expected to supervise the students' conduct in the laboratory, the console should be raised at least eighteen inches above the floor for a forty-position laboratory, and more if the height of the ceiling permits. The console should be so designed that the instructor can operate it from a sitting position. This position permits him to be less obtrusive during the periods of laboratory study and will make the periods of laboratory operation less demanding physically. The operation panel should be sloped at a fifteen degree angle toward the instructor to permit easier reading of operating instructions. Language laboratory planners are warned against increasing this angle too much because then the console cuts the instructor's line of vision and makes supervision of the front rows, at least, almost impossible.

If the console is a large one, the rectangular shape is the least desirable because the ends will be away from the operator. A U or L-shaped one would likely make the equipment easier to reach. If the laboratory has eighty or more positions, it may be preferable to place the console in the center of the room. In this case, it could be H-shaped with the two operators facing each other and sitting sideways to the classes. It would also seem advisable to use the deadspace under the console for storage of materials. However, since heat tends to be generated in the console, it is not wise to store tapes in it.

Up to this point, only the physical design of the console has been described. Something needs to be said about the equipment that it includes. One could conceivably find there tape recorders, turntables, a radio, video-recorders, and projectors. It is not likely that the console is a suitable place for a projector since projectors tend to be

noisy. Their operation would make necessary the closing of all microphones.

If discs are to be used, it would be economical to make copies from them in some remote location and to work only from tape in the language laboratory. Unless discs are used with extreme care, they quickly lose their fidelity, and tend to become noisy. If radio programs are to be used in the laboratory, it would also seem wise to work from recorded copies, and the facilities should be provided in an adjoining room for the recording of radio programs.

If the school envisages using programs of high visual content, it would seem that a video-recorder and closed-circuit television would be useful. In this case the video-recorder should be located at the console.

It may be possible to save money by using tape playbacks at the console rather than recorder-playbacks. If recording facilities are required for the students, recorders should be placed at the student position, or a remote recording facility should be provided.

All of the microphone supports that were described earlier for the student positions are available for the teacher position. It would seem, however, that the rigid arm on the swivel base is not sufficiently flexible for a teacher, since the teacher is expected to move from one end of the console to the other, and occasionally work standing up or sitting down. A long spring-mounted rigid boom, such as is used for desk lamps, has proven suitable for use at the console to support the teacher microphone.

Tape duplicators. Several copies of a program may be required in one of two situations: (1) If students work individually at their positions from master tapes, (2) if several schools, several laboratories,

or several classrooms are likely to use the same program at the same time. If the first situation exists, the laboratory should be planned for duplication from console to student position. In this way, it is not necessary to remove the tapes from the student decks. If the second situation exists, it may be desirable to have some better tape duplicating facility. It may be possible to obtain a system that will duplicate at a faster speed and will produce copies of higher fidelity.

A high quality tape duplicator is manufactured by Ampex (Figure 21).

TAPE DUPLICATOR

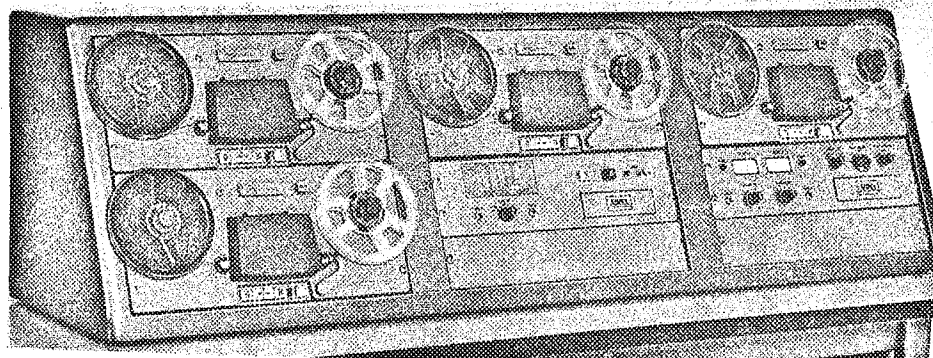


FIGURE 21

AMPEX

It costs about two thousand dollars for the master and a thousand dollars for every one of the slaves. In addition to being expensive, this equipment requires a trained technician for its operation and consequently would seem to be beyond the needs of most school systems, not to mention schools. The second best tape duplicating system is provided by the Dage-Bell (Figure 22, page 65) or the Magnifax duplicators that operate

TAPE DUPLICATOR

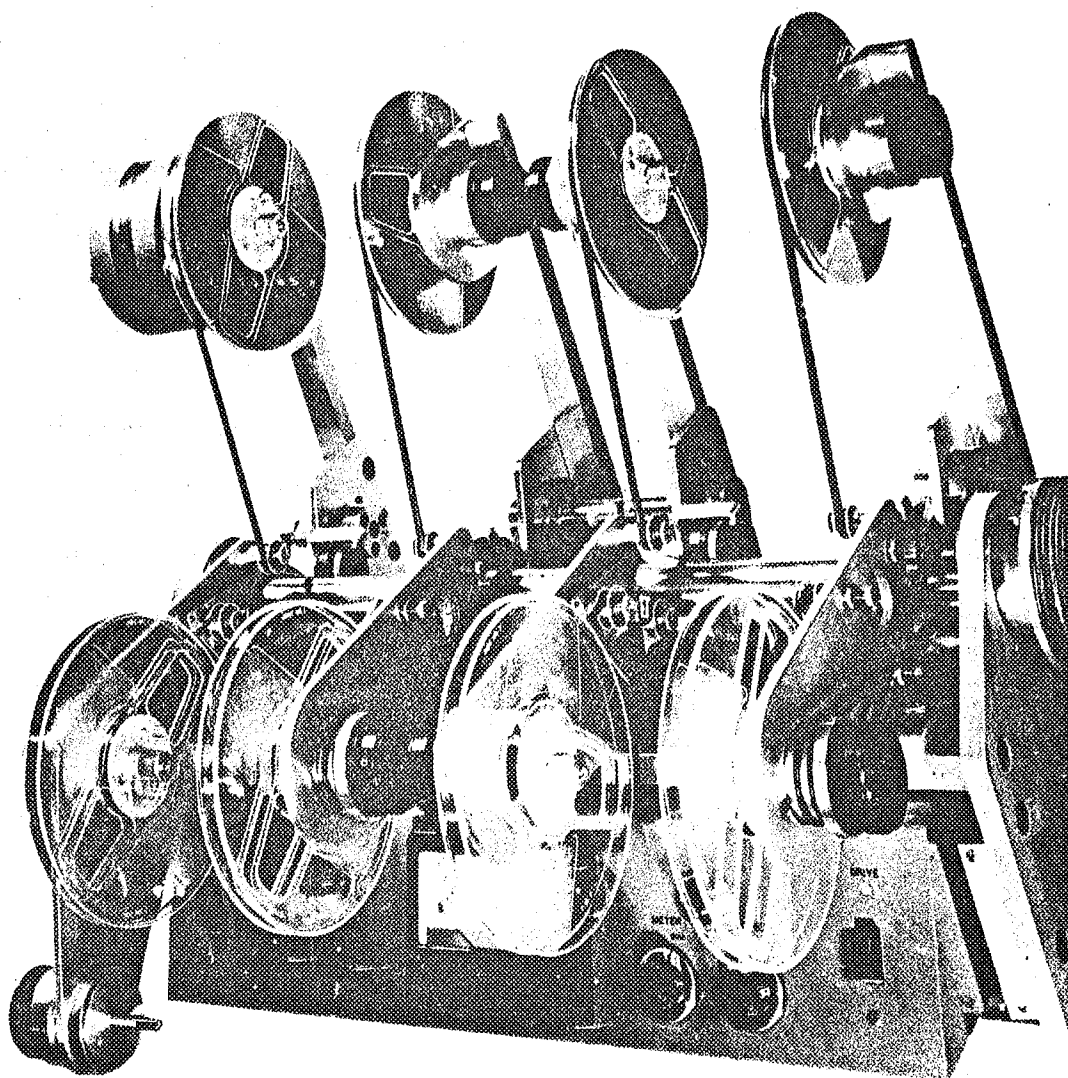


FIGURE 22

DAGE-BELL

at a speed of thirty ips, duplicating in reverse. Each master or slave on these machines costs about seven hundred dollars. The next best resort is to connect two or three tape recorders together. A large school may place two such machines in the recording studio and use the equipment for the preparation of master tapes as well as for editing purposes. Sometimes the tape recorders in the console are used for duplication purposes, since they tend to be of higher quality than those placed at the student positions. A disadvantage here is that duplication has to be carried on when the language laboratory is not in use by students. Even if tape decks are of good enough quality and are properly matched for reproduction of good copies, they are normally slow since the maximum speed is usually seven and a half ips.

Blackboards. Should there be blackboards in a language laboratory? If the language laboratory is used only for individual work, the use of a blackboard may be restricted to the posting of notices, and in that case it should be in a location easily visible on entrance. If, on the other hand, the laboratory is used for handling full classes under the direction of a teacher, and, if the booths are arranged in such a manner that the front of the room can be visible to all, it would seem desirable to have a blackboard at the disposal of the teacher for giving necessary explanations, or even sometimes for providing models of correct answers or corrections for dictations. Care must be exercised to place the blackboard so that it is visible to all and yet accessible to the teacher. Consideration could be given to having such a blackboard mounted on a slide to permit placing it in locations where it is easy to write, and then to allow raising it

to make it more visible to the entire student group. Blackboards that slide one behind the other are also useful, since they may save the teacher the trouble of rewriting a dictation or an explanation three times in a row for successive classes.

Storage facilities. The language laboratory will only be as good as the materials in its library. There must be a diversity of recorded materials available and accessible. In planning a laboratory, provision must be made for the storage of several hundred reels of tape, used and empty. There must be scripts of each of the recordings. The scripts may be stored in filing cabinets if there are only one or two copies, or in filing boxes if several copies are required. Filing boxes are useful for storing guide sheets that students may require to follow certain programs. There must be an index and a cross-index file to permit easy finding of materials. In addition there should be storing facilities and a working counter for the use of auxiliaries such as tape splicers, bulk erasers, splicing tape, tape dispensers, head cleaners, lead tape, and other needed tools.

Recording studio. In the same way that a good teacher will not be satisfied with the exercises provided in the textbook, the teacher who understands the use of a language laboratory will not be satisfied with the commercially-prepared materials. The alert teacher will discover particular problems and certain areas which he will want to cover in a special way. In order to do this he will require special scripts written and recorded. The recording of a good master tape requires a recording studio. A recording studio of eighty square feet is large enough, unless one plans on making recordings with large groups.

No two walls in it should be parallel. At least double doors are required and these should be mounted on rubber cushions. Glass in the walls or in the doors should be avoided at all costs. A good acoustic partition can be made of two separate sets of alternating two-by-four joists interwoven with insulation bats. Particular care has to be paid to the ceiling. If it should be of tile construction on a suspended frame, it will conduct sound from room to room. In this case the ceiling will have to be covered with several inches of insulating materials.

It is advisable to have the recording studio on the top floor to avoid the noise of feet from above. It is also desirable to avoid proximity to any room from which noise emanates, for example, an auditorium, a typing room, or a music room. It is advisable to have air-conditioning in the recording studio. The air duct should have two ninety degree turns in the section leading to the recording studio, and the inside of the pipes should be lined with absorbent materials. Hard-finished surfaces should be avoided on the studio walls and floor. Varnished plywood, masonry, and linoleum floors are generally unsuitable as these materials reflect sound. Rugs and acoustic tile are preferable.

The tape-deck in the recording studio should have a monitor-speaker so that headsets are not necessary for checking the quality of the tapes. It is not likely that a recording studio in a normal school system requires a separate operating room. The average teacher can be trained to operate his own equipment satisfactorily, and microphones may be mounted so as not to pick up the sound from the tape recorder. The provision of the separate operating room makes the presence of a technician almost mandatory, and school systems are not yet ready to hire the required technician.

Tapes. In the operation of a tape recorder, it is desirable to use two reels of the same size. Otherwise, a loop of loose tape forms frequently when the machine stops and starts. Tape tangling and spillage results--a situation that need not occur in a well organized laboratory. It would seem desirable, therefore, to standardize on a five-inch reel. No laboratory should need a reel larger than seven inches. Needs for a full year, at least, should be estimated and large single orders should be placed to take advantage of the lot prices. For every full reel of tape that is purchased, two or three empty reels should be obtained for splitting the full reels into the necessary lengths of programs. One should not be afraid of cutting tapes to the desired length.

The strongest tape available is the one and one half mil Polyester or Mylar. The use of this type of tape will avoid delays caused by breakage. In addition, this type of tape will have a longer life than acetate tape which tends to become very brittle with age. The large suppliers of tape, such as Minnesota Mining and Manufacturing, Ampex, Audio-Tape, and Irish, supply at least three grades of one and one half mil polyester. A precise technical description of the difference between these tapes is not available. In many instances, the third grade of tape is adequate for school purposes--for student use, if not for the preparation of master tapes.

The technique of trial and error is recommended for discovering the suitable tape. The following are some of the flaws that may warrant a rejection of certain grades of tapes: (1) the oxide flakes off, (2) the oxide rubs off at such a high rate that the heads have to be cleaned frequently, (3) the tape is so uneven in width as to jam in

the guides, (4) the reproduction volume is uneven, (5) the oxide is coated with a clear plastic substance as in the tapes called sandwich tapes. [This coating is soluble in water. When the humidity in the air is high, deposits of this plastic will form very quickly on the heads, and they are more difficult to rub off than the oxide itself.] In addition, the presence of the plastic coat has the effect of keeping the oxide away from the head thus causing a poor quality of reproduction. Among the first lines of tapes available, there is one type from which the oxide has been polished after preparation of the tapes. From these tapes practically no oxide will flake or rub off, high fidelity is insured, and head wear is reduced since the abrasives have been removed from the tape surface. This is undoubtedly one of the best qualities of tape available. However, if one is prepared to put up with occasional defective tapes, money can be saved since third class twelve hundred foot length tapes can be purchased in quantity at less than two dollars and fifty cents each. This is about a dollar less per reel than the first grade tapes. It seems that the main difference between a first and a third grade tape is the constancy of quality.

Choice of systems. For purposes of this discussion, language laboratory systems are grouped into three categories. Equipment may be of the type which is easily movable in and out of the classroom, or from classroom to classroom; or secondly, it may be designed for putting away conveniently in the classroom; or thirdly, it may be so complete as to cause the room to be used almost exclusively as a language laboratory.

The movable equipment is either portable or mobile. The following are six commonly known types of portable equipment: (1) a tape recorder-playback, (2) a tape recorder-playback with an auxiliary speaker,

(3) a tape recorder-playback with a wireless transmitter, (4) a tape recorder-playback with several headsets plugged in, (5) a tape recorder-playback with several headsets and microphones plugged in, (6) a tape recorder-playback program source with several other tape recorders provided for student recording of responses.

The use of the wireless transmitter is not recommended because of the cost of a system that requires a radio receiver for each student, and because of the weight of a radio receiver on the student's head. Storage of forty radio receivers during periods of non-use is very space consuming, and the distribution of this equipment before periods of use as well as its collection at the end of such periods, is time consuming. There is also a danger of damaging equipment when it has to be handled to such an extent by so many people.

The use of several headsets plugged into a tape recorder has been encouraged by language laboratory advertisers. The usual approach of the advertiser is to suggest that even the poor can now own language laboratories since they too can afford a tape recorder and several headsets. The limited usefulness of such a system may not justify even the small financial outlay that it requires. Headsets may not guarantee better hearing than a loudspeaker. In addition, when the headset is not audio-active so that the speaker's voice is amplified through a microphone to his own headset, the student will hear himself less clearly than if he were wearing no headset at all. Headsets alone are useful only if part of the group within a room is to listen to a program without disturbing the others.

The use of headsets with an attached microphone poses the problem that the student's individual microphone can pick up the voices of the surrounding students almost as well as his own. The privacy that the equipment is supposed to provide by placing large cushions over each student's ears, is now violated by the microphone that picks up all of these extraneous noises to blurr the clarity of the program that the student is receiving. To this must be added the disadvantages previously mentioned of excessive weight to be carried on the head, as well as the loss of time involved in the putting away of equipment.

Bringing several tape recorders into a classroom makes a moving day out of an ordinary class period. The inconvenience involved is enough to discourage the regular repetition of this practice. If the master tape is one with pauses for student participation, the student recording will be uneven, soft for the master voice, since the microphone picks up from a distant source, loud for the student's response. In addition, if the whole class is responding simultaneously there will be a large amount of background noise on the tape. If a teacher plans to make an objective evaluation of student responses for the class, it may be wise to use a double-track tape recorder, and to ask one demonstrator student to record on the lower track.

The use of an auxiliary speaker with a portable tape recorder player adds to the problem of moving equipment sufficiently to discourage its use with any regularity. If the situation is such that the equipment must be carried from room to room, a good quality tape recorder-playback alone should be used.

If, on the other hand, it is possible to mount a good tape recorder player in a mobile cabinet, the main weakness of portable tape recorders, namely the smallness of the speaker, can be overcome by mounting a large speaker into the cabinet. If the tape player does not have sufficient output, an additional amplifier can be added. The equipment in such a unit would not weigh in excess of fifty pounds, and would provide high quality reproduction equal, or superior, to what can be played through most headsets. In addition, a part of the tape library could be stored in the mobile cabinet. Such unit, provided that it be mounted on good casters, can be moved very easily from room to room if these rooms are on one floor. There is normally no reason why the language classrooms cannot be grouped on one floor. Teachers can be grouped in the building, by the subject they teach, rather than, for example, by the grades they teach.

About the equipment that should be provided in a full-scale laboratory, there are four alternatives: (1) the audio-passive laboratory which is designed for student listening only, (2) the audio-active laboratory which is designed for student listening and, in addition, where the student's response is made into his own microphone for amplification to his own headset to provide better opportunity for self-evaluation, (3) the audio-active-comparative facility which provides, in addition to the facilities listed in number two, the possibility of individual student recording and playback for objective student evaluation, (4) the audio-active testing system which, in addition to the facilities provided in number two, allows for recording of student responses to a test which the instructor can score conveniently. The system in this case, may not provide facility for the student to hear what he has recorded. The

comments that were made earlier about the unactivated headphones would apply here also.

Note should be taken of a study conducted at Colgate University to determine the relative effectiveness of four basic systems of laboratory equipment.⁹ The four basic systems were: (1) headphones only, (2) audio-active headphone microphone, (3) record playback (long-delayed playback, not audio-active), (4) short-delayed playback which gave the sound back to the student after each utterance. The results of the study suggest that for improvement of pronunciation, the audio-active headphone microphone is superior to unactivated headphones.

In the same article, another experiment is reported.¹⁰ In the latter experiment, there were four classes of students in first year French, thirty students in each class, in the Easton Area High School, Easton, Pennsylvania. Each group spent one fourth of its daily class period in laboratory practice, but each group used a different type or combination of equipment. The group using audio-active-record equipment exclusively, excelled only in pronunciation, but the group using audio-active equipment for eighty percent of the practice time, and audio-active-record equipment for the rest, gave the best performance in listening and in speaking.

While there is no study that demonstrates the advantage of the audio-passive system over the others, there are studies reported that demonstrate the usefulness of both the audio-active system and the audio-

⁹Joseph C. Hutchinson, The Language Laboratory-How Effective Is It? (Washington: U. S. Office of Education OE-27021, 1964), p. 14.

¹⁰Ibid.

active-comparative system. The choice between the two systems may be determined by cost. The audio-active system would normally be at least two hundred dollars cheaper than the audio-active-comparative system per student position. If the best system is desired, it should be the audio-active-comparative; but if cost need to be considered, then the other is adequate. However, when an audio-active system is installed, provisions should be made for the addition of the comparative feature at a later date, without any major alteration. If the audio-active-comparative system is provided, the instructor should keep in mind that there are many instances where the use of the comparative feature is less than profitable.

If it is possible, there should be provision for recording students' oral tests. The oral skill is the skill of language which is the most difficult to evaluate, and the most time consuming. Many language programs have been weakened because students received no credit for development of lingual facility. If there is to be a balanced emphasis on all four skills of language teaching, a way of evaluating lingual facility will have to be found. The individual interview and the day-to-day rating of effort by the teacher is only second best and subjective. The provision of recording facilities in a language laboratory, making it possible to record simultaneously the responses of several students to constant stimuli, is the only way known, at present, of evaluating lingual facility.

CHAPTER V

ADMINISTRATIVE USES OF LANGUAGE LABORATORIES

The provision of suitable and dependable equipment in the language laboratory is a first condition of its successful use, but by no means is it a guarantee. The administrative planning for school and class use of the equipment will always remain one of the major factors in determining the success achieved.

Whether to use the language laboratory as a library, or as a classroom is one of the first administrative decisions that has to be made. In the laboratory which is used just as a library, students come and go as individuals picking the time, as well as the programs, that they want. In the laboratory that is used as a classroom, students come as groups under the direction and supervision of a teacher. There are advantages to using the laboratory as a library. The laboratory practice may be in addition to the regularly scheduled class time rather than in place of it. Some of the time that a student would normally give to writing assignments for homework, he will now use in doing oral drills. This practice should tend to develop student responsibility, since to a large extent he must be left free to decide how often he should use the laboratory, the type of exercise he should select for practices, and the amount of practice that he should give to the chosen area. If the school uses team teaching, the existence of a language laboratory may make possible the extension of team-teaching techniques in language teaching. Students can work in large groups in the language laboratory, each progressing at his own rate. The preparation of students for laboratory drill sessions can be made with

fairly large groups. When the student thinks that he has had sufficient practice in one area, he can report to his instructor, who by working with small groups or even with individuals, will determine in free language exchange whether the student can use the structures that he has learned.

Many publishers of new programs for language learning include records for home study with their materials. By integrating the student record-take-out-service with the language laboratory, it may be possible to give students the choice of working at home or working in the language laboratory. With the library type of organization it is possible for students to come to work before school hours in the morning, or to work during study period, at noon hour or after four. It is likely that, even if the common method of using the laboratory is the classroom arrangement, some of the day may be set aside for the use of the laboratory as a library.

The use of the laboratory as a library may cause some administrative difficulties, viz. that all students spend enough time in the language laboratory, that they use the time spent there efficiently, that their presence not develop into a discipline problem, and that optimum use be made of the facilities by distributing the number of students who want to make use of the laboratory over the whole day. Many students learning language in Manitoba junior and senior high schools at present, have not acquired sufficient maturity to realize how much of this intensive drill is required for satisfactory progress in language learning. For that reason, another administrative problem would be the providing in the laboratory at all times of a teacher that can give the necessary guidance.

Many students will miss the guidance of their language teacher in the language laboratory, because in the library type of situation they will be under the supervision of a teacher who is a technician or, at least, not their own language teacher.

On the other hand, there are many reasons that seem to warrant the use of a language laboratory as a classroom. The learning of a language requires a large amount of drill on the part of the learner. Drill tends to become dull. Boredom results in lack of progress and complete discouragement. The presence of an interested teacher may be necessary to assure the perseverance of the many language students who are not highly motivated. It seems that the proper supervision of practice is a major contributor to progress. In the study conducted at Colgate University and upon which the writer commented on page 74 (Chapter IV), it was shown that effective as each of the four types of equipment used showed itself to be in helping the student learn, none showed itself so important as the classroom instructor who is a perceptive observer of his students. The contribution the instructor makes in re-enforcing the student's self-correction and practice is indispensable.¹

In 1960-61 Mr. Eric Bauer of Notre Dame University conducted a study to determine which of two sets of laboratory conditions--those controlled by the individual and those controlled for the group--would be more helpful to college students in second year German. Results of both oral and written tests indicate the advantage of instructional supervision in laboratory sessions, especially during the first six weeks of the semester.²

¹Joseph C. Hutchinson, The Language Laboratory-How Effective Is It? (Washington: U. S. Office of Education OE-27021, 1964), p. 15.

²Ibid., p. 17

If supervision of the laboratory practice session by the subject teacher is valuable to the student, it is no less valuable to the teacher. It is only by being present that the teacher will become aware of how well his students have been prepared for the exercise that they are expected to do. He will notice the common errors, he can decide how much drill on any particular structure is required, he can single out the students who have special problems and those who would benefit from enrichment rather than from additional repetition. He can judge the suitability of the material as to pace, length of pauses, length of phrases, clarity of directions, complexity of the mental operation required. He can decide when the exercise ceases to be profitable. He can interrupt the whole class to provide the explanation required to make the practice beneficial. In addition, if discipline problems develop, they can be treated in context. The student who is able to handle his work well and finds it challenging and interesting, seldom becomes a discipline problem. Conversely, if a student does become a discipline problem in the language laboratory, the teacher may well consider what difficulties the student is having with his language program.

The teacher who accompanies his class to the laboratory will have to be warned against two tendencies. The first is the temptation to treat all pupils as if they were able to learn at the same rate and needed the same exercises. The well-designed language laboratory allows individualization of instruction, and the teacher will need to learn how to capitalize on the flexibility provided by the language laboratory. When the teacher monitors individual students, he will be tempted to interrupt the student's drill with suitable explanations. In fact, he may perpetuate the impression,

so common to language classrooms, that explanation is more important than practice in language learning. The teacher will have to learn to make notes of students' difficulties, and refrain from interrupting drills with lengthy explanations.

The appointment of a laboratory director is necessary even though all of the language teachers accompany their classes to the language laboratory. Someone should co-ordinate the use of this room by the several teachers of the language department. The language laboratory director, in addition, can be responsible for equipment maintenance. He may help in the training of teachers for effective use of the equipment, and may also direct the work of laboratory assistants who may do many of the routine tasks involved in keeping a language laboratory in good running order. It is not wise to name a language laboratory director who is not acquainted with language teaching. On the other hand, it is wasteful, to say the least, to use a competent language teacher to perform many technical duties that can be turned over to a technician.

The provision of language laboratory equipment is sometimes justified on the basis that it reduces the teaching load. Those who support this position claim that the teacher is responsible for less routine oral drill since much of this can be done by the machines. They also claim that the amount of written drill required decreases when a student has achieved a certain oral competency with the same material. As the teaching becomes more oriented to the development of correct performance, rather than understanding the structure of language, explanations of the "how" of language become less and less necessary. In fact, Professor Joseph R. Reichard at Oberlin College in 1960-61 conducted an experiment with a

first year German program, in which practice in the laboratory was closely integrated with work in the classroom. According to Professor Reichard's report, the project produced evidence that one teacher can teach twice as many students as he formerly could and not impair the quality of the student's accomplishment.³

On the other hand, a teacher will discover new concerns that come with the establishment of a language laboratory. The supply of commercially prepared recorded materials may prove inadequate, and the conscientious teacher will want to prepare his own. The materials received or prepared will need to be catalogued, indexed, and cross-indexed. Even the experienced teacher will find a need to do much reading and experimenting in order to familiarize himself with the new techniques. The teacher will need practice to learn to handle the equipment efficiently. The laboratory will make possible closer supervision of students during drill sessions, although this supervision takes time, and it results in a greater awareness of student problems. The teacher who has been freed from drilling, which is physically demanding, will now be able to do more free conversation, because his students have mastered basic patterns, and are ready to use language more naturally. There will be a tendency to give less time to writing, reading and translation, and more time to audio-lingual work.

The area of audio-lingual skill will open up as a field requiring thorough evaluation. This evaluation requires the preparation of objective

³Ibid., p. 16.

tests, and the giving of additional time to marking. But, in spite of the addition of all these responsibilities, school boards that have spent large sums to provide a language laboratory installation will be reluctant to reduce the teachers' hours of teaching or the pupil-teacher ratio.

Albert Valdman's research at Indiana on the teaching of French is already producing evidence that when students learn units of specially programed materials in the laboratory and work regularly with the instructor in small groups in "display" sessions, virtually all of the routine teaching of a language can be turned over to the laboratory. Preliminary results indicate that students in laboratory classes have a higher retention rate than students in conventional classes, and a much greater oral proficiency though their reading ability is less.⁴

It seems, therefore, that the teacher who has access to a language laboratory may be freed from much of the drudgery of language teaching. But even though the teaching with language laboratories may be more interesting and more productive, results will not be obtained with a reduction of effort on the part of the teacher.

The administrator and the language teacher should determine the ideal frequency of language laboratory use. The benefit to be obtained from a language laboratory is the development of habits and skills. These require constant and regular practice, every day if possible. Even where students have access to home practice records, regular practice should be provided at school, because the poorer students tend to be irregular in the amount of time given to practice sessions at home. A study on this subject carried out in ten New York City High Schools with five hundred and twenty-three second year French students, showed that half the experimental groups had practice sessions in the laboratory every day.

⁴Ibid., p. 21.

The other half only once a week. The results indicate that students who had only one laboratory practice period a week made no more gains than those in the controlled groups. In one school, the controlled group even made greater gains than the once-a-week group. Students who had daily practice, however, made dramatic gains. (A study in the same schools a year earlier showed that positive results could be achieved with two laboratory periods a week.)⁵ All evidence indicates that it is preferable for the teacher to have access to the language laboratory every language period. Since it is unlikely that this arrangement always will be administratively possible, a minimum of two visits a week should be allowed.

The usual forty-five minute class period is too long for the language laboratory, because it exceeds the normal attention span. The language laboratory exercise is demanding because it proceeds at a steady pace set by machinery which ignores the whims of the students. A period of ten to fifteen minutes is likely to be the most productive. Well-motivated students may continue to work productively for thirty minutes. However, the teacher must keep in mind that as soon as interest wanes, learning stops. No amount of psychological theory will make a student learn after he has lost interest, or has ceased to pay attention. It is easy to perform many of the language laboratory exercises while in a semi-conscious state, so that little learning takes place. If administration dictates that the language laboratory period must be forty-five minutes in length, then the teacher must provide sufficient diversification of activity to retain student interest.

⁵Sarah W. Lorge, "Foreign Language Laboratories in Secondary Schools--A Special Report Summarizing Four Years of Research by the Bureau of Audio-Visual Instruction, Board of Education Of the City of New York, for the New York State Education Department, 1959-1963," Audio-Visual Learning, Board of Education of the City of New York, Vol. VII, Oct., Nov., 1963, No. I.

The following list of activities may suggest ways to provide a variety of exercises for a long laboratory period in order to retain student attention: (1) listening for comprehension, for intonation, for pronunciation, or for enjoyment, (2) mimicry, (3) substitution exercises, (4) transformation exercises, (5) phonetic drills, (6) change from audio-active use of the laboratory to the audio-active-comparative use of the laboratory, (7) use of visuals in the form of films, filmstrips, wall charts, blackboard sketches, or desk sheets, (8) following in a text, (9) writing a dictation. It is also refreshing to the student to get a change of voices on tape. It may also be profitable to change from a slower tape to one which moves at a faster pace. And finally the awakening effect upon the students that can be achieved through the inclusion of short tests for self-evaluation should be mentioned. The tests may also encourage students by showing that some progress is achieved, even though it may not be discernible to the student otherwise. In spite of the need for a great variety of exercise, a good rule to keep in mind is that students benefit more from active participation than from passive listening. By and large the exercises should call for student participation. No more than twenty-five percent of the exercises should be of the passive type.

CHAPTER VI

THE PREPARATION OF RECORDINGS

The demands made upon teachers to prepare their own recordings are decreasing constantly, because the supply of commercially prepared material is becoming extensive and of good quality. There is also an increasing possibility of teachers exchanging materials that they have prepared. But useful as teacher-prepared material may be, it seems an uneconomical use of time to expect the teacher to prepare all the materials required. Most of the demands will be satisfied if the school selects a program which is linguistically oriented, and if an ample supply of good recorded material accompanies it. The progress in the development of language programs has been so rapid recently that materials five years old, are now out-of-date. Generally, those who have tried to bring traditional programs up-to-date by adding laboratory exercises and taped material of various sorts, have been only partly successful. The laboratory exercises provided to accompany the new programs may be supplemented with pronunciation exercises, such as those prepared by Professors Pierre and Monique Léon¹ of Toronto University, comprehension exercises such as the school broadcasts prepared by the Manitoba Department of Education, recordings of literary passages that are available from a variety of commercial sources, and drills with limited vocabulary on problem structures

¹Pierre et Monique Léon, Exercices systématiques de prononciation française, 1 et 2, and Introduction à la phonétique corrective (Paris: Hachette et Larousse, 1964).

that are intended to fit in with a variety of programs.²

But even with access to the wide selection available, the teacher will find that certain areas are not adequately covered by these materials. In that case, and only in that case, should the teacher have to prepare any. To write a good twenty-minute program, a teacher will require about three hours. Programs should not exceed twenty minutes, for more than that would put a definite strain on the student's attention span.

The writing of a script can proceed as follows. The teacher can first of all list the points that he wants to cover. Then he can select about six of these for one program and decide on the type of item that is most suitable to deal with each of these problems. It is wise to plan on the four-phase drill consisting of stimulus, student response, tape correction, and student repetition, since it has been found successful. Once the points to be covered have been listed, they should be arranged in order of appearance on the script. Logic may decide that one section has to come before another, since learning is cumulative. But if there is no logical reason for arrangement, the sections may be arranged to provide as much variety as possible. Eight to twelve items per section are considered to be ideal. Fewer than eight items is not enough to form a habit, and more than twelve makes the exercise monotonous. The directions should be brief and clear. Standardization and the use of English may help achieve that purpose. An example is usually necessary, and using the example again as the first item of the section may be a good way to build up the student's confidence.

²K. S. Pond and J. Peyrazat, Quick-Change Audio-Drills in Fundamental French, (Englewood Cliffs, Thompson Ramo Wooldridge Inc. [date not available]).

The script writer will have to experiment in order to determine the normal length of sentence that the students can remember, particularly when they are called upon to modify some part of that sentence. A group of similar sentences progressively increasing in length is prepared and students are asked to repeat each to determine their limit. The teacher accustomed to preparing written exercises will find a tendency to use sentences that are too long. It is also considered good practice to avoid introducing new vocabulary in a structure drill. The script should be written out in all detail to permit the speaker to concentrate entirely on making a high quality recording. Then the first page of a tapescript (Figure 23, page 88) should be filled out to provide the necessary information for proper filing.

Completion of the first page requires the assigning of a proper catalogue number. Every school will want to design its own cataloguing system suited to the existing conditions. The symbols used in cataloguing should be as meaningful as possible and the cataloguing plan should be comprehensive and flexible enough to permit the inclusion of all materials that will be accumulated. It is well to consider that at some time the laboratory may be used by teachers of several languages, commercial teachers, music teachers, etc. The following are catalogue numbers that have been found suitable.

EF8-EP-8-1

Elmwood School	French	Grade Eight	Ecouter et Parler	Chapter Eight	First Tape
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DFX - PAF - 25-1

Tape Number

FIRST PAGE OF A TAPESCRIP

Grade 10

Date 6/65

Subject

superlative of adjectives
"bon", comparative and superlative
"aussi --- que"

Text author

Keiser

Pp.

22/23

Prepared by

Roy

Spoken by

Benoît and Roy

FIGURE 23

F10-TL-C65

French	Grade	Test	Listening	Easter	1965
	Ten				

FM-133

French	Music	One hundred and thirty-third song acceded to library.
--------	-------	--

FSB-29

French School Broadcast	Twenty-ninth broadcast acceded to library.
-------------------------	---

As soon as a satisfactory recording has been completed some two or three feet of the tail should be left on the tape, and then it should be cut. The empty, marked reel should be placed on the spindle where the feeder reel was previously located and the program tape should be rewound into the marked reel. If it is considered desirable, a leader tape can then be spliced on the front of the master tape. It is possible to use a white leader tape on which information can be written, or it is possible to obtain leader tape in half a dozen colours for use in coding.

If any changes in the tapescript are found necessary during the recording session, these changes should be incorporated before the tapescript is typed and duplicated for placing in the file. A sufficient number of copies of the tapescript should be placed in the file to permit all teachers to prepare for the use of the tape and to exchange scripts with other teachers from other schools. At this time, using the information provided on the first page of the tapescript, an index (Figure 24, page 90) and cross-index card (Figure 25, page 90) should be made. The file, the tape reel, and the box should be clearly labelled with the catalogue number. The Avery Kum-Kleen Label, a gummed label, is available from most stationers

DFX - PAF - 25 - 1

Superlative of adj.
comp & sup. of "bon
"aussi-que"

Superlative of adjectives

DFX - PAF - 25 - 1

FIGURE 24

"aussi.....que"

DFX - PAF - 25 - 1

"bon", comparative and
superlative

DFX - PAF - 25 - 1

FIGURE 25

at a reasonable price, and comes in practically every size desired.

The teacher should be particular about the quality of the tape used for the master recording. The tape should be tested for brittleness and should be free from splices. If the tape has been exposed to dust and other dirt, it should be cleaned before being used. This can be done by placing the tape on a tape recorder without threading the tape through the heads. If the dirt consists only of a small quantity of dust, the tape can be wiped by using a soft filter paper, or a wad of cotton wool folded over the tape and held there as the tape is rewound at high speed. For heavily contaminated tapes, the wet cleaning method employing a wadding moistened with methylated spirits is more appropriate. If possible, the tape should run through the moist wadding first and then through a dry wadding. Care should be taken to guide the tape properly so that its edges do not scrape against the flanges of the reel. Because the tape may be over-recorded, or because the recording head may not be perfectly aligned with the erasing head of the tape recorder, it is advisable always to bulk-erase the tape which is to be used for the master recording. There are two types of bulk-erasers available. Either one is suitable. Figure 26, page 92, shows the counter model.

A suitable room for recording also needs to be selected. This may be something of a problem if a recording studio is not available. The room should be away from street noises, moving classes, playing children, ringing telephones, etc. It should not be too large and should contain absorbent materials such as rugs, upholstered furniture, and drapes. The speaker should have his back to the wall rather than his face. Otherwise, echoes will bounce off the wall and into the microphone to blurr



FIGURE 26

MAGNETIC ERASER

the quality of the recording.

The recorder should be the best one available and the microphone should be of good quality. The microphone should be on a stand since noises will be caused by handling during recording. The microphone should be located as far away as possible from the recorder so as not to pick up the motor noise. However, it should be placed sufficiently near to allow the person recording to operate the tape recorder.

Extraneous noises in recording can be minimized by speaking as close to the microphone as possible and turning down the volume accordingly. The speaker should not be so close, however, as to record breaths, whistling on the teeth or lips, or exceedingly sharp sounds of the letter "P". The proper distance will vary with each microphone and each speaker, and consequently, a certain amount of experimentation is in order every time a change is made. The person recording will have to set the volume by watching the VU meter or the magic eye, to make sure that the volume is not turned up too high.

The speaker who is over-tired should not make a recording. The tone of the laboratory periods will depend to a large extent upon the tone of the recording. Consequently, the speaker's delivery should be energetic, the speed should be at least up to normal and possibly a little faster, the voice should be pleasant. A certain amount of experimentation may reveal that certain voices of the teachers in the language department are more suitable than others, and they may be asked to make the greatest part of the recordings, while those who are not so gifted may give more of their time to preparation of scripts. Some teachers will object to recording on the grounds that their pronunciation in the language they teach is poor. If their speech is not up to standard, they should not be teaching the language. Having to listen to one's inferior recordings may be a valuable incentive to improve one's lingual facility. However, this reasoning should not be pushed too far, and if the quality of speech of the teacher concerned is indeed poor, the students should not be deprived of the opportunity of hearing good, correct, natural speech recorded by

other persons. It is not unusual to find students imitating a recorded voice better than the teacher. Using two voices to make a recording also adds a certain variety, makes the practice more useful by exposing students to different voices, and may serve to clarify the recording for the students by having one voice record the question and another record the model answer.

CHAPTER VII

AN EVALUATION OF FIVE PROGRAMS

Five high school programs that the authors claim to be applications of modern linguistic theory will be examined in this chapter to evaluate their quality and to determine whether they make it possible to capitalize upon the language laboratory equipment that is now available in some high schools. Bloomfield, Fries, and Lado will be used as authorities to arrive at principles of language theory based upon modern linguistics.

The French Curriculum Sub-Committee of the Manitoba Department of Education, over the last two years, examined a great number of high school programs before narrowing its choice down to five; namely, (1) Audio-Lingual Materials,¹ (2) Je parle français,² (3) Learning French the Modern Way,³ (4) Le français: Ecouter et parler,⁴ and (5) Voix et images de France.⁵ Since these programs represent, at least, a good sampling of the programs

¹Nelson Brooks (ed.), Audio-Lingual Materials (New York: Harcourt, Brace and World, Inc., 1964).

²Lavelle Rosselot, Je parle français (Wilmette: Encyclopaedia Britannica Films, Inc., 1961).

³James A. Evans and Marie Baldwin, Learning French the Modern Way (New York: McGraw-Hill Book Co., Inc., 1963).

⁴Dominique G. Côté, Sylvia Levy, and Patricia O'Connor, Le français: Ecouter et parler (New York: Holt, Rinehart, and Winston, 1962).

⁵P. Guberina (ed.), Centre de recherche et d'étude pour la diffusion du français (CREDIF), Voix et images de France (Paris: Didier, 1964).

available, they were selected for special study. The method proposed by each one will be considered to determine whether it is linguistically modern and to determine whether it is consistent with the philosophy of language laboratory users.

A linguistically modern method of language teaching. Modern methodology suggests that the following principles are basic to modern language teaching.⁶ (1) Teach speaking and listening first, reading and writing next. Speech cannot be invented by the student; it has to be imitated. (2) Have the students memorize basic conversational sentences. (3) Establish the patterns of the language as habits through pattern practice. (4) Teach the sound system structurally for use by demonstration, imitation, props, contrast, and practice. (5) Keep the vocabulary load to a minimum while the students are mastering the sound system and the grammatical pattern, then expand the vocabulary to adequate levels when the basic structure has been mastered. (6) Teach the problems, that is to say, those units and patterns of the second language that are structurally different from the first language. The problems differ according to each native language. (7) Teach the patterns in cumulative graded steps.

The insistence on drill, with the object of developing a habit, is relatively new to language teaching. In the past, language teachers have been more interested in producing an understanding of grammar. Evolution was begun by Leonard Bloomfield, who said:

To understand the form is only the first step. Copy the forms, read them out loud, get them by heart, and then practice them over and over again day after day, until they become entirely natural

⁶Robert Lado, Language Teaching. A Scientific Approach (New York: McGraw-Hill, Inc., 1964), pp. 50-54.

and familiar. Language learning is over-learning; anything less is of no use.⁷

But the over-learning of sentences is merely the beginning. The student must perceive the pattern in each sentence, and he must be able to put words into this pattern without changing it; or again, he must be able to change the pattern to fit the given situation. The idea of learning patterns rather than just sentences is clearly expressed by C. C. Fries:

. . . there are many "patterns" that must eventually become the customary molds into which the productive expression must fit without conscious thought. . . . these, in the early stage of language learning, remain for considerable time on the level of production with conscious choice rather than a production as an automatic unconscious habit. Only after much practice of the same "patterns" with diverse content do the patterns themselves become productively automatic. When the student has reached this level of achievement, with a satisfactorily useful but definitely limited range of vocabulary items, he has "learned the language."⁸

According to Lado five steps are necessary to make a student aware of a structure: (1) a single sentence used as an attention pointer, (2) minimally contrastive examples that differ only on the point being made, (3) a repetition of additional examples by the class, (4) comments or generalizations elicited inductively from the class, and (5) practice with attention centered on the structure being taught.⁹ The exercise to make the student aware of the structure replaces the grammatical explanation of the traditional grammar and should take only a very small part of the teaching time. Most of the time should be given to pattern practice, which

⁷Leonard Bloomfield, Outline Guide for the Practical Study of Foreign Languages (Baltimore: Linguistic Society of America, 1942), p. 12.

⁸C. C. Fries, Teaching and Learning English as a Foreign Language (Ann Arbor: The University of Michigan Press, 1945), p. 9.

⁹Lado, op. cit., p. 95.

Lado defines as "rapid oral drill on problem patterns with attention on something other than the problem itself."¹⁰ As long as the student is called upon to construct or modify a structure his attention is directed to that structure or problem. The attention of the student can be directed somewhere else, for example, by calling for a substitution in another part of the sentence. Lado repeatedly insists that no habit is being formed as long as the attention of the learner is centered on the problem itself. For that reason he holds that simple repetition and conscious choice drill are not pattern practice in the technical sense.

The notion that learning a language is not to be confused with the acquisition of vocabulary was given strong expression by CREDIF.¹¹

Il y a des mots qui servent sans cesse, d'autres qui servent fort peu. Si l'on veut que le vocabulaire présenté puisse très vite être utilisé par l'élève, il faut d'abord qu'il ne soit pas trop considérable; il faut lui enseigner et le forcer à employer les mots et les constructions essentiels, fondamentaux.

Encore faut-il que ces notions essentielles soient choisies méthodiquement, à partir d'une enquête assez vaste pour offrir un échantillonnage suffisant . . . le vocabulaire utile est surtout un vocabulaire général de relation (verbes, mots grammaticaux, adjectifs et adverbes), assorti d'un certain nombre de mots concrets indispensables.¹²

The vocabulary and grammatical items listed in Le français fondamental¹³

¹⁰ Lado, op. cit., p. 105.

¹¹ Georges Gougenheim et al., L'élaboration du français élémentaire (Paris: Didier, 1956).

¹² P. Gubarina (ed.) CREDIF, Voix et images de France (Paris: Didier, 1964).

¹³ G. Gougenheim et al., Le français fondamental (1^{er} degré) (Paris: Publication de l'institut pédagogique national, 1959).

are recognized today as being the most scientifically prepared list. They serve as a reasonable guide for the writing of programs which must be selective in the materials that the student is expected to learn initially.

In summary then a linguistically modern method of language teaching proposes the following steps of learning: (1) the audio-lingual over-learning of model sentences without attention to structures but with care to obtain correct sound production, (2) the pointing out of structures to be learned by comparison and contrast, (3) the development of understanding by substitution and transformation drills, (4) the development of automatic language use by pattern practice, (5) the perfecting of sound production by methodological drill in context on problem areas, (6) learning to read and write what has been mastered orally, (7) keeping all this practice on a narrow area of scientifically selected vocabulary.

Examination of five methods. In the examination of the five programs it is proposed: (1) to indicate the form of vocabulary control, (2) to list the steps used in the development of a unit, (3) to examine the type of pattern drill offered, (4) to indicate the type of pronunciation exercises recommended, (5) to indicate what type of laboratory use is recommended.

Audio-Lingual Materials¹⁴ is the first program to be examined. (1) It uses Le français fondamental¹⁵ as a basis of vocabulary control. In this way the student is protected from having to face an undue vocabulary burden from the beginning.

¹⁴Brooks, op. cit.

¹⁵Gougenheim, op. cit.

(2) In a standard unit, the student is expected to begin by memorizing a basic dialogue through imitation after he has been given in English its approximate meaning. Additional vocabulary items are presented in supplement to the basic dialogue. The student is then encouraged to re-use the material of the dialogue in the dialogue adaptation, in answering questions, and in restating information.

(3) The following types of drills are used:

(A) repetition, (B) substitution,

a) person-number substitution, e.g.

Je reprends
Elles
Tu

b) item substitution, e.g.

Tu as assez d'essence?
argent?
amis?

c) double-item substitution, e.g.

Il cherche de vieilles histoires.
voitures.
belles
écharpes.

d) replacement drill, e.g.

Vous descendez au magasin.
Ils
regardent
Tu

e) number substitution, e.g.

Nous prenons les billets ce soir.
Je prends les billets ce soir.
Elle prend un dessert.
Elles prennent un dessert.

f) drills with construction changes, e.g.

Vous m'avez compris. Vous ne m'avez pas compris.
Nous l'avons trouvé. Nous ne l'avons pas trouvé.

(C) question-answer,

a) choice questions, b) yes-no questions, c) cued responses, d) free responses

(D) translation drills, e.g.

I thought a lot. J'ai beaucoup pensé.
It rained a lot. Il a beaucoup plu.
We talked a lot. Nous avons beaucoup parlé.

From the drill exercises the student moves on toward free expression, first of all by doing directed dialogue, e.g.

Question: Pierre, demandez à André où il va passer les grandes vacances.
Response: Pierre, où est-ce-que tu vas passer les grandes vacances?

In addition a conversation stimulus is provided to guide two students to engage in conversation using an area of vocabulary and structures that they have been able to master. The variety of drill exercises provided is at least as great as in any of the other four programs compared. These exercises are generally suitable for classroom as well as for laboratory work.

In experimentation with Grade 7 students at Churchill High School in the 1964-65 term, it was found that only the very best students could benefit from the double-item substitution drills and that fewer still gained from doing replacement drills. It seems as difficult to get students to acquire a feeling for structure through these pattern drills as it has been to get students to understand and remember grammatical generalizations in the traditional language programs. But if students do not understand it is not because of the shortage of drills. In each unit drills are provided in such quantity that the enthusiasm of the teacher is very highly taxed to retain student interest. Of all the types of drills provided,

only the item-substitution drill satisfies Lado's principle previously mentioned. The other drills call for understanding and conscious manipulation of the structure. In the example given in (B) b) the structure to be learned is "tu as assez." The student is expected to repeat this structure several times during the course of the exercise. But his attention is turned away from this structure by asking him to substitute words such as "argent," "amis" for "essence." In each of the other types of drills the attention of the student is directed to a structure problem, e.g. a verb ending, the position of an adjective, or the position of the negative particles "ne pas." These drills may be very effective in making students aware of the structures that they are to learn. But according to Nelson Brooks this is knowledge that the student will have to forget before he is able to use the language naturally.¹⁶ To use language naturally one must be able to forget that one is using countless structures.

(4) Audio-Lingual Materials¹⁷ in the first level cover most of the pronunciation problems that a native speaker of English would encounter in beginning to use French. Suitable recognition and contrasting exercises are included in each lesson. As an example, here is one of the exercises given in the pronunciation of the nasal "on."

faux - font
beau - bon
nos - non
mot - mon
allô - allons

¹⁶ Nelson Brooks, Language and Language Learning. Theory and Practice (New York: Harcourt, Brace, and World, Inc., 1960), p. 47.

¹⁷ Nelson Brooks (ed.), Audio-Lingual Materials (New York: Harcourt, Brace, and World, Inc., 1964).

on --- allons --- allons-y
 on --- cherchons --- nous cherchons mon pick-up
 on --- écoutons --- nous écoutons onze disques
 on --- regardons --- nous regardons mon cahier
 on --- non plus --- moi non plus

donnons --- nous donnons --- nous donnons onze disques --- nous donnons onze disques à la belle fille blonde

(5) This program is intended for use in a language laboratory. All dialogues and drills are on recordings of high quality. The Teacher's Manual suggests that laboratory drill sessions not exceed twenty minutes, and that they be held at least three times a week, or more often if possible.¹⁸

Audio-Lingual Materials,¹⁹ therefore, has good vocabulary control. It also has an abundance of pattern drills aimed at making students conscious of structures, but a lack of pattern drills aimed at developing automaticity. The pronunciation exercises are thorough and the materials favor the integration of a language laboratory into the program.

The program Je parle français, (1) is based on the Vander Beke word list rather than on Le français fondamental. About one-third of the words from Le français fondamental are not found in Je parle français and conversely, about six hundred words that are in Je parle français are not found in Le français fondamental. This means that beginning students exposed to Je parle français are obliged to learn words that are of low frequency in usage. On the other hand, words that are extremely useful are omitted from the program.

¹⁸ Nelson Brooks (ed.), Teacher's Manual: Audio-Lingual Materials (New York: Harcourt, Brace, and World, Inc., 1964), p. 32.

¹⁹ Nelson Brooks (ed.), Audio-Lingual Materials (New York: Harcourt, Brace, and World, Inc., 1964).

(2) The units in this program are introduced by dialogues, which are intended for mimicry-memorization, as are the dialogues in Audio-Lingual Materials. The meaning of these dialogues, however, is conveyed by films rather than by the provision of an English equivalent as in Audio-Lingual Materials. The wisdom of depending upon visual aids and second language explanations to provide meaning instead of an English explanation, as recommended by many modern linguists, can be questioned. However, the use of films is sometimes defended on the basis that their use may result in better retention.

(3) Je parle français provides little help in the teaching of important and difficult structures. After the dialogue, the teacher is given a list of structures to stress, for example Lesson 14:

Le bureau de la secrétaire.
 Le bureau de la bibliothécaire.
 Le bureau de votre professeur.
 Le bureau du professeur.

But the teacher is not told how to stress these structures, and this is precisely the type of help that a language teaching program is supposed to give. Je parle français does not use pattern drills at all; it resorts entirely to questions and answer drills. Because a student, in answering a question, will have to change the person of the verb found in the question, or again, will have to change the person of the possessive adjective or pronoun, it is presumed that he will master these forms. However, it does not take into account the fact that frequently, in answering questions, one uses exactly the same forms as are found in the question; for example, if the verb in the question is in the third person, the answer is also in the third person. The student does not have to produce the structure since

it is given to him in the question. Considerable ingenuity is required to provide a group of questions dealing with one problem, sufficient to provide the students with enough practice to achieve mastery.

The book of supplementary exercises, which is intended to be used for written homework, does not overcome this weakness of the program.

The following is an example of exercises that appear commonly:

Parlez-vous espagnol?

Non, je --- anglais.

One of the few examples of substitution is found in the following exercise where the student is expected to replace the noun object by a pronoun:

Qui regarde la carte?

Nous _____.

This type of substitution is found only rarely in this program; most of the exercises are of the question-and-answer type. At regular intervals, in the manual, are summaries of grammatical items that have been taught up to this point. These may be sufficient to ensure understanding, but the program is not sufficiently structured to provide the intensive drill which is required on individual problems. The author claims that a careful plan of re-entry of material has been worked out. This is illustrated in accompanying literature by referring to the use of the negative in the program. At the same time, there is an insistence on the fact that the re-entry is done not with mathematical precision but rather in a natural way. Languages are not taught in a natural way, and it still remains to be demonstrated that the re-entry of material, as it occurs in this program, is sufficient.

(4) There seems to be no plan for covering the full range of pronunciation problems. Undoubtedly a teacher familiar with the language will find opportunities to teach most of the problems of pronunciation. However, the inexperienced teacher may be unaware that he is ignoring certain problems; and, if he discovers these problems he may not know the type of exercise to use to help the student.

(5) The author,²⁰ Lavelle Rosselot, recommends making constant use of a film projector and tape recorder for a clear and correct model. It can be said therefore, that this program can be used with a simple language laboratory. However, it is not designed for use with a complete language laboratory including a variety of channels and teacher monitoring facilities. The imitation exercises could be used in the laboratory, but the question-and-answer exercises are not suitable since every question is different from the preceding one and, therefore, the student is not given sufficient guidance to know precisely what answer is expected. With machine directed drill, there should be reasonable sureness that the student will be able to give the right answer in the provided interval.

In addition, several answers can be elicited by a single question. A student who gives one of the correct answers, but different from what had been anticipated, may be discouraged when the correction model provided by the tape doesn't tell him that other answers would be correct. The program Je parle français has high quality "visuals" and high fidelity recordings but structurally it is a program similar to the direct method described earlier.

²⁰Lavelle Rosselot, Instructional Manual. Je parle français (Wilmette: Encyclopaedia Britannica Films Inc., 1962).

The following are conclusions that can be made about Je parle français:

- (1) The vocabulary is not based on Le français fondamental, (2) the drills are mostly of the question-answer type and do not concentrate sufficiently on problem areas, (3) there is no formal plan for teaching pronunciation, (4) it is unsuitable for laboratory use.

Learning French the Modern Way²¹ is also (1) based on Le français fondamental. (2) In this program, filmstrips are used as props to aid in the memorization of the dialogues at the beginning of each lesson too. The English equivalents are given for the dialogue, and then students practice until their imitation is acceptable. In the third stage various devices, such as questions and answers, are used to get the student to repeat the basic sentences frequently enough to make them automatic. In the fourth stage, there are substitution exercises in which a similar word or related structural item is replaced in a pattern sentence, e.g.

Ils prennent leurs sièges.
leurs cahiers.
leurs livres.
des glaces au chocolat.
du coca.

The authors call the fifth stage self-expression. Here the student is called upon to answer questions according to directions affirmatively or negatively, using the pronoun "nous," or using information from the dialogue or from his personal life. The next step is free conversation or speech with only a topic provided.

²¹James A. Evans and Marie Baldwin, Learning French the Modern Way (New York: McGraw-Hill Book Co., Inc., 1963).

(3) It should be noted that the substitution exercise used in this program is in fact the pattern practice of which Lado speaks. However, there is doubt that students have sufficient preparation at this stage to benefit from an exercise which is aimed solely at turning the attention of the learner away from the problem. The students have been imitating sentences and answering questions but they have not been given exercises to make them familiar with the structures. The students may not even be aware of the problem; they may not even be aware that there is a certain structure to be learned.

To this point the program has directed the teacher to obtain class repetition and imitation only. The teacher has not been given directions to point out elements of a structure. The intermediary steps that Lado recommends to make these students aware of a structure have been by-passed. The danger, in this type of learning, is that it will be parrot-like and lacking in flexibility. The student will succeed very well as long as he is called upon to use the sentences he has met in the basic dialogues. In this program the transformation exercise is deliberately avoided because the authors consider it unnatural and monotonous. It uses, instead, long series of questions or it gives directions to the student to ask certain specific questions. The efficacy of this device for obtaining mastery of patterns and structures by students has not been conclusively demonstrated.

Two other weaknesses stand out in this program. Each of the units ends with a grammar generalization resembling that found in traditional programs. Teachers who are traditionally oriented and who find that the drill exercises of the text are ineffective, may resort to the deductive

manner of teaching grammar and start each lesson by the explanation of the grammatical rules.

(4) Another weakness of the program is its lack of guidance to the teacher in the teaching of pronunciation. The Teacher's Manual suggests certain pronunciation points that should be evaluated in each lesson, but it gives no guidance as to how one is to overcome the pronunciation problems.

(5) This program permits the effective use of a language laboratory. There is an abundance of high quality audio-aids recorded at a good speed and with suitable intervals. The drills are four-phase drills with stimulus, response, correction, and imitation. The writer was unable to find any example of questions to which two responses were equally possible. These drills also apply the principle that the confidence of the student must be built up by always giving him the feeling that he knows the expected answer.

To summarize then, it can be said that Learning French the Modern Way (1) is based on Le français fondamental, (2) it has question-and-answer drills and substitution drills, but no transformation drills, (3) it gives little help in teaching pronunciation, (4) it is designed for use with a language laboratory.

Another program in which the vocabulary is based (1) on Le français fondamental is Le français: Ecouter et parler.²² (2) Each of its units in Level One begins also with dialogue for which an English equivalent is provided. This is to be memorized for perfect oral imitation. Several

²² Dominique G. Côté, Sylvia Levy, and Patricia O'Connor, Le français: Ecouter et parler (New York: Holt, Rinehart, and Winston, 1962).

questions and answers are provided as additional practice to aid over-learning. (3) This is followed by a series of pattern practices and all are indeed pattern practices as Lado understands them. E.g.:

- (1) Il faut que j'aide ma mère.
je parte tout de suite.
je rentre immédiatement.

The pattern to be learned here is "il faut que."

- (2) Ne veux-tu pas aller chez Simone?
chez les Martin?
à la foire?

The pattern to be practiced in this example is "ne veux-tu pas aller?"

- (3) Alors, pas de sport aujourd'hui?
pas de football?
pas de basketball?

The structure to be acquired here is "pas de."

In this program the repetition and substitution exercises are combined. Here again one finds no transformation exercises and the criticism that was expressed earlier about the drills in Learning French the Modern Way applies to this program also.

The drills of each lesson are followed by a dozen other dialogues called Conversations. They are re-combinations of basic sentences learned in previous dialogues. They should be of considerable help in over-learning. The authors of this program have made an attempt to control scientifically the entry and re-entry of materials. They have agreed on principles stating how many times a new structure should be used when it is first introduced, and how many times a new word should be used when it is first introduced. They have also set forth a schedule for re-entry, decreasing the number of times that the structure or the word is used at each stage of re-entry, and lengthening the gap between the re-entries. Each lesson

concludes with a series of topics for report. This should provide students an opportunity of demonstrating their command of the basic sentences and patterns that they have learned in this, and preceding lessons. The tremendous amount of work required in the strict control of material in this fashion would have been impossible without the use of a computer. It seems that the authors have been able to produce dialogues that sound normal and real even under the strict control of a computer. Only experience will tell whether the frequency plan that they have set up for the introduction of materials is a good one. It may be found that there is no single suitable plan for all types of students, but that one would have to have different plans for students of different linguistic ability.

(4) Specific pronunciation teaching points are selected for each lesson and suggestions for teaching these problems are found in the Teacher's Manual. A chart for rating oral skills is provided.

(5) The dialogue, the questions and answers, and the pattern practices are all provided on tape. The recordings of high quality make this program a desirable asset for the teacher wishing to use a language laboratory. In addition, the basic dialogues are on take-home records as they are in the other four programs. These take-home records have finally made possible oral homework even in a home where only one language is spoken.

The Teacher's Manual provides step-by-step guidance to the teacher for the whole program. The detail is so great that some teachers have considered this manual an insult to their professional ability. However, it is likely that this detailed guidance for the teacher will be extremely useful. The successful language teacher of the future will be not the one who goes into the classroom after having decided what he will teach and

trusts to inspiration to provide a method. These details of method are time-consuming and are frequently neglected, unless the program provides explicit help for the teacher.

Le français: Ecouter et parler is one of the best audio-lingual programs now available for high school students of French. It has, however, one weakness, which is the same as that found in Learning French the Modern Way. It stresses the aspect of habitual reaction in language to the exclusion of the aspect of understanding. If a choice had to be made between teaching language to achieve habitual reaction and teaching language just for the understanding of generalizations, the first of the two choices would be preferable because it is a first step towards uninhibited use of language. The second, alone, will never produce a natural user of language. In fact, it will set obstacles by directing the learner to dissect language rather than to use it. This emphasis on habitual use is a reaction to an opposite extreme which was found ineffective in language teaching analysis. But there does not have to be a choice between the two. It may well be that the final answer will be a compromise, very much as Lado suggests, with several intermediary steps to make students aware of structures and patterns to be learned followed by intensive drill to make the learner unconscious of the manipulations that he is performing when he uses the language.

In summary one can say that (1) the vocabulary of Le français: Ecouter et parler is taken from Le français fondamental, (2) that the drills are aimed almost exclusively at developing habitual reactions, (3) that there is an abundance of opportunity for interesting practice, (4) that the re-entry of material is mathematically controlled and yet interesting,

(5) that there is a plan for teaching speech production, (6) and that there is detailed guidance for the teacher.

Voix et images de France²³ is the only one of these five programs to have been developed entirely by French people in France. (1) It is based on Le français fondamental since both it and Voix et images de France were prepared by CREDIF. Je parle français was also prepared to a large extent in France but the leaders of the team were Americans. The fact that the program was prepared in France is sufficient reason, in some circles, to justify its choice. The program was developed for teaching French to foreigners arriving in France. A large number of these foreigners came from North Africa, but many others came from other countries of Europe as well as from different parts of the world. The only thing that they had in common was the fact that they did not know French. They certainly did not have a common mother tongue. A program which was developed to teach French to people who had a great variety of mother tongues would appear not to be as scientifically selective as it could be where one is teaching French to students whose mother tongue by and large is English. Linguistics makes a major contribution to language teaching because, by contrasting the mother tongue of the learner and the second language, it is able to determine in advance the points of interference.

(2) The starting point of a lesson in Voix et images de France is also the dialogue. It is presented with filmstrips and a tape recorder.

The presentation of the material is followed by an explanation, always in French, and then by repetition to achieve mastery. The fourth

²³P. Guberina (ed.), CREDIF, Voix et images de France (Paris: Didier, 1964).

stage is called the transposition stage and it aims "to utilize the vocabulary of the present and preceding lessons and of the objects, gestures, attitudes of the people and their situation in the pictures, in structures that are known and are constantly repeated."²⁴

(3) The following devices are used to achieve this purpose: (1) The student is asked to respond spontaneously to another showing of the filmstrips. In so doing he frequently uses forms previously learned to comment on the illustrations of the current lesson. (2) The student is asked to relate the direct conversations of the lesson. In so doing, without changing the structures, he has to modify the variable forms of the verbs, personal pronouns, subjects, complements, possessive adjectives, etc. He is asked to describe the individual pictures. (4) He is asked questions on the lesson without the use of pictures. (5) The teacher transposes the subject of the lesson into the student's real life. The exercises described so far are devised to get the student to repeat the basic structures that he learned in the original dialogue. There are a few instances in which the student is asked to make isolated transformation of grammatical forms, for example in order to answer questions. These are good exercises; they are as old as language. However, they do not give concentrated practice on certain specific problems. They give little guidance to the teacher in anticipating the problems that the students will encounter.

It is claimed that this problem is handled by the use of the second filmstrips provided for each lesson to do the exercises that are called "mécanisme" (roughly translated "pattern practice exercises"). One of

²⁴Joan G. Kist, Teaching with Voix et images de France (Philadelphia: Chilton Books, 1963).

these structures to be taught in Lesson 19 is the pronoun "en." The following examples of its use are found in the dialogue for the teaching of "mécanisme":

En voilà.
 Tu en veux.
 Tu en as.
 J'en aurais demain.
 Il va m'en envoyer.
 Donne-m'en.
 Prends en.
 Prends en une.
 J'en ai une bouteille.

A sample lesson suggests how each structure should be taught.

All questions must tend to make the student utilize the grammatical form taught in the lesson. The teacher presents situations calling for the use of this form and lets the students suggest such situations.²⁵

(4) Voix et images de France has a very complete and useful plan for the teaching of pronunciation although it is a bit rigid in its insistence that the tape and never the teacher should be used for modeling pronunciation. It is suggested that the phonetic exercises should be conducted in the language laboratory.²⁶ It is assumed that the reference here is to a full-scale laboratory and not to the tape recorder which is considered an essential part of every language class using Voix et images de France.

This seems to be an unwise use of the language laboratory since students who have no problems with pronunciation will be able to imitate a master model almost immediately, while those who do have a problem will not be able to evaluate themselves objectively and will require individual

²⁵Kist, op. cit., p. 167.

²⁶Kist, op. cit., p. 39.

help in the classroom from the teacher for correction.²⁷

(5) Further on one reads:

The language laboratory, however, is not a necessity in this course. Generally speaking, the methodology of Voix et images de France assumes that language learning is enhanced by structuring the classroom environment upon significant cues which relate to language usage in the real environment.²⁸

This is indeed an understatement. Not only is the laboratory not necessary for teaching this course, it is of no value. Few if any of the exercises designed are suitable for use in a language laboratory.

The program Voix et images de France can be criticized for several reasons. First it is assumed that the sketches on the filmstrip are sufficient to transmit meaning. Experience has shown the writer that many of these sketches fail in this respect. A single sketch will bring forth as many as seven or eight different responses even from native speakers of French.

Secondly, a list of sentences such as provided in Lesson 19, to illustrate the use of "en" is not helpful because it groups several structures and problems while suggesting that there is only one there. Besides the program does not give exercises for teaching these various structures. The only help that the teacher receives is from a sample lesson. Every lesson should be detailed at least as much as the model.

Thirdly, the program teaches conscious choice but it is not planned to develop habitual usage.

²⁷J. S. Holton et al., Sound Language Teaching. The State of the Art Today (New York: University Publishers, 1961), p. 67

²⁸Kist, op. cit., p. 133.

To summarize the observations made about Voix et images de France the following conclusions can be made. (1) The program is based on Le français fondamental. (2) The exercises, which consist mostly of repetition and question and answers, do not focus particularly on the problems of the speaker of English and do not direct the teacher to give concentrated practice on each specifically identified structure. (3) There is a complete plan for teaching the French sound system. (4) While a projector and tape recorder are necessary to teach this program, it does not fit in with the use of a complete laboratory.

Conclusion. Five teams of authorities and specialists have attempted to design programs that are up-to-date linguistically speaking. These teams have succeeded in writing dialogues that are authentic enough to seem natural if they were spoken in France. They have experimented in the use of visual aids to transmit meaning, to provide interest, to create a cultural atmosphere, or to aid memory. They have attempted to be selective in what they teach, and this selection has been on a scientific basis. All have succeeded in producing programs that are superior to what has been available. However, they seem to have failed, partly at least, in establishing a balance between, on the one hand, making the student aware of the framework of the language and, on the other hand, making the use of the structures of that language an unconscious habit. The teacher who is aware of the limitations of these programs may be able to overcome them, at least in part, until the new programs that are now in the mill become available.

The writer, faced with making a choice from the five programs just surveyed, would not select Je parle français because it does not have

properly controlled vocabulary, because the drills are not planned to make the student aware of structure or to make him learn to use the structures automatically, and finally because there is no over-all plan for dealing with pronunciation problems.

The writer also would not select Voix et images de France because it does not provide for intensive drill on the points of interference between French and English, it does not provide enough concentrated drill on each individual structure to ensure mastery of the problem, and it does not give the teacher in every lesson the necessary detailed guidance required.

Audio-Lingual Materials should not be selected either because it does not take the student past the point of conscious-choice. According to Lado the conscious-choice of language learning should represent no more than fifteen percent of the learning time.²⁹ The teacher is then left with planning activities for eighty-five percent of the time.

Learning French the Modern Way does not have enough exercises aimed at making the student aware of each structure and not enough to develop automatic response. It does not give sufficient help to the teacher in teaching sound production. It provides grammar generalizations with bilingual examples to which the traditionally-oriented teacher, who gets only general guidance from the manual, may turn, thereby taking away from emphasis on performance in the language.

The only weakness that the writer sees in Le français: Ecouter et parler is the lack of drills to make the student aware of the structures he is learning. Since this weakness may be more easily overcome than

²⁹Lado, op. cit., p. 95.

those found in the other four programs, this is the one that the writer would select.

All of these five programs however, are superior to the traditional ones because they have overcome many of the weaknesses of the latter. Examples of these weaknesses can be found in one traditional program that is still in use in Manitoba.³⁰ (1) The control of the vocabulary in this program depends on the author's preference. (2) There is a sixty-one page introduction called "A Conversational French Introduction to French" in which an attempt is made to establish in the student's mind the equivalence of phonetic symbols to certain orthographic groups. From then on the entrance to new material will be by way of a reading passage. No other help is given for speech production. Problems of intonation, rhythm, liaison, linking, or juncture are not dealt with. (3) There is a deliberate effort to avoid all structures that cannot be explained at that moment. The result is often trite and unnatural language, e.g.:

(1) "Desires-tu aussi le pain, papa?"³¹ for
"Veux-tu aussi le pain, papa?"

(2) "Deux arbres sont dans le jardin."³² [sic]

(3) "Madame Dubois regarde Marie. Marie regarde Mme. Dubois. Puis elles regardent la table. Le sel est sur la table. Il est aussi dans la citromnade de Marie."³³

³⁰ W. E. Keiser, Mes premières années de français (Toronto: Clarke Irwin and Co., Ltd., 1957).

³¹ Ibid., p. 15.

³² Ibid., p. 23.

³³ Ibid., p. 30.

The reader will have guessed that first conjugation verbs and prepositions of location have just been taught. This language is dull when compared with this example taken from Lesson 1 in Le français: Ecouter et parler:

Paul et Louise, comment vont-ils?
 Paul va fort bien. Mais Louise est malade.
 J'en suis désolée.
 Oh! Ce n'est pas grave.
 Non? Tant mieux.
 Tu diras bien des choses chez toi.

(4) The student is expected to decipher the meaning of the reading passage using the vocabulary list provided, instead of having the meaning given to him so that he can gainfully use his time performing in the language. The writer has visited many classes where a daily ritual is a vocabulary translation test followed by writing the correction of the mistakes ten times. (5) French is explained in terms of English, e.g.

- (1) "Demander" means to "ask for" and not just "to ask" if it is followed by a direct object.
- (2) "S'il te plaît" means literally "if it pleases you."
- (3) The infinitive of a verb in French is translated by the preposition "to" plus the verb in English.

(6) Grammatical generalizations are numerous, detailed, and they are considered an important preparation to performance. The exercises that follow take on the appearance of test items aimed at discovering whether the student remembers where to apply the generalizations. Many of the mediocre students spend much time proving that they don't remember and are rapidly losing the last shreds of self-confidence. (7) Students are expected to use language out of context when, for example, they write verb paradigms or translate phrases like "does he not live?"

These are seven outstanding ways in which traditional programs violate principles of language learning established by modern linguistics.

CHAPTER VIII

THE TRAINING OF TEACHERS OF FRENCH IN MANITOBA

An attempt will be made in this chapter to describe the type of training helpful to prospective teachers of French in Manitoba. In order to arrive at these recommendations a look will be taken at the uniqueness of the language teaching situation in Manitoba and at the characteristics of the personnel that constitute the supply of French teachers for the province.

Manitoba is unique in that between 70% and 80% of all its high school students study French at one time or another. While this fact may indicate a favorable climate for the learning of French, it means that the language teacher is faced with a wide range of ability and attitude among students of French. Techniques that have been found suitable in areas where French is studied only by students of high ability and high motivation may be unsuitable here. In spite of the fact that a high percentage of the high school population does study French, social and economic pressures for learning French in Manitoba are almost non-existent. One can belong to the upper classes and occupy prominent social positions in Manitoba without any knowledge of French at all. There are very few instances where it is economically advantageous to conduct business in French. The result is that motivation for language students has to be found elsewhere.

The educational administrative philosophy of the province still has for a principle the belief that a suitable class size in one subject is also suitable in another. Language teachers in Manitoba are frequently

faced with classes of forty, while Georgetown University allows three specialists for a class of no more than ten students, and while the researchers of CREDIF at L'Ecole Normale de St. Cloud in France suggest that the maximum size for a language class should be fifteen. There is still in Manitoba the common belief in the value of the generalist teacher at the junior high school level, and even sometimes at the senior high school level. Consequently, a teacher may be expected to handle as many as three or four subjects. Other things being equal, he has not had as much time to prepare for the teaching of French if he has had to direct his preparation to several subject fields. Supervisors in the person of inspectors, superintendents, principals, also tend to be generalists. Manitoba does not have a provincial supervisor of languages, and there are only two divisions within the province that have a supervisor. The young teacher will have to turn to the traditionally-trained teacher of more experience who may be out of contact with the recent developments in the field of language teaching.

There are several factors, on the other hand, that favor the teacher of French. There is a fairly active French speaking community in the province, even though it is small. Its vitality is manifested by radio, television, theatre, educational institutions, cultural associations, religious groups, and a certain political and business activity. The presence of a multiplicity of languages in the province makes the possession of more than one language a naturally desirable state of affairs. The present national and international climate also favors the learning of French. Many adult Manitobans study French in their spare time. And Manitoba is

the only province where the teaching of French as a second language is permitted from Grade 1 on.

The teachers of French in the province are of three types. There are the native speakers who know English well, then there are the native speakers who know little or no English, and there are those for whom French is a second language. The main weakness of the native speakers who know English is that they do not realize the difficulties of the second language learner. It is likely that they were brought up in French-speaking homes in an English-speaking community. They had the advantage of constant, abundant exposure to both languages--exposure in time which exceeds by far what could possibly be offered to school students. These teachers may tend to neglect the importance of student motivation. In their own case motivation was provided by the community. Besides, they may be careless in their pronunciation, and tend to use a form of expression which is as English as it is French. They may also be isolated culturally from a French-speaking community, seeing French magazines and books only occasionally, being unfamiliar with new films and songs. This will result also in their not acquiring the new words necessary to designate new ideas such as styles, motorcycles, and inter-planetary vehicles.

The teacher who speaks little or no English may find it difficult to understand the mentality of the Manitoba high school student and may find it difficult to communicate with him. If this teacher is interested primarily in French culture, he may not be able to find a common ground from which he and his students can start. Not knowing the two languages, he will not be able to make the necessary contrasts to arrive at the knowledge of the problem that his students face. Not realizing the difficulty of

learning a second language may also cause him to proceed at too rapid a pace.

The non-native speaker of French, may know literary language better than the spoken day-to-day language. It is likely that the description of language that he was given at school was of the written language. His grammar told him that the sign of a plural on an adjective was an [S] rather than a [Z] sound connecting it with the next word beginning with a vowel, or that the feminine sign of an adjective was an "e" ending rather than that it was a sounded final consonant, or again that there was just one plural definite article, namely "les" rather than that there were two spoken plural definite articles depending on whether "les" was followed by a word beginning with a vowel or a consonant.

It is likely too, that he relies upon the generalizations that fill our grammars and that are only partly true. The following are examples of these faulty generalizations: (1) "De" is always used in front of a plural noun preceded by an adjective. (2) After a negative "de" is always used before a noun. (3) "Ce" is always used in front of the verb "to be" if it is followed by a noun modified by an adjectival clause.

This teacher is also likely to stereotype the French people--a result of limited contact. He is also likely to be culturally isolated from French-speaking society. His speech is likely to be phonetically imperfect and filled with hesitations. He is also likely to be unskilled at listening, requiring excellence of presentation for understanding. He is also likely to be a compound language learner, that is to say, someone who learned his second language by way of the first one rather than independently of it. As a result, he continues to consider this language only in relation-

ship to his own, rather than having a form and meaning of its own. He is likely to guide the learner to follow the same pattern also.

The preceding section has listed some of the handicaps that the language teachers may have. The following section will indicate what type of training could help the teachers overcome some of these handicaps. Ideally, the teacher of French should have complete facility in both French and English. What is required here primarily is not an acquaintance with the literature of both languages but rather an acquaintance with the language itself. This acquaintance should include an ability to understand spoken French in its various accents, and an ability to speak a French that is fluent and understandable to any native. A course in descriptive linguistics would help the teacher to make his own observation about the language, and also to understand the most up-to-date descriptions of French that are available. A course in contrastive linguistics would help the teacher to foresee the areas of interference between the two languages and would make him less dependent upon the comparisons that have been made by linguists such as Robert Politzer.¹ A course in corrective phonetics could help the teacher bring his own speech up to standard and one in descriptive phonetics would help him assist his students to achieve a proper standard of pronunciation. A course in stylistics would help the teacher to distinguish between French and English style of speech and writing.

Provision also needs to be made for continued cultural contact with the live French cultures that exist in Manitoba, in the Province of Quebec,

¹Robert Politzer, Teaching French: An Introduction to Applied Linguistics (New York: Ginn and Company, 1960).

France, or in other areas. Radio, television, recordings, films, books, and French magazines are of prime importance. But, ideally, these contacts are not sufficient. There must be a period of steeping in a culture, in order to understand it. An acquaintance with literature is necessary for any cultured person, but there is a danger that high school courses will be over-loaded with too much literature, too soon. One has to acquire a certain command of language before being able to benefit from the contact with literature.

The prospective language teacher would also need to be trained in the development and administration of tests. The evolution of techniques of language teaching in Manitoba has been held back by the fact that examinations have not evolved to keep pace. They have left unexamined several of the objectives of the language programs, this in turn has led to the omission of these aspects from the Manitoba courses.

The teacher training courses that have been suggested so far would provide suitable guidance as to the content of high school French courses. Others would be necessary to provide guidance in methodology. A course in psycho-linguistics would help the teacher to understand the type of language course which is most suited to each age. It would give him an insight into methods of helping students develop language habits, into helping them acquire the meaning of language, into helping students retain vocabulary and structures that are learned. It would give insights into the motivation of students. It would also indicate what aspects of language can be developed most effectively as a coordinate (independent) or as a compound (dependent) of the mother tongue. These are but a few of the areas that could be explored in a course in psycho-linguistics.

The prospective teacher would also need help in the preparation and use of visual materials, the preparation and use of audio materials, and in the selection, operation, design, and use of audio-visual equipment. Language laboratory equipment is so complex that its purchasing cannot be left to someone who does not understand how it can be used in language teaching. It is also complex enough that it has to be understood if it is to be used effectively.

The amount of preparation proposed for the language teachers could not be provided within the amount of time which is presently provided for the preparation of a language specialist. The answer is not in the removal of the courses in the foundations of education that are now included in the teacher training program. The answer rather seems to be in the lengthening of the teacher preparation program and the inclusion at the under-graduate and post-graduate levels of sequences in applied linguistics, in psycho-linguistics, and in the other areas mentioned earlier.

Conclusion: Language laboratories can be an effective aid in the teaching of French in Manitoba high schools provided certain conditions are met. The equipment selected must be tailored to the situation. The administrative plan of the school must take the laboratory into account. The laboratory must be equipped with an abundance of suitable recorded materials and the laboratory must be used frequently. The whole program must be permeated with linguistically modern thinking. All must be coordinated, directed, and animated by a teacher who has received thorough training.

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